PN-ABK-879

PROFESSIONAL MANAGERS PROGRAM

University of Economics,
Prague

and

University of Illinois . Indiana University
University of Iowa . Michigan State University
University of Minnesota . Ohio State University
Purdue University . University of Wisconsin

MUCIA

Midwest Universities Consortium for International Activities, Inc.

Management Training and Economics Education in Central and Eastern Europe

Project Managed by
School of Business • Indiana University • Bloomington, Indiana 47405

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Donald Sexton
The Ohio State University
Hanns Martin Schoenfeld
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March 9, 1992

Welcome to the Professional Managers Program! This unique program will improve your managerial skills that are needed to succeed in a free enterprise system. The program has been carefully designed by the University of Economics, Prague and MUCIA business schools, supported by the United States Agency for International Development.

This program develops your capacity as a leader by providing an understanding of the functions of general management combined with a sophisticated appreciation for the changing world environment. You will learn to connect the key business functions -- marketing, finance, business economics, accounting, human resource management, strategy, production, and logistics. Upon completion of the program, you will be able to link these functions to successful strategic planning in your enterprise.

The Professional Managers Program trains you to identify and achieve competitive advantages in the complex global market facing Czechoslovakia.

Our faculty team looks forward to sharing their insight and experience with you in this exciting program.

John A. Boquist

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LOGISTICAL TEAM

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John Boquist received his undergraduate degree in Industrial Engineering from General Motors Institute and a Master of Science and Ph.D. degree from Purdue University. He is Professor of Finance at Indiana University. His areas of expertise include corporation finance, financial strategy and analysis, banking and investments. He has served as the Director of Executive Education for the School of Business from 1985-1990. He also has extensive teaching experience in executive education programs around the world. He serves as a consultant in the areas of corporate finance, policy and strategy, public utility regulation and litigation testimony. Professor Boquist is the co-author of a case book and numerous research articles and papers. He is a frequent participant in national professional meetings as a paper presenter, as a paper discussant, and as a session chair. Professor Boquist has taught at the undergraduate and the graduate levels, with recent emphasis on corporate financial strategy at the MBA level. He has taught banking, investments, financial policy, financial planning,and financial management. Professor Boquist was a visiting faculty member at INSEAD in 1981, 1982, and 1991. He is the recipient of university teaching awards at Indiana and INSEAD.

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Born in Hong Kong, Mrs. Eoyang was educated at Smith College and Columbia University. In New York, she worked as an editorial assistant and researcher for Time magazine. In Bloomington, she held positions as grants coordinator and program administrator for the Professional Development Division of the School of Continuing Studies, where she remained until 1988. That year she joined the American Center for International Leadership as Development Director. In 1989, after a highly successful year with ACIL, raising more than $200,000, she joined the IU School of Business as Director of International Programs. She has extensive experience living and working in Western and Eastern Europe and in the People's Republic of China. She speaks French, Chinese, and Japanese.

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Graduated at the University of Economics, Prague in 1983. After finishing studies, worked at the Department of Economic of Industry (1983-89) as a research assistant. Researched in the field of economic evaluating and pricing of production resources. Later began to teach Economics of Industry, Enterprise Performance, and Quantitative methods. In 1988 spent three months in Yugoslavia, Economic Faculty, University of Rijeka, and did research in management. In 1989 finished five years of post-graduate studies; thesis written on topics of Pricing of Production Resources. Since 1990, member of the Department of Management, teaching and researching Financial Management. Short-time studies in Austria, Belgium, France and USA. Active in consulting and a member of the Board of Directors in Czech company.

PROFESSIONAL MANAGERS PROGRAM
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Timothy T. Baldwin is an Assistant Professor of Human Resource Management in Indiana University's School of Business. Professor Baldwin received his doctorate in management from the Graduate School of Business, Michigan State University, and holds a Master's Degree in Business Administration (MBA) from MSU as well. Professor Baldwin has published his research work in professional journals such as, Academy of Management Journal and Journal of Applied Psychology, and has won three Best Paper Awards from the National Academy of Management. He also teaches a variety of courses in the Indiana University MBA program and has been awarded the MBA Teaching Excellence Award each of the last four years. Professor Baldwin's background includes consultation with firms such as Eli Lilly & Co. and Cummins Engine and his professional affiliations include the National Academy of Management and the American Society for Training and Development.

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Martha Cooper is Associate Professor of Marketing and Logistics at the Ohio State University. She received a B.S. in Math/Computer Science and a Masters in Industrial Administration from Purdue University. Her doctorate is from Ohio State. Professor Cooper's research interests include customer service, the role of information technology in logistics practice and education, the effects of changes in Europe on logistics practice, applying market segmentation to logistics strategy development, and improving the manufacturing/logistics interface. She co-authored three books, Customer Service: A Management Perspective, Partnerships in Providing Customer Service: A Third-Party Perspective, and Strategic Planning for Logistics. She has published over thirty articles and made more than fifty presentations.

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Alan C. Filley is a professor in the University of Wisconsin School of Business. He is a Wisconsin Distinguished Professor and holds the W.T. "Bill" Graham Chair of Small Business and Entrepreneurship. He is the founder and director of the Center for Small Business and Entrepreneurship which began in 1986. He has published seven books. He was Chair of the Managerial Consultation Division (1989-90) and chair of the division of Organizational Behavior (1978-79) in the Academy of Management, and is a Fellow of the Academy. He was president of the U.S. Association for Small Business and Entrepreneurship (1988-89) and is a Fellow in the organization.

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Gil Harrell is Professor of Marketing at Michigan State University. His international research, consulting and teaching interests focus on marketing, strategic planning, sales management, marketing research and buyer behavior. His publications have appeared in the Journal of Marketing, Journal of Long Range Planning, Journal of Marketing Research, Journal of Consumer Research, Journal of Health Care Marketing, International Marketing Managerial Perspectives, and other journals. Dr. Harrell's text, Consumer Behavior, has been adopted widely by major universities. He is a regular participant in American Marketing Association Conference and the Association for Consumer Research. As a consultant, Gil Harrell specializes in systems for marketing strategy, marketing management, and planning. He has worked with numerous corporations in over 15 countries to create organizational change through the application of tools for effective marketing. Clients include ABB, Westinghouse, Eastman Kodak, General Motors, Brunswick Corporation, UPS, Detroit Edison, Delco Remy as well as others. Dr. Harrell's doctorate degree is from Pennsylvania State University.

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Bruce L. Jaffee is Professor and Chairman in the Department of Business Economics and Public Policy at Indiana University. He has an A.B. degree (1967) and M.A. (1969) from Brown University and a Ph.D. (1971), with distinction, in economics form Johns Hopkins University. From 1980 to 1984 he was the director of the doctoral programs in business at Indiana University. He has taught at Johns Hopkins University and the Stonier Graduate School of Banking and has worked as an economist for the U.S. Army Corps of Engineers Civil Works. In 1981 and 1990 he taught economics in a management education program at the Shanghai Institute of Mechanical Engineering, where he is also an advisory professor. He has given lectures on economic topics in New Zealand and Slovenia. He is also the author of numerous articles and reports in the fields of public utility regulation, taxation, energy policy, and industry regulation. Current research deals with electricity pricing, public utility regulation, export promotion policy, and energy policy and forecasting.

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Teaching and research interests are in international marketing and business. Doctoral work was at the University of North Carolina at Chapel Hill and Masters in Management at Northwestern University. Previously, president of a telecommunications construction company and was involved as founder, director or officer in business related to: cable television systems, real estate development and distribution of utility materials. Publicly Professor Mullen has been involved in local economic development efforts, the Chamber of Commerce, and as a member of various educational boards.

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Ram Narasimhan is a Professor of Management and Director of Research at the Center for International Business Education and Research at Michigan State University. He is widely published in Academic Journals such as Management Science, Decision Sciences, European Journal of Operations Research, and International Journal of Production Research. He has consulted with and conducted executive training for over 150 large and medium sized manufacturing firms. He has been a consultant for GM, Chrysler, Detroit-Edison, Blue Cross-Blue Shield, Allied Signal, MichCon and other firms and governmental agencies. He the Co-author of the recently published book "Computer Integrated Manufacturing." He is on the editorial board of the Journal of Operations Management. He a member of DSI, TIMS, APICS and the Academy of Management.

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Philip M. Podsakoff is a Professor of Personnel and Organizational Behavior. He received his doctoral degree in 1980 from Indiana University, and joined the faculty of the School of Business in 1982, after teaching for two years at Ohio State University. His major research interests include transactional and transformational leadership processes, the relationship between employee attitudes and behavior, the antecedents and consequences of employee "citizenship" behaviors, power and social influence processes, and field research methodologies. He is a member of the Academy of Management, and is past Chair and Program Chair of the Research Methods Division. He is the author or co-author of over 35 articles that have appeared in the Academy of Management Journal, Psychological Bulletin, Organizational Dynamics, The Leadership Quarterly, Sex Roles, and the Journal of Occupational Behavior, among other journal. Currently, he serves on the editorial board of three academic journal, and regularly serves as an ad hoc reviewer for several others. He has served as the Chair of Indiana University's Executive Education department, is the recipient of several university teaching awards, is a past Lilly Teaching Fellow, and has served as a consultant to several Fortune 500 Companies.

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Donald L. Sexton holds the William H. Davis Chair in the American Free Enterprise System in the College of Business at The Ohio State University. Prior to joining Ohio State, he was the Director of the Center for Entrepreneurship and the Caruth Professor of Entrepreneurship in the Hankamer School of Business at Baylor University. Dr. Sexton holds a BS in Math/Physics from Wilmington College and an MBA and Ph.D. from The Ohio State University. Prior to joining academe, he spent 18 years in industry. He has co-authored or co-edited seven books. the most recent are Entrepreneurship: Creativity and Growth (1990) with Nancy Bowman-Upton, and The State of the Art in Entrepreneurship (1992) with John Kasarda. He has also served on a number of editorial review boards and has received the Leavey Award for Excellence in Private Enterprise Education and the Association of Collegiate Entrepreneurs Award as an Outstanding Entrepreneurship Educator. He is the Senior Entrepreneurship Chair holder in the United States.

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Stuart G. Shepley is Director of Management Training and Challenge Programs at Indiana University's 2300 acre Outdoor Leadership Center at Bradford Woods. He is also a part-time faculty member in the School of Health, Physical Education, and Recreation. He is an experienced teacher, facilitator, consultant, and administrator. Stuart has been Program Director at Bradford Woods for five years, since moving to the U.S. from England. In England, he was purchasing manager for an international coal mining company and a production manager for an engineering company. He has taught at both the graduate and undergraduate levels. Areas of expertise include experiential training methodologies, adventure-based counseling, and leadership. He is currently co-authoring a book in adventure-based counseling. Through his association with the Indiana University School of Business, he has consulted with many international companies, specifically in the area of developing and managing effective teams. Shepley holds undergraduate degrees in management studies and social work from schools in England, and a Master's degree from Indiana University.

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Dr. Sparrow received his Ph.D. in Economics and Operations Research form the University of Michigan and currently the Director of the Institute for Interdisciplinary Engineering Studies (IIES) and the State Utility Forecasting Group (SUFG). He is also a Professor of Industrial Engineering and Professor of Economics. Prior to his association with Purdue, Dr. Sparrow taught for 10 years at the Johns Hopkins University, as well as serving as chairperson of the Industrial Engineering Department at the University of Houston. Dr. Sparrow's primary concerns are interdisciplinary, with an emphasis on energy modeling and analysis, electrotechnology commercialization, industrial electrification, and transportation. He is the author or co-author of more than 90 papers, presentations, and reports on these topics, as well as on matters relating to economics, operations research, and industrial engineering. His honors include selection as a Ford Foundation Research Professor and invitations to speak before various organizations in the U.S., Europe, and Japan. Dr. Sparrow is consultant to various government agencies, electric utilities, and to the iron and steel industry.

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Rosann Spiro recieved her Ph.D. from the University of Georgia and is a Professor of Marketing at Indiana University. She is currently a Visiting Professor at the Institute of Management, University of Aarhus in Denmark. She is a faculty member in the IU-Budapest University of Economic Science FIPSE sponsored Management Training Program for which she made a marketing presentation and participated in a case methodology workshop in Budapest, Hungary. She lectured in a Business Entrepreneurial Series in Poznan, Poland in association with an USAID grant and been a guest lecturer at Erasmus University in Rotterdam. Her publications include: "Salesperson and Product Country of Origin Effects on Attitudes and Intentions to Purchase," Journal of Business Research and "Communication Style in the Sales Interaction: Consequences and Antecedents," in Recherches Sur La Communication/Promotion.

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Dr. Howard J. Strauss holds degrees (B.Ch.E.) from City College of New York and (M.S. and Ph.D.) from Columbia University. He recently retired form INCO ElectroEnergy Corp. where he was a Director and Vice Presidents (Operations & Engineering). At INCO he was responsible for the operations of 88 manufacturing facilities and five engineering laboratories in 22 countries. In addition to his current affiliation with the University of Minnesota, Dr. Strauss has also taught at the Cooper Union for the Advancement of Science and Art, Rockford College,and Columbia University. He is the author of the Chemical Technician's Handbook, contributed chapters for four handbooks, and has written numerous professional articles. Among the organizations with which Dr. Strauss has been affiliated are the American Management Association (where he served two terms on the Manufacturing Council), the Industrial Research Institute, and the Franklin Institute. His biography has appeared in the Register of Directors and Executives, Who's Who in Finance and Industry, and American Men and Women of Science.

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Received Ph.D. Prague School of Economics, specializing in Management, in 1980. In addition to being a Professor at the University of Economics, Prague, he is also faculty at Charles University. He works extensively with a wide cross section of Czech industry and with the Banks in the areas of: financial appraisal, asset valuation, project valuation, and investment funds. Regular contributor to the Strathclyde University MBA program and to the Georgetown University course "A Program of Management Development for Czechoslovakia Executives." Professor Drechsler has also published over 40 books and articles.

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Graduated at Prague's University of Economics in 1970. He worked for three years at the Institute for Material Handling (IMADOS) as a research assistant. 1973, return to UEP as a research assistant, working on logistics. In Finished five years of postgraduate studies in 1980 with theses on the theme: Optimation of material flow. Named as associate professor in 1985. Leader of research team concerned with the problems of the Economics of the Innovation Process. Currently teaching general Management and Logistically Marketing Management and Management of Innovation. Active in consulting.

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Received Ph.D. in economics. Professor of Management since 1977 and Deputy Dean of Faculty of applied economics at Prague School of Economics since 1990. Vice-Rector of University of Economics, Prague from 1990-1991. In 80th economic advisor of Czech government and current advisor of Ministry of transport. Main interests include: management of science and technology, innovation, and investment management. Long-term research activity, as head of research group, in the area of strategic management, science policy and technological innovation. Published about 150 articles and 2 books. Long-term consulting activity in management.

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Josef Koubek is a graduate of the Prague University of Economics (MA 1962, PhD 1977). In 1986 he received the Scientific Degree of the Czechoslovak Academy of Science. He is an Associate Professor in Human Resource Management with special interest: staffing the firm, employee development, local labor market, economic and social demography. Long-term pedagogic and research collaboration with Humboldt University Berlin and Warsaw School of Economics. Member, 1978-1984, of a working group at the International Union for the Scientific Study of Population (Liège. Belgium) and long-term collaboration with central state institutions and many firms. Member of the European Association for Population Studies (EAPS). More than 200 publications, from which about one third abroad (e.g. USA, Belgium, France, Italy).

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Milan Maly is a graduate of the Technical University of Ustrava (B.A., M.A.), and University of Economics of Prague (PhD). He is a Professor of Management and Organization and presently Vice-President for International Relations of the University of Economics, Prague. In the period of 1986-88 he was at the International Institute for Applied Systems Analysis in Austria doing research at Technology, Economy and Society Program. His many publications include: books, articles, and conference proceedings from the area of Production Management and Impact of Implementation of New Technologies. He is active as a consultant for many Czechoslovak industrial companies: ECE UN Geneve, MNIIPW Moscow, and a Member of two Boards of Directors of Czechoslovak Institutions as a non-executive member.

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Graduated at Prague's University of Economics (UEP) in 1980. Then worked as a systems analyst in a public sector company for a year before returning to UEP as a research assistant and worked on standards of effective enterprise. Later began to teach Enterprise automation and Managerial economics courses doing research on the field of Organization and Industrial automation. In 1989 finished five years postgraduate studies with these on the theme of Production systems development. From 1989-90 spent one year in Japan at Hokkaido University as a research student studying Japanese management and finance. Currently is teaching different Management and Organization courses and carrying on research monitoring CS economic reform from organizational point of view. Active in consulting.

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Graduated at Technical University Prague, faculty of Electronics. Received PhD in 1973 at Czechoslovak Academy of Sciences in cybernetics. From 1973-80 worked at the Bank of Czechoslovakia, which entailed strategic management, information systems, and automation. Since 1980 served at University of Economics, Prague as Chairman of department of Management. Partner of consulting PROCON INTERNATIONAL. Author of 5 books on management. Consulting to Czechoslovak and international companies, member of 6 boards of directors, member of board of MANAGEMENT STUDIES FOUNDATION.

MODULE TIME SCHEDULES

PRAGUE, CZECHOSLOVAKIA

Morning (AM)		Afternoon (PM)	
8:30-10:00	Class	1:30-3:00	Class
10:00-10:15	Break	3:00-3:15	Break
10:15-11:45	Class	3:15-4:45	Class
11:45-1:30	Lunch		

Session	Morning &/or Afternoon	Date
Business Economics	Morning & Afternoon Morning & Afternoon Morning	March 16 - Monday March 17 - Tuesday March 18 - Wednesday
Marketing	Morning & Afternoon Morning & Afternoon Morning	March 19 - Thursday March 20 - Friday March 21 - Saturday
Production	Morning & Afternoon Morning & Afternoon Morning	April 28 - Tuesday April 29 - Wednesday April 30 - Thursday
Logistics	Afternoon Morning & Afternoon Morning & Afternoon	April 30 - Thursday May 1 - Friday May 2 - Saturday
Accounting	Morning & Afternoon Morning & Afternoon Morning	May 11 - Monday May 12 - Tuesday May 13 - Wednesday
Finance	Morning & Afternoon Morning & Afternoon Morning	May 14 - Thursday May 15 - Friday May 16 - Saturday
Strategy	Morning & Afternoon Morning & Afternoon Morning	June 8 - Monday June 9 - Tuesday June 10 - Wednesday
Human Resource Management	Afternoon Morning & Afternoon Morning & Afternoon	June 10 - Wednesday June 11 - Thursday June 12 - Friday

BUSINESS ECONOMICS MODULE

March 16-18, 1992
Prague, Czechoslovakia

Session	Day 1 - March 16	Day 2 - March 17	Day 3 - March 18
8:30-10:00	Introduction: An Overview of the Basis of Competitive Market Structure	Corporate Governance and Enterprise Restructuring	Roles of Government in a Market System
Break			
10:15-11:45	The Central Elements of Market Competition, Including: Freedom of Entry and Exit, Risk Taking, and Hard Budget Constraints	Alternative Market Structures	Inflation, Unemployment, Monetary and Fiscal Policy in a Market Economy
Lunch			
1:30-3:00	Pricing Issues I	Issues in International Trade	
Break			
3:15-4:45	Resource Issues	Pricing Issues II	

BUSINESS ECONOMICS
PRAGUE, CZECHOSLOVAKIA

Issues and concepts in free market competition that affect decision making by business managers and owners: Developing the culture of a free enterprise system

Freedom of entry and exit
- risk-return concepts and issues
- hard budget constraints
- bankruptcy
- profits

Market competition
- domestic and international
- price, quality, delivery, credit terms
- consumer/customer sovereignty, power, and choice
- competitive implications of alternative market structures

Wage determination in a market system
- labor mobility
- unemployment
- hiring and firing

Pricing strategies
- price makers v. price takers
- cost based v. demand based systems
- role of international competition
- price discrimination
- market research
- advertising

Corporate governance: enterprise restructuring
- ownership v. control
- alternative organizational structures: advantages and disadvantages
  - sole proprietorship
  - partnership
  - corporation
- firm specialization: moving away from autarky
- role(s) of banks: financing v. ownership and control
- international issues: direct investment, minority ownership, international agencies

Problems and opportunities when moving from a highly monopolized to a competitive system
- supply (shortage) driven to demand driven
- transition issues
- privatization
- currency convertibility
- ownership of productive assets

Issues and concepts in market economies that affect the economic system

The price system as an allocator
- relative prices
- scarcity
- source of information

Opportunity cost
- decision-making
- choice

Gains from production v. arbitrage

Roles of government in a market system
- public goods
- negative and positive externalitites
- regulated industries
- police market competition
- redistribution (pensions, unemployment benefits, etc.)

Inflation and unemployment
- concepts: actual v. repressed
- implication for workers, consumers, business decision-makers and government officials
- short-run v. long-run
- caused by shortages or monetary factors

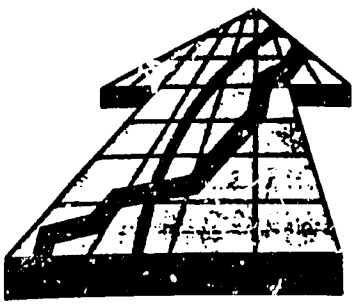
Monetary and fiscal policy
- interest rate determination
- central banks
- financial markets as a source of capital

International trade
- comparative advantage
- exchange rates

Specific industry studies
- highly competitive (e.g., textiles)
- monopolistic (e.g., some energy sources)

C H A P T E R • 1

The Nature and Scope of Managerial Economics



Effective resource management is a continuing challenge to managers in all types of organizations. Managers must develop clear policies so that the objectives of the organization can be efficiently realized. Resources must be obtained and organized; employees need to be trained and motivated. Information systems have to be installed to ensure that ongoing performance is accurately reported and monitored. Extensive knowledge and a wide variety of skills are required to complete each of these important tasks so that appropriate decisions can be made. One of the most important requirements for a successful manager is the ability to make good decisions, and one of the most important tools used by successful managers is the methodology of managerial economics.

managerial economics
Applies economic theory and methods to business and administrative decision making.

Managerial economics applies economic theory and methods to business and administrative decision making. Because it uses the tools and techniques of economic analysis to solve managerial problems, managerial economics links traditional economics with the decision sciences to develop important tools for managerial decision making. This is illustrated in Figure 1.1.

We can appreciate the use and value of managerial economics by examining both its prescriptive and descriptive components. Managerial economics prescribes rules for improving managerial decisions. It tells managers how things should be done to achieve organizational objectives efficiently. Managerial economics also helps managers recognize how economic forces affect organizations and describes the economic consequences of managerial behavior.

Managerial economics can be used to identify ways to efficiently achieve virtually any of the organization's goals. For example, suppose a

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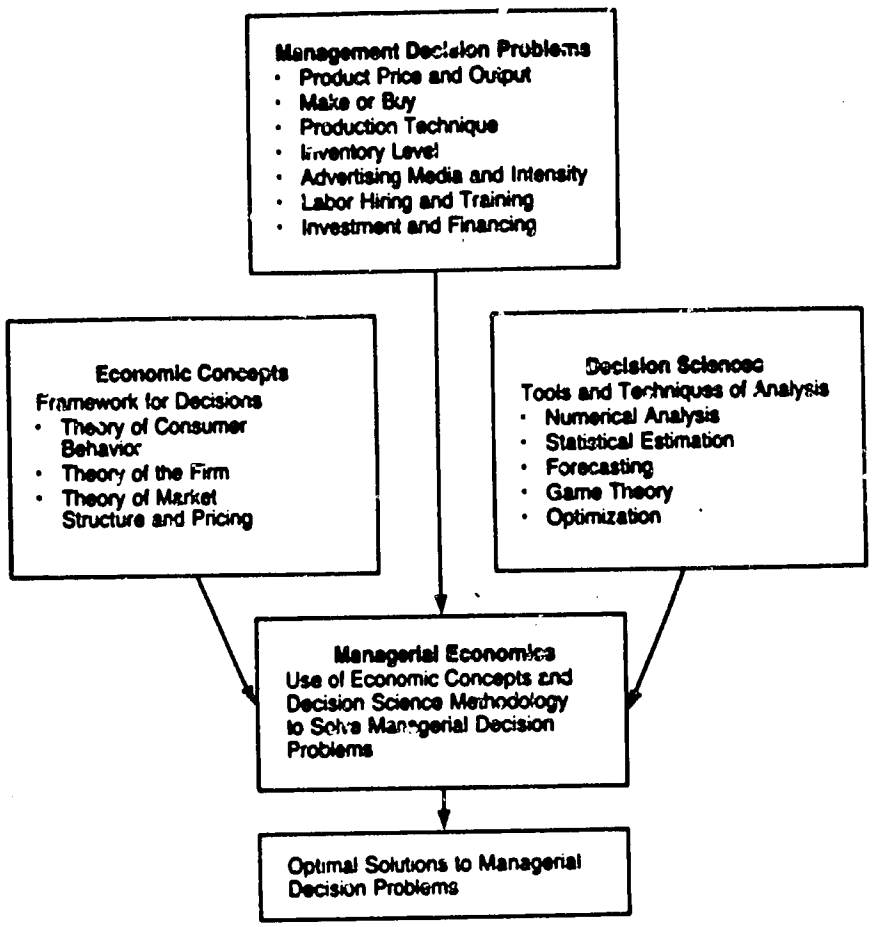
■ Figure 1.1
The Role of Managerial Economics in Managerial Decision Making

Managerial economics uses economic concepts and decision science techniques to solve managerial problems.



small business seeks rapid growth in order to reach a size that will permit efficient use of national media advertising. The firm's managers can use managerial economics to identify pricing and production strategies that will help meet this short-run objective as quickly and effectively as possible. Similarly, managerial economics provides pricing and output rules that will permit the company to maximize net profits once it has achieved its growth objectives.

Managerial economics also has prescriptive applications outside the for-profit sector of an economy. For example, an administrator of a non-

profit hospital strives to provide the best medical care possible given limited medical staff, equipment, and related resources. Using the tools and concepts of managerial economics, the administrator can determine the optimal allocation of these limited resources. In short, managerial economics helps managers arrive at a set of operating rules that aids in the efficient utilization of scarce human and capital resources. Following these rules enables businesses, nonprofit organizations, and government agencies to meet their objectives efficiently.

To establish appropriate decision rules, managers must thoroughly understand the economic environment in which they operate. Managerial economics describes how economic forces affect and are affected by managerial decisions. For example, a grocery retailer may offer consumers a highly price-sensitive product, such as milk, at an extremely low markup over cost—say, 1 or 2 percent—while offering less price-sensitive products, such as nonprescription drugs, at markups as high as 40 percent over cost. Managerial economics describes the logic of this pricing practice with respect to the goal of profit maximization. Similarly, managerial economics reveals that imposing auto import quotas reduces the availability of substitutes for domestically produced cars, raises auto prices, and creates the possibility of monopoly profits for domestic manufacturers. It does not tell us whether or not imposing quotas is good public policy; it only describes the predictable economic consequences of such actions.

With its prescriptive and descriptive components, managerial economics provides a comprehensive application of economic theory and methodology to managerial decision making. Managerial economics is just as relevant to the management of nonbusiness, nonprofit organizations, such as government agencies, cooperatives, schools, hospitals, museums, and similar institutions, as it is to profit-oriented businesses. Thus, while this text focuses primarily on business applications, it also includes examples and problems from the government and nonprofit sectors to illustrate the broad relevance of managerial economics concepts and tools.

THEORY OF THE FIRM

A useful way to begin our study of managerial economics is to consider the broad framework within which we analyze managerial decision making. A business enterprise is a combination of people, physical and financial assets, and information (technical, marketing, coordinative, and so on). People directly involved include stockholders, management, labor, suppliers, and customers. In addition, all of society is affected by a firm's activity, because businesses use resources that would otherwise be available for other purposes, pay taxes if operations are profitable, provide employment, and produce most of society's material and services output.

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1.1 Managerial Application

Is Value Maximization Relevant?

During the mid-1980s, Dennis B. Levine, a managing director of mergers and acquisitions for Drexel Burnham Lambert, Inc., admitted to stealing material nonpublic information from his employer and using it to amass millions of dollars in illegal stock market trading profits. The scandal broadened when the Securities and Exchange Commission announced that Levine had cultivated a mutually profitable relationship with Ivan Boesky, a stock market speculator. Levine supplied Boesky with tips concerning pending merger announcements in return for a share of any trading profits Boesky realized. Both Levine and Boesky, along with others implicated in this insider trading scandal, were forced to give up ill-gotten profits, paid additional millions of dollars in fines, served time in federal prison, and were barred from the securities business for life.

In an unrelated development, *Business Week* ran an exposé concerning Robert Buckley, chief executive officer (CEO) of Allegheny International, Inc. In its investigation of the company, *Business Week* uncovered lavish spending on executive perks, conflicts among "independent" members of the board of directors, and limited disclosures to stockholders. Other benefits for top executives included frequent nonbusiness use of corporate aircraft, personal loans at below-market interest rates, and placement of children of senior executives on the corporate payroll. *Business Week* asked, "What is going on here?"

What indeed! Clearly, these instances of self-dealing on the part of employees and corporate executives simply cannot be regarded as being consistent with the long-run interests of stockholders, and, therefore, they are inconsistent with expected value maximization. However, before we reject the value maximization theory of the firm on the

continued

See: William C. Symonds and Pete Engardino, "Big Trouble at Allegheny," *Business Week*, August 11, 1986, and Christopher Farrell, "Suddenly, Blue Chips are Red-hot for ESOPs," *Business Week*, March 20, 1989, 144.

theory of the firm
Recognizes expected value maximization as the primary objective of a business.

Firms exist because they are useful in the process of producing and distributing goods and services. They are basically economic entities. As such, their activities can best be analyzed in the context of an economic model.

The basic model of the business enterprise is derived from what is called the **theory of the firm**. In its earliest version, the firm was thought to have *profit maximization* as its primary goal; that is, the firm's owner-

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Managerial Application *continued*

grounds that it doesn't describe real-world behavior, we must ask if self-dealing behavior is common business practice. If employee and managerial self-dealing is typical, the value maximization theory will have little descriptive relevance. On the other hand, if such instances are relatively rare, the value maximization model can provide useful descriptive insight concerning real-world business practice.

Fortunately, the types of behavior typified by the Levine/Boesky and Allegheny International scandals are quite rare. Far from being an industry riddled with corruption, the securities business is one in which scandal occurs infrequently. Every business day on Wall Street, thousands of transactions, some involving billions of dollars, are made on the basis of a simple phone conversation. One's word is one's bond. If honesty and trust didn't pervade Wall Street, the ability of the securities business to operate would be more than hampered; it would founder. It is interesting that the Levine/Boesky relationship came to light within only eighteen months of its inception. Apparently, keeping such a lucrative and intricate scheme hidden was impossible in light of typical industry practice and regulation. Similarly, given current reporting requirements, it was impossible to keep quiet the apparent self-dealing of top executives at Allegheny International. Indeed, Buckley was forced to resign as CEO in the aftermath of the *Business Week* disclosures. Although highly regrettable and obviously costly to affected stockholders, the Levine/Boesky and Allegheny affairs were of relatively short duration and appear to be rather atypical. Neither can be regarded as examples of "business as usual."

Finally, it is interesting to note the growing trend among large companies to adopt employee stock ownership plans (ESOPs) in an effort to minimize the problems sometimes caused by a separation of management and control. Both company performance and stockholder returns seem to improve when top executives and a broad range of other employees hold a substantial equity interest in a firm. The current popularity of ESOPS, and the growing trend toward ESOP adoptions, suggests a strong and growing motive for value maximization in corporate America. Therefore, even though instances of business practice that are inconsistent with value maximization do arise from time to time, these instances are relatively rare. As a result, value maximization can be regarded as a useful description of the fundamental motivation for everyday business decision making.

expected value maximization
An emphasis on profit maximization that includes uncertainty and the time dimension.

manager was assumed to be striving to maximize the firm's short-run profits. Later, the emphasis on profits was broadened to encompass uncertainty and the time dimension. In this more complete model, the primary goal of the firm was viewed as **expected value maximization** rather than short-run profit maximization. The goal of expected value maximization is now considered the *primary* objective of business in the economic model of firm behavior.

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Defining Value

Since the basis of the economic model is maximizing the value of the firm, we should clarify the meaning of value. Actually, many concepts of value are found in economics and business—book value, market value, liquidating value, going-concern value, and so on. For our purposes, the value of the firm is defined as the present value of the firm's expected future net cash flows. If we equate cash flows to profits for simplicity, the value of the firm today—its present value—is the value of expected future profits, discounted back to the present at an appropriate interest rate.[1]

value of the firm
The present value of the firm's expected future net cash flows.

present value
The value of an expected future amount, discounted back to the present at an appropriate interest rate.

The essence of this model, which we use throughout the book, can be expressed as follows:

$$\begin{aligned}\text{Value of the Firm} &= \text{Present Value of Expected Future Profits}\\ &= \frac{\pi_1}{(1+i)^1} + \frac{\pi_2}{(1+i)^2} + \cdots + \frac{\pi_n}{(1+i)^n}\\ &= \sum_{t=1}^{n} \frac{\pi_t}{(1+i)^t}. \qquad 1.1\end{aligned}$$

Here π_1, π_2, and so forth represent the expected profits in each year, t, and i is the appropriate interest, or discount, rate. The final form for Equation 1.1 is simply a shorthand expression in which sigma (Σ) stands for "sum up" or "add together." The term

$$\sum_{t=1}^{n}$$

simply says, "Add together as t goes from 1 to n the values of the term to the right." For Equation 1.1, the process is as follows: Let $t = 1$ and find the value of the term $\pi_1/(1 + i)^1$, the present value of year 1 profit; then let $t = 2$ and calculate $\pi_2/(1 + i)^2$, the present value of year 2 profit; continue until $t = n$, the last year included in the analysis; then add up these present-value equivalents of yearly profits to find the value of the firm.

Since profits (π) are equal to total revenues (TR) minus total costs (TC), Equation 1.1 can be rewritten as:

$$\text{Value} = \sum_{t=1}^{n} \frac{TR_t - TC_t}{(1+i)^t}. \qquad 1.2$$

[1]Discounting is required because profits obtained in the future are less valuable than profits earned presently. To understand this, one needs to recognize that $1 in hand today is worth more than $1 to be received a year from now, because $1 today can be invested and, with interest, grow to a larger amount by the end of the year. If we had $1 and invested it at 10 percent interest, it would grow to $1.10 in one year. Thus, $1 is defined as the present value of $1.10 due in one year when the appropriate interest rate is 10 percent. For the reader who is unfamiliar with the concepts of present value and compound interest, we have included a detailed treatment of the subject in Appendix A.

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We can use this expanded equation to examine how the expected value maximization model relates to a firm's various functional departments and activities. The marketing department of a firm has major responsibility for sales (*TR*); the production department has a major responsibility for costs (*TC*); and the finance department has a major responsibility for acquiring capital with which to support the firm's activities and, hence, for the discount factor (*i*) in the denominator. There are many important overlaps among these functional areas. The marketing department, for example, can help reduce the costs associated with a given level of output by influencing customer order size and timing. The production department can stimulate sales by improving quality and reducing delivery lags. Still other departments—for example, accounting, personnel, transportation, and engineering—provide information and services vital to both sales growth and cost control. Thus, the determination of *TR* and *TC* is a complex task that requires recognizing the important interrelations among the various areas of firm activity. Further, all of these activities affect the firm's risks and thereby the discount rate used to determine present values. An important concept in managerial economics is that managerial decisions throughout the firm should be analyzed in terms of their effects on the various determinants of value as expressed in Equations 1.1 and 1.2.

Constraints and the Theory of the Firm

Most managerial decisions are made in light of constraints imposed by technology, resource scarcity, contractual obligations, and government restrictions. To make decisions that will maximize value, managers must consider both short- and long-run implications as well as how various external constraints affect their ability to achieve organizational objectives.

Although a tremendous variety of constraints can arise in managerial decision problems, most fall within three broad categories. These are resource constraints, output quantity or quality constraints, and legal constraints. To clarify the important role that constraints play in managerial decision making, we will briefly examine some examples of constrained decision problems.

Firms and other organizations frequently face limited availability of essential inputs, such as skilled labor, key raw materials, energy, machinery, and warehouse space. Managers also often face capital constraints that are limitations in the amount of capital resources available for a particular project or activity.

Managerial decisions can also be constrained by contractual requirements. For example, labor contracts limit flexibility in employee scheduling and job assignment, sometimes even affecting whether labor costs are fixed or variable. Constraints often require that a minimum level of output be produced to meet delivery requirements. In other instances, output must meet certain minimum quality requirements. Some com-

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mon examples of output quality constraints are nutritional requirements for feed mixtures, audience exposure requirements for marketing promotions, reliability requirements for electronic products, and requirements for minimum customer service levels.

Legal restrictions that affect both production and marketing activities can also play an important role in managerial decisions. Laws that define minimum wages, health and safety standards, pollution emission standards, fuel efficiency requirements, and fair pricing and marketing practices all limit managerial flexibility.

The role constraints play in managerial decision making makes the topic of *constrained optimization* a basic element of managerial economics. In later chapters, we will consider important economic implications of both self-imposed and societal constraints on firms. This analysis is important because both value maximization and productive and allocative efficiency in society depend on the efficient use of scarce (limited) economic resources.

Limitations of the Theory of the Firm

Some critics have questioned why the profit or wealth maximization criterion is used as a foundation for the study of firm behavior. Are not the firm's managers interested, at least to some extent, in power, prestige, leisure, employee welfare, community well-being, and society in general? Further, do managers really try to *maximize*, or do they *satisfice*—that is, do they seek *satisfactory* rather than *optimal* results? Would the manager of a firm really seek the *sharpest* needle in a haystack (maximize), or would he or she stop upon finding one sharp enough for sewing (*satisfice*)?

It is extremely difficult to determine whether managers try to maximize firm value or merely attempt to satisfy owners while pursuing other goals. How can one tell whether a community activity undertaken by a firm leads to long-run value maximization? Are high salaries and substantial perquisites really necessary to attract and retain managers who can keep the firm ahead of the competition? When a risky venture is turned down, can one say whether this reflects conservatism or inefficient risk avoidance on the part of management or whether it, in fact, reflects an appropriate decision from the standpoint of value maximization given the venture's risks compared with its potential return?

It is impossible to give definitive answers to questions like these, and this has led to the development of numerous alternative theories of firm behavior. Some of the more prominent alternatives are models in which size or growth maximization is the assumed primary objective of management, models that assume managers are most concerned with their own personal utility or welfare maximization, and models that treat the firm as a collection of individuals with widely divergent goals rather than as a single, identifiable unit.

Each of these theories, or models, of managerial behavior has added to our knowledge and understanding of the firm. Still, none can supplant

the basic microeconomic model of the firm as a basis for analyzing managerial decisions. Examining why will provide additional insight concerning the value of managerial economics for managerial decision making.

The theory of the firm states that managers maximize the value of the firm subject to constraints imposed by resource limitations, technology, and society. The theory does not explicitly recognize other goals, including the possibility that managers might take actions that would benefit parties other than stockholders—perhaps the managers themselves or society in general—but reduce stockholder wealth. Thus, the model seems to ignore the possibilities of satisficing, managerial self-dealing, and voluntary social responsibility on the part of business.

Given that firms assert the existence of multiple goals, engage in active "social responsibility" programs, and sometimes exhibit what appears to be satisficing behavior, is the economic model of the firm really adequate as a basis for our study of managerial decision making? Based on the evidence, the answer is yes.

First, research has shown that the typically vigorous competition both in product markets, where firms sell their output, and in the capital market, where they acquire the funds necessary to engage in productive enterprise, forces managers to seek value maximization in their decisions. Stockholders are, of course, interested in value maximization, because it affects their rates of return on common stock investments. Managers who pursue their own interests instead of stockholders' run the risk of being replaced. Buyout pressure from unfriendly firms ("raiders") has been considerable during recent years. Unfriendly takeovers are especially unfriendly to inefficient management, which is usually replaced. Further, recent studies of managerial compensation indicate a strong correlation between firm profits and managers' salaries. Thus, managers appear to have a strong economic incentive to pursue value maximization through their decisions.

Second, managers must consider the costs as well as the benefits of any action before they can make a reasoned decision. This applies to a decision to satisfice rather than to maximize. Before a firm can decide on a satisfactory level of performance, management must examine the costs of such an action. Would it be wise or profitable to seek out the "best" technical solution to a problem if the costs of finding this solution would greatly exceed resulting benefits? Of course not. Indeed, what often appears to be satisficing on the part of management can be interpreted as value-maximizing behavior once the costs of information gathering are considered. Similarly, short-run growth maximization strategies often can be seen as being consistent with long-run value maximization when production, distribution, or promotional advantages of large firm size are better understood.

Finally, the value maximization model provides insight into a firm's voluntary social responsibility activities, though at first glance the model may seem to preclude this possibility. The criticism that the neo-

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classical theory of the firm emphasizes profits and value maximization while ignoring the issue of social responsibility is important enough to warrant a somewhat extended discussion, and we shall return to it later in this chapter. It will prove useful, however, to examine first the concept of profits, which is central to the theory of the firm.

PROFITS

In order to understand the theory of firm behavior and the role of the firm in a free enterprise economy, one must understand the nature of profits. Indeed, profits are such a key element in the free enterprise system that it would fail to operate without profits and the profit motive. Even in planned economies, where state ownership rather than private enterprise has been typical, the profit motive is increasingly being used as a spur to efficient resource use. In China, the Soviet Union, Yugoslavia, and other countries, profit incentives for managers and workers have led to increasing product quality and cost efficiency. Thus, profits and the profit motive play a key and growing role in the efficient allocation of economic resources on a worldwide basis.

Business versus Economic Profit

The general public and the business community typically define profit using an accounting concept. Here profit is the residual of sales revenue minus the explicit (accounting) costs of doing business. It is the amount available to the equity capital or ownership position after payment for all other resources the firm uses. This definition of profit is often referred to as accounting or **business profit.**

business profit
Sales revenue minus the explicit (accounting) costs of doing business.

The economist also defines profit as the excess of revenues over the costs of doing business. To the economist, however, the inputs provided by the firm's owner(s), including entrepreneurial effort and capital, are resources that must be paid for if they are to be employed in that use rather than some other. Thus, the economist includes a normal rate of return on equity capital and an opportunity cost for the effort of the owner-entrepreneur as costs of doing business, just as the interest paid on debt and wages paid to labor are considered costs in calculating business profit. The normal rate of return on equity is the minimum return necessary to attract and retain investment for a particular use. Similarly, the opportunity cost of owner effort is determined by the value that could be received in an alternative activity. To an economist, profit is business profit minus the implicit costs of equity and other owner-provided inputs used by the firm. This profit concept is frequently referred to as **economic profit** to distinguish it from the business profit concept.

economic profit
Business profit minus the implicit costs of equity and other owner-provided inputs used by the firm.

The concepts of business profit and economic profit help sharpen our focus on the issue of why profits exist and what their role is in a free enterprise economy. The concept of economic profit recognizes a required payment for the use of owner-provided inputs. There is a normal

rate of return, or profit, for example, that is necessary for inducing individuals to invest funds in one activity rather than investing them elsewhere, or spending them for current consumption. This normal profit is simply a cost for capital; it is no different from the cost of other resources, such as labor, materials, and energy. A similar price exists for the entrepreneurial effort of a firm's owner-manager and for other resources owners bring to the firm. These opportunity costs for owner-provided inputs offer a primary explanation for the existence of business profits.

What explains the difference between the economist's concept of normal profits as a cost of equity capital and other owner-provided inputs and the actual business profits earned by firms? In equilibrium, economic profits would be zero if all firms operated in perfectly competitive markets. All firms would report business profit rates reflecting only a normal rate of return on equity investment and payment for other owner-supplied inputs. We know, however, that reported profit rates tend to vary widely among firms. Recent profit rates have ranged from very low in, for example, the agricultural equipment and savings and loan industries, to very high, such as in the pharmaceutical, office equipment, and other high-technology industries. While we can explain some of this variation in business profits as risk premiums (higher profits) necessary to compensate investors if one business is inherently riskier than another, many firms do earn significant economic profits (or experience economic losses) at any given point in time. Examining several theories used to explain the existence of economic profits will provide further insight into their critical role in a market economy and in managerial decision making.

Frictional Theory of Economic Profits. One explanation of economic profits (or losses) is the frictional theory. It states that markets often are in disequilibrium because of unanticipated changes in product demand or cost conditions. Shocks occur in the economy, producing disequilibrium conditions that lead to either positive or negative economic profits for some firms. For example, the emergence of a new generation of user-friendly computer software might lead to a marked increase in the demand for microcomputers, which could cause profits of microcomputer manufacturers to rise above the normal level for a period of time. Alternatively, a rise in the use of plastics or aluminum in automobiles might drive down the profits of steel manufacturers. Over time, barring impassable barriers to entry and exit, resources would flow into or out of the microcomputer and steel manufacturing industries, driving rates of return back to normal levels. But during interim periods, profits might be above or below normal because of frictional factors that prevent instantaneous adjustment to new market conditions.

Monopoly Theory of Economic Profits. A second explanation—the monopoly theory—is an extension of the frictional theory. It asserts that some firms, because of such factors as economies of scale, high capital

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requirements, patents, or import protection, can build monopoly positions that allow them to keep their profits above normal for extended periods. Monopoly, a most interesting topic, is discussed at length in Chapters 11, 12, and 14, where we consider its causes and consequences and how society attempts to mitigate its potential costs.

Innovation Theory of Economic Profits. A third theory of economic profits—the innovation theory—is also related to frictions. Under the innovation theory, above-normal profits can arise as a result of successful innovation. For example, the theory suggests that Xerox Corporation, which historically earned a high rate of return because it successfully developed, introduced, and marketed a superior copying device, continued to receive these supernormal returns until other firms entered the field to compete with it and drive these high profits down to a normal level. Similarly, McDonald's Corporation earned above-normal rates of return as an early innovator in the fast-food business. With increased competition from Burger King, Wendy's, and a host of national and regional competitors, however, McDonald's, like Xerox, has seen its above-normal returns decline. As in the case of frictional or disequilibrium profits, profits that are due to innovation are susceptible to the onslaught of competition from imitating competitors.

Compensatory Theory of Economic Profits. The compensatory theory of economic profits holds that above-normal rates of return may simply be a reward to firms that are extraordinarily successful in meeting customer needs, maintaining efficient operations, and so forth. For example, if firms that operate at the industry's average level of efficiency receive normal rates of return, it is reasonable that firms that operate at above-average levels of efficiency will earn above-normal rates of return. Similarly, inefficient firms can be expected to earn relatively unsatisfactory (below-normal) rates of return.

This theory also recognizes economic profit as an important reward to the entrepreneurial function of owners or managers. Every firm and product starts as an idea for better serving some established or perceived need of existing or potential customers. This need remains unmet until an individual takes the initiative to design, plan, and implement a solution. The opportunity for economic profits is an important motivation for such entrepreneurial activity.

The Role of Profits

Each of the preceding theories describes economic profits obtained for different reasons. In some cases, several might apply. To illustrate, a very efficient manufacturer may earn an above-normal rate of return in accordance with the compensatory theory, but during a strike by a competitor's employees, already above-average profits may be augmented by frictional profits. Similarly, Xerox's profit position might be partly explained by all four theories: The company certainly benefited from suc-

cessful innovation; it is well managed and has earned compensatory profits; it earned high frictional profits while 3M, Kodak, Canon, and other firms were tooling up in response to the rapid growth in demand for office copiers; and it has earned monopoly profits, because it is protected to some extent by its patents.

Economic profits play an important role in a market-based economy. Above-normal profits serve as a valuable signal that firm or industry output should be increased. Indeed, expansion by established firms or entry by new competitors often occurs quickly during periods of high profit. Just as above-normal profits provide a signal for expansion and entry, below-normal profits provide a signal for contraction and exit. Economic profits are one of the most important factors affecting the allocation of scarce economic resources. Also, above-normal profits can constitute an important reward for innovation and efficiency, just as below-normal profits can serve as a penalty for stagnation and inefficiency. Thus, profits play a critical role both in providing an incentive for innovation and productive efficiency and in allocating scarce resources.

An understanding of how profits affect business behavior provides important insight into the relationship between the firm and society. We turn now to an examination of the firm's role in society and to a further look at the social responsibility of business.

ROLE OF BUSINESS IN SOCIETY

As suggested earlier, an important element in the study of managerial economics is the interrelationship between the firm and society. Managerial economics can clarify the vital role firms play in society and point out ways of improving their benefits to society.

The evidence that business in the United States has contributed significantly to social welfare is both clear and convincing. The economy has sustained a notable and unprecedented rate of growth over many decades, and the benefits of that growth have been widely distributed. Suppliers of capital, labor, and other resources have all received substantial returns for their contributions. Consumers have benefited from both the quantity and the quality of goods and services available for consumption. Taxes on the business profits of firms, as well as on the payments made to suppliers of labor, materials, capital, and other inputs, have provided the revenues government needs to increase its service to society. All of these contributions to social welfare stem directly from the efficiency of businesses that serve the economy.

Does this mean that firms do not or should not exercise social responsibility in a broader, perhaps more philanthropic sense? Not necessarily. Firms exist by public consent to serve the needs of society. Only through the satisfactory execution of this mandate will business survive and

1.2 Managerial Application

Do Profits Serve a Social Purpose?

Corporations can be rightly criticized for toxic waste handling and disposal policies when careless dumping occurs because they have failed to install common safeguards. Similarly, a company with a policy of firing older, and higher salaried, workers can be criticized for age discrimination. However, by focusing on the higher short-term profits sometimes earned by companies with socially misguided policies, the broader and highly beneficial role of profits in the economy can be obscured.

Perhaps Karl Marx is most responsible for popularizing the view of the foundations of capitalism as being morally deficient. According to his view, profits serve no useful social purpose. Rather than reflecting superior operating performance by firms or individuals, they simply reflect the amount of resources taken out of the economic system and converted from social to private use. Although this point of view is losing credibility and support, even in Communist bloc countries, there are still those who regard profits as evil. For example, in their 1986 pastoral letter on the economy, U.S. Catholic bishops described the profit motive as a "vexing" moral problem. To be sure, this view remains controversial among Catholics and others. Still, the fact that some people regard *all* profits as immoral suggests that profits and the profit motive remain misunderstood.

It is reasonable to condemn the abuses previously cited, because they are immoral, and because they are inconsistent with our profit-based system. It is important to recognize, however, that not all profits, including above-normal or economic profits, are immoral or unwarranted. Firms cannot operate outside the law nor outside the common bounds of morality. They must operate within the bounds that society imposes. This follows from the fact that the economy is part of the larger political, economic, and moral system. Firms that needlessly pollute

continued

See: Michael Novak, "How About Obscene Losses?", Forbes, March 6, 1989, 76–77.

prosper. As the needs and social requirements placed on our economic system change, business must adapt and respond to its changing environment.

If social welfare could be measured, business firms might be expected to operate in a manner that would maximize some index of social well-being. Maximization of social welfare requires answering such impor-

Managerial Application *continued*

or discriminate in their employment practices face the very real prospect of legal sanctions leading to long-run costs that far exceed any short-run benefits from such action. Apart from the effects of regulation, market forces themselves often act to correct such abuses. For example, a company that discriminates in its hiring policies will find it difficult to attract and retain valued employees. Thus, any above-normal profits earned through such antisocial behavior tend to be fleeting.

What critics fail to realize is the important role that profits and the profit system have played in the long-term betterment of much of humankind. Before the time of Adam Smith, an 18th century Scottish political economist and philosopher, human poverty was commonplace. The wealth of nations was measured in terms of the amount of precious goods enjoyed by nobility. Smith argued that, in contrast, the wealth of nations is best measured in terms of the level of well-being enjoyed by the common worker. The fundamental characteristic of a profit-based system is that it has as its underlying objective the enhancement of the wealth of nations, not just the wealth of a few. The U.S. economy's demonstrated capacity to lift successive generations of poor immigrants out of poverty is testimony to the power of the profit motive to do good. Today, industrialists in the United States and in other countries with market-based economies continue to build factories to exploit profit-making opportunities. The millions of jobs that result create buying power necessary to fuel more factories, more jobs, and continued economic betterment. It is perhaps ironic that firms and individuals whose objective is to do well (earn profits) end up doing good (causing economic betterment) in the process. Far from being abhorrent, enlightened self-interest is the means by which all benefit.

From a social perspective, many have found most troubling what philosopher Michael Novak calls the "obscene losses" of poorly run private and state enterprises. In some countries, governments and worldwide organizations underwrite unprofitable activities that drain economies of vital economic resources. These losses are tragic in that they deprive these developing nations of the means by which they might otherwise greatly enhance the basic material well-being of the general populace. In such instances, one might reasonably argue that establishing or reenforcing the profit motive is the most effective means available for reducing the waste of economic resources and thereby increasing the economic welfare of the world's truly poor.

tant questions as: What combination of goods and services (including negative by-products, such as pollution) should be produced? How should goods be produced? And how should goods and services be distributed? These are some of the most vital questions faced in a free enterprise system, and, as such, they are important issues in managerial economics.

In a market economy, the economic system produces and allocates goods and services according to the forces of demand and supply. Firms determine what consumers desire, bid for the resources necessary to produce these products, and then make and distribute them. The suppliers of capital, labor, and raw materials must all be compensated out of the proceeds from the sale of output, and competition (bargaining) takes place among these groups. Further, each firm competes with other firms for the consumer's dollar.

Although this process of market-determined production and allocation of goods and services is for the most part highly efficient, there are potential difficulties in a totally unconstrained market economy that can prevent maximization of social welfare. Society has developed a variety of methods for alleviating these problems through the political system.

One possible difficulty with an unconstrained market economy is that certain groups could gain excessive economic power, permitting them to obtain too large a share of the value created by firms. To illustrate, the economics of producing and distributing electric power are such that only one firm can efficiently serve a given community. Further, there are no good substitutes for electric lighting. As a result, electric companies are in a position to exploit consumers; they could charge high prices and earn excessive profits. Society's solution to this potential exploitation is direct regulation. Prices charged by electric companies and other utilities are controlled and held to a level that is thought to be just sufficient to provide stockholders with a fair rate of return on their investment. The regulatory process is simple in concept; in practice it is costly, difficult to implement, and in many ways arbitrary. It is a poor substitute for competition, but sometimes it is necessary.

A second problem in a market economy occurs when because of economies of scale or other conditions, a limited number of firms serve a given market. If the firms compete with one another, no difficulty arises. However, if they conspire with one another in setting prices, they may be able to restrict output, obtain excessive profits, and thereby reduce social welfare. Antitrust laws are designed to prevent such collusion as well as the merging of competing firms when the effect of merger would be to substantially lessen competition. Like direct regulation, antitrust laws contain arbitrary elements and are costly to administer, but they too are necessary if economic justice, as defined by society, is to be served.

A third problem is that under certain conditions, workers can be exploited. As a result, laws have been developed to equalize the bargaining power of employers and workers. These labor laws require firms to submit to collective bargaining and to refrain from unfair practices. The question of whether labor's bargaining position is too strong in some instances also has been raised. For example, can powerful national unions such as the Teamsters use the threat of a strike to obtain "excessive" increases in wages, which may in turn be passed on to consumers

in the form of higher prices and thus cause inflation? Those who believe this is the case have suggested that the antitrust laws should be applied to labor unions, especially to those bargaining with numerous small employers.

A fourth problem a market economy faces is that firms can impose external costs on society through their production activities. For example, they can dump wastes into the air or water or deface the earth, as in strip mining. If a factory pollutes the air, causing people to paint their houses every three years instead of every five or to suffer lung ailments or other health impairments, the factory imposes a cost on society in general. Failure to shift these costs back onto the firm—and, ultimately, to the consumers of its output—means that the firm and its customers unfairly benefit because the firm does not pay the full costs of its activities. This results in an inefficient allocation of resources between industries and firms. Currently, much attention is being directed to the problem of internalizing social costs. Some of the practices used to internalize social costs include setting health and safety standards for products and production systems, establishing emissions limits on manufacturing processes and on products that pollute, and imposing fines on or closing firms that do not meet established standards.

All of these measures—utility regulation, antitrust laws, labor laws, and direct regulation of products and operations—are examples of actions taken by society to modify the behavior of business firms and to make this behavior more consistent with broad social goals. As we shall see, these constraints have an important bearing on the firm's operations and, hence, on managerial decision making.

What does all this mean with respect to the value maximization model of the firm? Is the model adequate for examining issues of social responsibility and for developing rules for business decisions that sufficiently reflect the role of business in society? Business firms are *primarily* economic entities and, as such, can be expected to analyze social responsibility in the context of an economic model of the firm. This is an important consideration in examining the set of inducements that can channel the efforts of business in directions that society desires. Similar considerations should also be taken into account before imposing political pressures or regulations on firms to constrain their operations. For example, from the consumer's standpoint it is desirable to pay low rates for gas, electric, and telephone services. If public pressures drive rates down too low, however, utilities' profits will fall below the level necessary to provide an adequate return to investors. Capital will not flow into the regulated industries, innovation will cease, and service will deteriorate. When such issues are considered, the economic model of the firm provides useful insights. The model emphasizes the close interrelation between the firm and society. This, in turn, indicates the importance to business of participating actively to develop and formulate its role in helping achieve society's goals.

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1.3 Managerial Application

Capitalism and Democracy

Capitalism is based on voluntary exchange between self-interested parties. Given that the exchange is voluntary, it becomes necessary that both parties perceive benefits in order for market transactions to take place. If only one party were to benefit from a given transaction, then there would be no incentive for the other party to cooperate. No voluntary transaction would take place. Thus, a self-interested capitalist must also have in mind the interest of others. In contrast, a truly selfish individual is only concerned with himself or herself, without regard for the well-being of others. As such, selfish behavior is inconsistent with the capitalistic system. Self-interested behavior leads to success under capitalism; selfish behavior does not.

Like any economic system, capitalism has far-reaching political and social consequences. Similarly, democracy has far-reaching economic consequences. What is sometimes not understood is that capitalism and democracy are mutually reenforcing. Some philosophers have gone so far as to say that capitalism and democracy are intertwined. Without capitalism, democracy is impossible. Without democracy, capitalistic systems fail. To better understand the relation between capitalism and democracy, it becomes necessary to consider the fundamentally attractive characteristics of a decentralized exchange economy.

Capitalism is socially desirable because of its decentralized and customer-oriented nature. The menu of products to be produced is derived from market price and output signals originating in free and competitive markets, not from the output schedules of a centralized planning agency. As such, production is freely directed by self-interested producers seeking to meet the demands of individual customers. Resources and products are impartially allocated through market forces. They are not allocated on the basis of favoritism due to social status or political persuasion. Any producer able to meet customer demands is allowed

continued

See. Ronald Bailey. "The Right Path." Forbes. January 23. 1989. 80–81: and Robert J. Dowling. "Communism in Turmoil." Business Week. June 5. 1989. 34–37.

Managerial Application *continued*

to compete. Similarly, through their purchase decisions, customers are able to shape the quantity and quality of products brought to market.

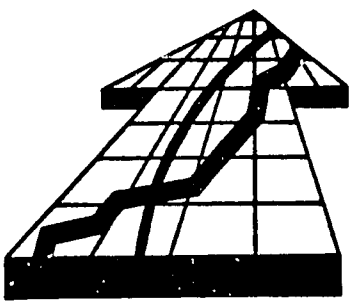
A freely competitive market gives customers a broad choice of goods and services, and gives all producers the opportunity to succeed. As such, capitalism reenforces the individual freedoms protected in a democratic society. In democracy, government does not grant individual freedom. Instead, the political power of government emanates from the people. Similarly, the flow of economic resources originates with the individual customer in a capitalistic system. It is not centrally directed by government.

Competition among producers is also a fundamentally attractive feature of the capitalistic system in that it tends to keep costs and prices as low as possible. By operating efficiently, firms are able to produce the maximum quantity and quality of goods and services possible, given scarce productive resources. Even though efficiency in resource allocation is an often recognized virtue of capitalism, the egalitarian nature of capitalistic production methods is sometimes overlooked. Mass production is, by definition, production for the masses. By its nature, capitalism seeks to satisfy a broad rather than narrow constituency. Competition by entrant and nonleading firms typically undermines the concentration of economic and political power. When economic forces tend to reduce rather than increase the number of viable competitors, antitrust or regulation policy is sometimes used to avoid potentially harmful consequences. On balance, and especially when compared to centrally planned economies, competitive processes in a capitalistic system tend to further the principles of individual freedom and self-determination. From this perspective, capitalism and democracy are seen to be mutually reenforcing. Strong market forces tend to undermine the economic favoritism that tends to occur under totalitarian systems of government. Similarly, the democratic form of government is inconsistent with concentrated economic influence and decision making.

As we enter the 1990s, communism and totalitarian forms of government are in turmoil around the globe. China has experienced violent upheaval as the country embarks on much-needed economic and political reforms. In the Soviet Union, years of economic failure have forced the government to dismantle entrenched bureaucracy and install economic incentives. Economic and political unrest is evident because rising living standards and political freedom has made life in the West the envy of the world. Given this backdrop, the future appears bright for both capitalism and democracy.

C H A P T E R • 2

Economic Optimization



optimal decision
The action that produces the result most consistent with the decision maker's objectives.

Managerial decision making is the process of determining the best possible solution to a given problem. If only one solution or action is possible, no decision problem exists. If a number of alternative courses of action are available, however, the **optimal decision** is the alternative that produces a result most consistent with the decision maker's goal. Managers use the tools of managerial economics to assist in the process of finding this best action or decision.

A major challenge associated with the decision-making process is defining alternatives in terms of the goals or objectives of the decision maker. Not only must decision makers be able to recognize the available options in any given situation, they must also be able to specify those options in terms of the appropriate decision variables and relevant costs and benefits. This delineation of available alternatives, often the most difficult facet of the decision-making process, is enhanced through application of the principles of managerial economics.

Analyzing and evaluating the alternatives available in a decision situation are additional requirements for decision making. Here the concepts and methodologies of economic analysis are applied to the set of feasible alternatives to aid in selecting the optimal course of action given the decision maker's objective.

In this chapter we introduce a number of basic economic concepts and fundamental principles of economic analysis. These fundamental relations are essential to our understanding of managerial economics. In addition to providing an introduction to the tools and techniques of optimization, the material provides further insight into the theory of the firm and the complexities of goal-oriented managerial activities.

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MAXIMIZING THE VALUE OF THE FIRM

In managerial economics the primary objective of management is assumed to be maximization of the firm's value. This objective, which was introduced in Chapter 1, is expressed in Equation 2.1:

$$\text{Value} = \sum_{t=1}^{n} \frac{\text{Profit}_t}{(1+i)^t} = \sum_{t=1}^{n} \frac{\text{Total Revenue}_t - \text{Total Cost}_t}{(1+i)^t}. \qquad 2.1$$

Maximizing Equation 2.1 is a complex task, involving the determinants of revenues, costs, and discount rates in each future year of some unspecified time horizon. Revenues, costs, and discount rates are interrelated, complicating the problem even more. A closer inspection of the associations in Equation 2.1 should help clarify both the concept and the complexities.

A firm's total revenues are directly determined by the quantity of products sold and the prices received. This is nothing more than a recognition that total revenue (TR) is the product of price (P) times quantity (Q); that is, $TR = P \times Q$. For managerial decision making, the important considerations relate to factors that affect prices and quantities and to the interrelations among them. These factors include the choice of products the firm designs, manufactures, and sells; the advertising strategies it employs; the pricing policy it establishes; the general state of the economy; and the nature of the competition it faces in the marketplace. In short, the revenue relation encompasses both demand and supply considerations.

Cost relations involved in producing a firm's products are similarly complex. An analysis of costs requires examination of alternative production systems, technological options, input possibilities, and so on. The prices of factors of production play a primary role in cost determination, and thus factor supply considerations are important.

Finally, there is the relation between the discount rate and the company's product mix, physical assets, and financial structure. These factors affect the cost and availability of financial resources for the firm and ultimately determine the discount rate used by investors to establish a value for the firm.

To evaluate the choices available to management and to determine the optimal course of action, marketing, production, and financial decisions—as well as decisions related to personnel, product distribution, and so on—must be combined into an integrated system, one that shows how any action affects all parts of the organization. The theory of the firm provides a basis for this integration, whereas the principles of economic analysis enable one to analyze the important interrelations.

The complexity involved in integrated decision analysis typically limits its use to major planning decisions. For many day-to-day operating decisions, much less complicated partial optimization techniques are employed. Partial optimization concentrates on more limited objectives within the firm's various operating departments. For example, the marketing department is usually required to determine price and advertising

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policies that will achieve a given sales goal, given the firm's product line and constraints on marketing expenditures. The production department is expected to minimize the cost of producing a specified quantity of output of a stated quality level. Here again, the fundamentals of economic analysis provide the basis for optimal managerial decisions.

The decision process, regardless of whether it is related to fully integrated or to partial optimization problems, takes place in two steps. First, economic relations must be expressed in a form suitable for analysis. Generally, this means expressing the problem in analytical terms. Second, various techniques are applied to evaluate alternatives and determine the optimal solution to the problem at hand. In the material that follows, we first introduce a number of concepts useful for expressing decision problems in an economic framework. Then, several economic relations frequently used to evaluate decision alternatives are examined.

METHODS OF EXPRESSING ECONOMIC RELATIONS

Equations, tables in which data are enumerated, and graphs in which data are plotted are all frequently used to express economic relations. A table or graph is sufficient for many decision problems. When the problem is complex, however, equations are useful because the powerful tools of mathematical analysis and computer simulation may be used.

Functional Relations: Equations

Perhaps the easiest way to examine various means of expressing economic relations and, at the same time, gain insight into the economics of optimization is to consider several functional relations that play key roles in the basic valuation model. Consider first the relation between output, Q, and total revenue, *TR*. Using functional notation, we can express the relation in general terms with the following **equation**:

equation
An explicit statement of the relation between dependent and independent variables.

$$TR = f(Q). \qquad 2.2$$

Equation 2.2 is read, "Total revenue is a function of output." The value of the dependent variable—total revenue—is determined by the independent variable—output. In an equation such as this one, the variable to the left of the equal sign is called the *dependent variable*, as its value *depends* on the size of the variable or variables to the right of the equal sign. The variables on the right-hand side of the equal sign are called *independent variables*, because their values are assumed to be determined outside, or *independently*, of the model expressed in the equation.

Equation 2.2 does not indicate the specific relation between output and total revenue; it merely states that some relation exists. A more specific expression is provided by the equation:

$$TR = P \times Q, \qquad 2.3$$

2.1 Managerial Application

Entrepreneurship: Creating the Spark

Sometimes it is easy to overlook the fact that firms are made up of people. Indeed, firms often are started by a single individual with no more than an idea for a better product or service—the entrepreneur. Taken from the Old French word *entreprendre*, meaning "to undertake," the term *entrepreneur* refers to one who organizes, operates, and assumes the risk of a business venture.

Until recently, there appeared to be little academic or public policy interest in this key function or in the entrepreneur's role in the economy's overall performance. The entrepreneur's skill was simply considered part of the labor input in production. Now, we are beginning to better understand the critical role of the entrepreneur, partly because entrepreneurship has become a formal field of study at many leading business schools.

As a catalyst, the entrepreneur brings economic resources together in the risky attempt to meet consumers' needs and desires. This process often leads to failure—in fact, the odds against success are long. Seldom do more than one in ten start-up businesses enjoy even minimal economic success. Even those select few that see their product or service reach a national market find stable long-term success elusive. Once established, they in turn become targets for future entrepreneurs.

Given the long odds against success, you might wonder why so many willingly embark on ventures (adventures?) that appear doomed to fail. One reason is that one-in-a-million chance of developing "the" truly revolutionary product that will fundamentally change how people live, work, or play. Chester Carlson, the founder of xerography,

continued

See: Zachary Schiller, "Doing Well by Doing Good," Business Week, December 5, 1988, 53–57; and Roger Ricklefs, "Schools Increase Courses to Help Entrepreneurs," *The Wall Street Journal*, February 6, 1989, B1–B2.

where P represents the price at which each unit Q is sold. Here, the manner in which the value of the dependent variable is related to the independent variable is more precisely specified. Total revenue is equal to price times the quantity of output sold. If, for example, price is constant at $1.50 regardless of the quantity sold, then the relation between quantity sold and total revenue is precisely stated by the function:

$$TR = \$1.50 \times Q. \qquad 2.4$$

Managerial Application *continued*

made hundreds of millions of dollars following the introduction and rapid acceptance of the Xerox machine. While the opportunity for such wealth is surely an important motivation, the impact and recognition that come with creating a truly unique good or service often are equally important to entrepreneurs. Many simply want to "make a difference."

What about the entrepreneur's role from the standpoint of society in general? We all benefit from the innovative products, services, delivery systems, and so on that result from entrepreneurs' efforts. Consider the benefits resulting from the efforts of such entrepreneurs as Thomas Edison, Chester Carlson, and Steve Jobs. Their fame and fortune only partly reflect the benefits we enjoy from phonography, electric lighting, photography, xerography, the "graphic desktop," and "user-friendly" computers. Like all entrepreneurs, they have played an important role in determining the types of goods that become available in the marketplace and when they become available.

In addition, entrepreneurship plays an important role in what economist Joseph Schumpeter called the "creative destruction of capitalism." This is the process of replacing the old with the new, the inefficient with the efficient, and low quality with a superior product. An important recent role of the entrepreneur has been what is called *intrapreneurship*, in which the entrepreneur works within the overall framework of an existing organization. Many firms, such as the 3M Company, have come to recognize the importance of the intrapreneur. 3M's encouragement of its researchers to explore new ideas resulted in Art Fry's brainchild, Post-It Notes. Thus, entrepreneurship plays a key role in both the initial development and the ongoing revitalization of firms and the economic system.

In understanding the role of profits in a market-based economy, it is important to recognize the part the entrepreneur plays. The opportunity to earn a normal business profit plus an attractive salary or wage is the realistic objective of every entrepreneur. The hope of above-normal economic profits is the dream that spurs this "bottom-up" method of economic development.

Functional Relations: Tables and Graphs

In addition to equations, tables and graphs are often used to express economic relations. The data in Table 2.1, for example, express exactly the same functional relation specified by Equation 2.4, and this same function is graphically illustrated in Figure 2.1. All three methods of expressing relations play an important role in presenting and analyzing data for managerial decision making.

3.1 Managerial Application

Demand and Supply in the Soviet Economy

Perhaps the most important characteristic of a market-based economy is the decentralization of production and operating decisions. No centralized government agency or industry trade association makes decisions about what types of products should be produced or the quantity or quality of output. Instead, these decisions are made by individual firms based on their perceptions of consumer preferences and market opportunities. The price consumers are willing to pay for established goods and services is a signal to which firms respond through their production and operating decisions. Firms that are able to offer goods and services in a relatively attractive fashion in terms of price, quantity, and quality tend to grow and prosper. Similarly, firms that successfully anticipate changes in consumer preferences reap substantial economic rewards. Those that do not tend to fall by the wayside. In other words, a market-based economy relies only on the profit motive as a means for assuring the production of the types and quantities of goods and services that consumers want and need (demand). As economist Adam Smith said more than 200 years ago, by acting in their own self-interests, individuals are moved as if by an "invisible hand" to promote the common welfare.

At first, a market-based economy might appear to be a risky and costly means for organizing economic activity. When compared to the cost and risk of centralized economic planning, however, the virtues of the market system become readily apparent. In recognition of these advantages, the Soviet Union has recently made substantial efforts to modify its form of state planning to include some of the features of a market system.

continued

See: Peter Galuszka, "The Paradox of *Perestroika*: A Raging Black Market," *Business Week*, June 5, 1989, 66–70.

mental relations are essentially the same. This means that the principles of managerial economics, and particularly the principles of optimal resource use, provide a basis for understanding demand by both firms and consumers.

THE MARKET DEMAND FUNCTION

demand function
The relation between demand and all factors that influence its level.

The market **demand function** for a product is a statement of the relation between the aggregate quantity demanded and *all* factors that affect this quantity. Written in general functional form, the demand function may be expressed as:

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Managerial Application *continued*

The Soviet economy is apparently in a grave state because oil revenues from the 1970s and early 1980s were used primarily to fund purchases of grain and other consumer products rather than to finance factories, plant and equipment, and other productive investments. As a result, the country appears to have few economic resources to fund the retooling of its factories that is necessary before high-quality consumer products can be made widely available.

According to Leonid Abalkin, principal economic advisor to Soviet prime minister Mikhail Gorbachev, high rates of economic growth have often been achieved in the Soviet Union by making larger volumes of products that no one wanted to purchase. He called this "working for the storehouse." Of course, the value of such economic growth is questionable. A significant challenge for Soviet leaders is to create means by which the preferences of Soviet consumers for high-quality products more readily influence production and operating decisions.

As a first step in building their economic capabilities, the Soviets plan on a more extensive use of the pricing system. In an effort to limit demand and expand supplies, prices will be allowed to rise for such scarce and highly valued commodities as meat and dairy products. The intent is to establish for Soviet consumers the links between greater demand, higher prices, and more plentiful supply. On the supply side, the economic returns to Soviet enterprises and their employees are to be more closely linked to performance measured in terms of satisfying customer demand for quality products and cost efficiency. In fact, Abalkin has even argued that Soviet enterprises must face the very real threat of bankruptcy as an incentive to operate more efficiently

Of course, the human disruption caused by bankruptcy, along with other economic costs, is often substantial. Economic losses associated with lost production because of work stoppages, retraining and relocation costs for managers and other workers, and expenses associated with factory retooling are obvious social costs incurred when bankruptcy takes place. What the Soviets have come to realize, however, is that the economic costs of bankruptcy are less than the costs of production errors made when the forces of demand and supply are ignored.

$$\text{Quantity of Product } X \text{ Demanded} = Q_X = f(\text{Price of } X, \text{Prices of Related Goods, Expectations of Price Changes, Consumer Incomes, Tastes and Preferences, Advertising Expenditures, and So On}). \quad 3.1$$

The generalized demand function expressed in Equation 3.1 lists variables that influence demand. For use in managerial decision making, the demand function must be made explicit. That is, the relation between quantity and each of the demand-determining variables must be clearly and explicitly specified. To illustrate what is involved, assume that we

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LECTURE #1: OVERVIEW & FUNDAMENTALS

- A unifying problem in micro-economics: How to allocate scarce resources among competing uses so as to maximize "value."
- Mathematical statement:

$$\underset{x_1\ x_2}{\text{maximize}}\ f(x_1\ x_2) = z$$

$$\text{s.t. } \bar{P}_1 x_1 + \bar{P}_2 x_2 = \bar{b}$$

where $x_1\ x_2$ = the choice variables

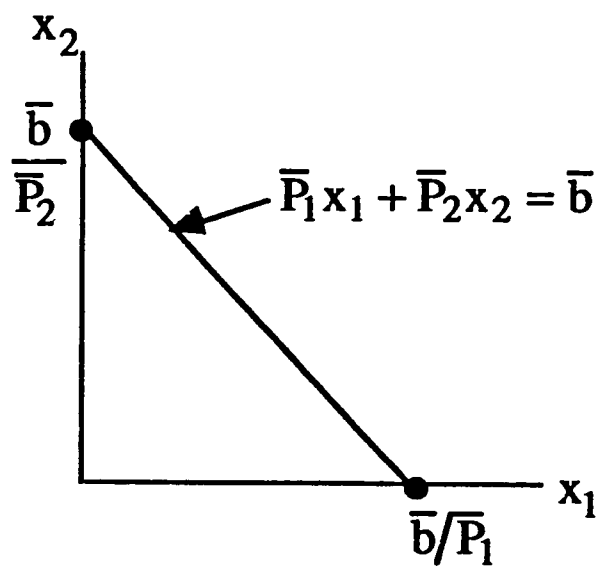
$f(\cdot)$ = the value function

$\bar{b}$ = the amount of the scarce resource available

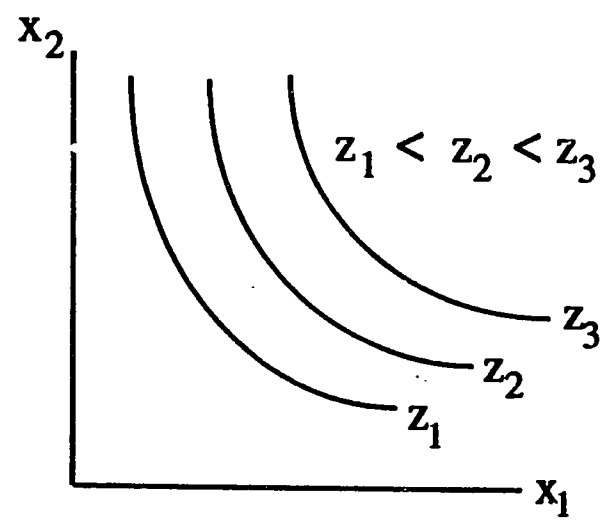
$\bar{P}_1, \bar{P}_2$ = units of the scarce resource required per unit of x_1 and x_2

Geometric Solution

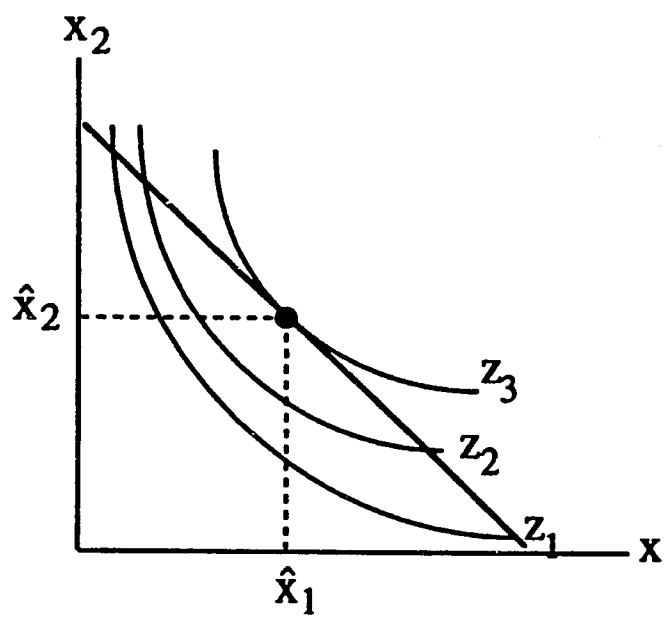
Constraint



Contours of the Value Function



The Maximizing Solution: Move to the point on the constraint which lies on the highest contour of the value function:



N.B.: Constraint <u>tangent</u> to the highest contour.

Mathematical aside for those with calculus background:

Solutions for $\hat{x}_1$ and $\hat{x}_2$ for:

$$\max_{x_1 x_2} \; L(x_1 x_2) = f(x_1 x_2) + \lambda\left[\bar{P}_1 x_1 + \bar{P}_2 x_2 - \bar{b}\right]$$

are identical to constrained maximum problem. Thus, $\{x_1 \; x_2\}$ which satisfy:

(1) $\dfrac{\partial L}{\partial x_1} = \dfrac{\partial f}{\partial x_1} + \lambda \bar{P}_1 = 0$ (2) $\dfrac{\partial L}{\partial x_2} = \dfrac{\partial f}{\partial x_2} + \lambda \bar{P}_2 = 0$ (3) $\dfrac{\partial L}{\partial \lambda} = \bar{P}_1 x_1 + \bar{P}_2 x_2 - \bar{b} = 0$

also satisfy max $f(x_1 \; x_2)$ s.t. $\bar{P}_1 x_1 + \bar{P}_2 x_2 = \bar{b}$ (due to LaGrange)

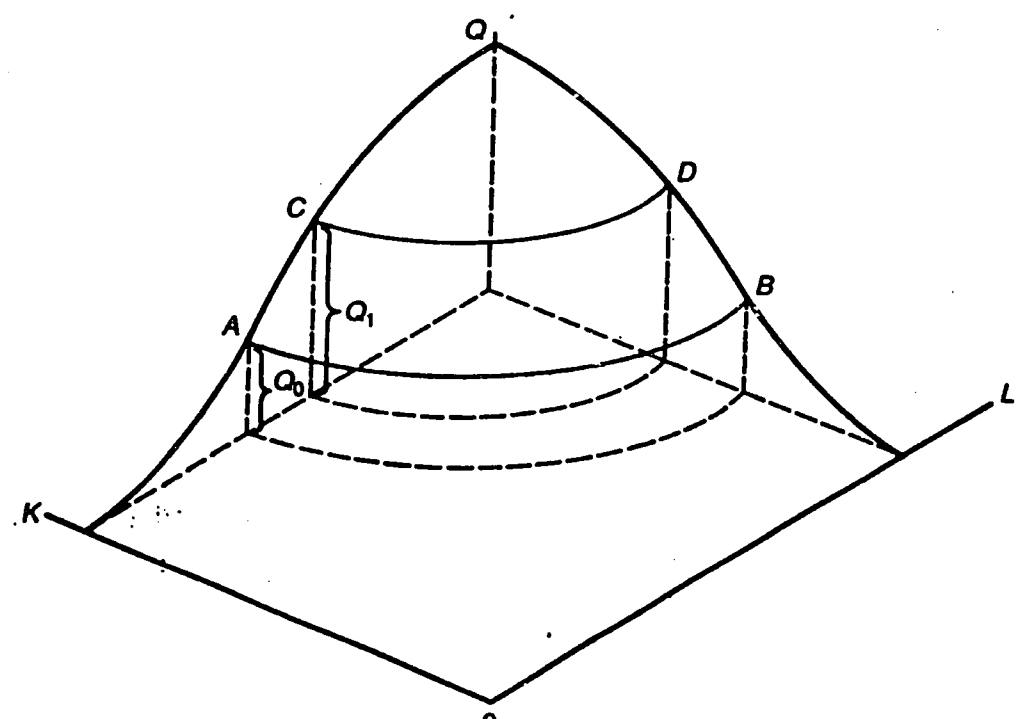
Note: $\dfrac{(1)}{(2)} \rightarrow \dfrac{f_1}{f_2} = \dfrac{\bar{P}_1}{\bar{P}_2} \rightarrow$ tangency of constraint and contour of value function!

Two Fundamental Applications

A) <u>Production</u>: What mix of inputs maximizes output, subject to a constraint on the amount of money to be spent producing the output?

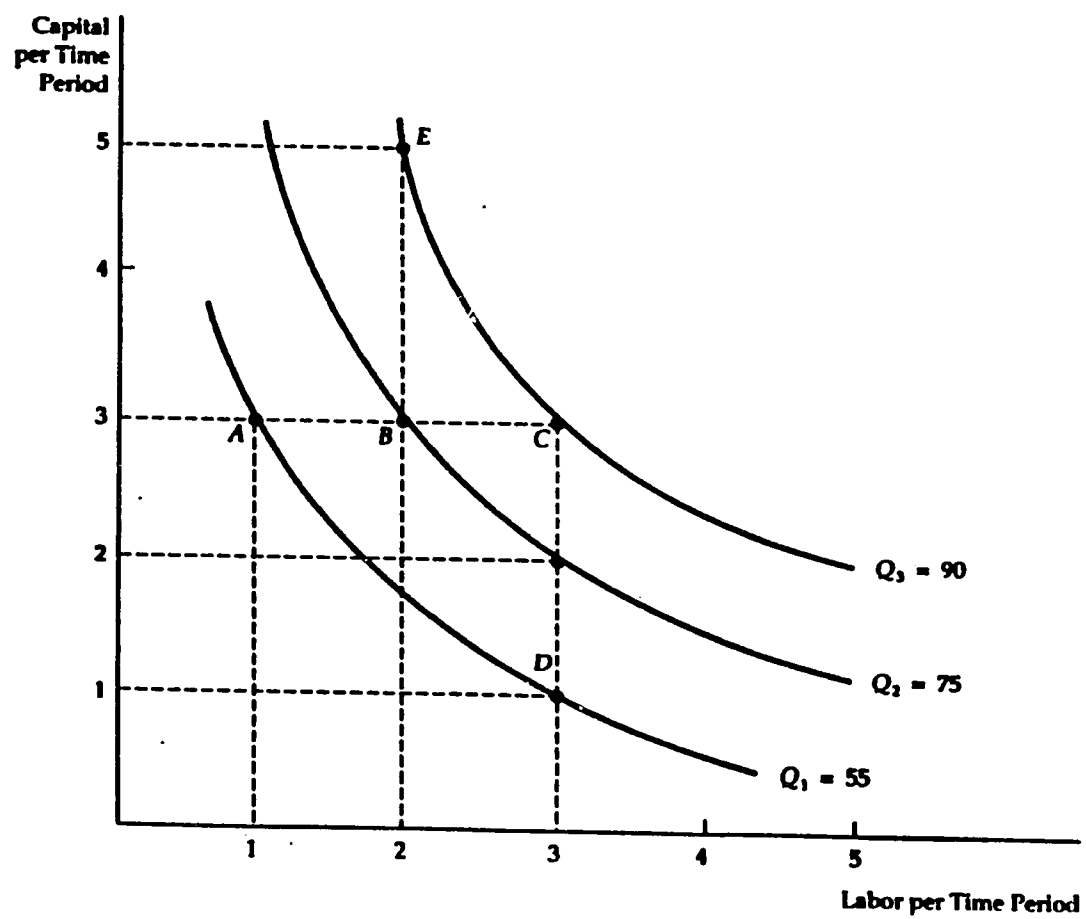
- Here, x_1 and x_2 are amounts of resources 1 and 2 to utilize in the production of the output; for example,

$$Q(x_1\ x_2) = \text{output} = Q(\underline{L}\text{abor}, \underline{K}\text{apital})$$



Production with Two Variable Inputs

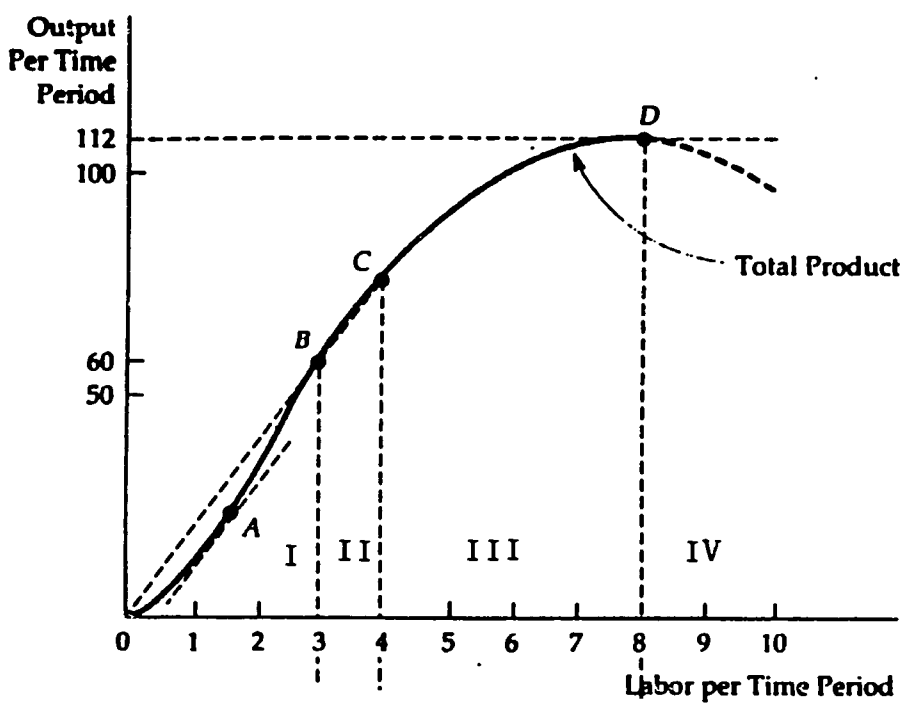
Production isoquants show the various combination of inputs necessary for the firm to produce a given output. A set of isoquants, or isoquant map, describes the firm's production function. Output increases as one moves from isoquant Q_1 (55 units) to isoquant Q_2 (75 units) and to isoquant Q_3 (90 units).



Solution as on page 3: tangency of constraint and a contour.

Important Question: Why contours (called "isoquants") shaped the way they are?

Answer: Principle of Diminishing Marginal Productivity.



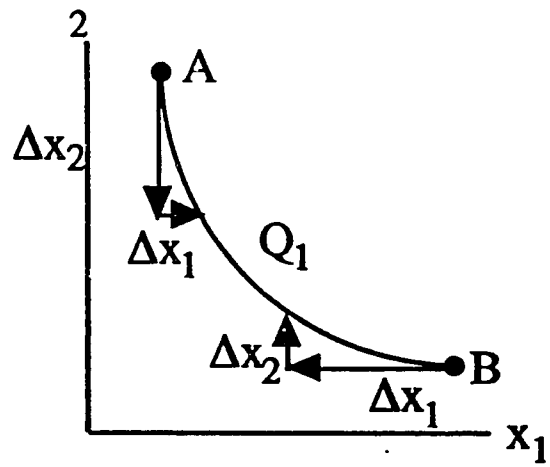
I: Increasing marginal productivity

II: Constant marginal productivity

III: Diminishing marginal productivity

IV: Falling total productivity

Then it follows that the shape is as drawn:

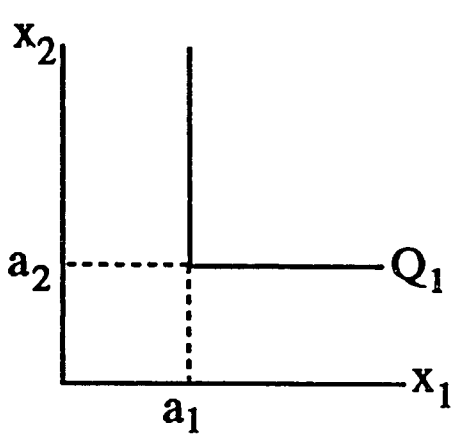


Point A: A little increase in x_1 will offset a large decrease in x_2

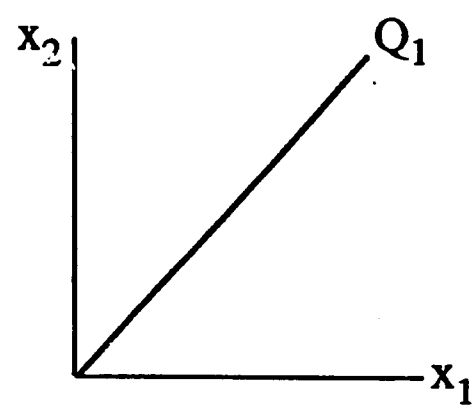
Point B: Vice versa

<u>Other Shapes</u>?

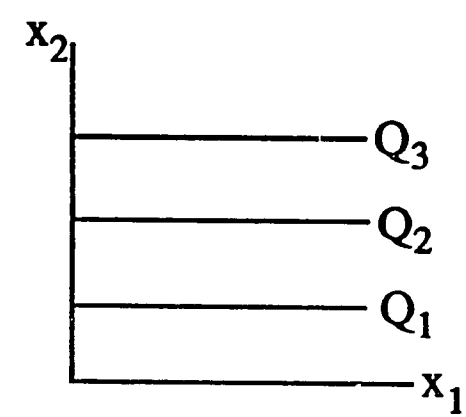
Fixed proportions:



One productive input, one contraproductive input:



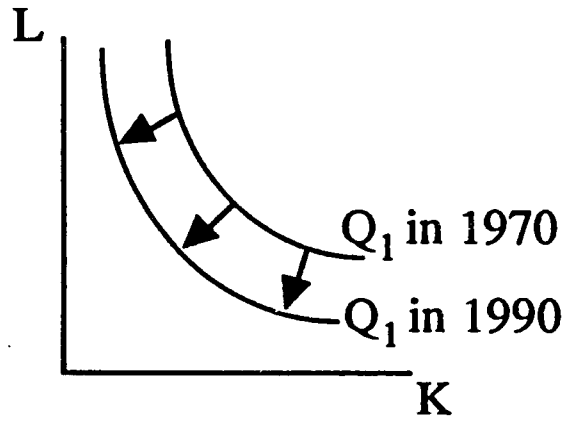
One productive input, one non-productive input:



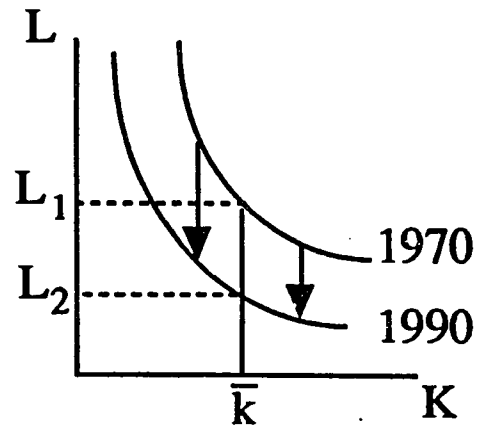
Question: Do contours shift over time? If so, in what direction?

Suppose Q(K,L):

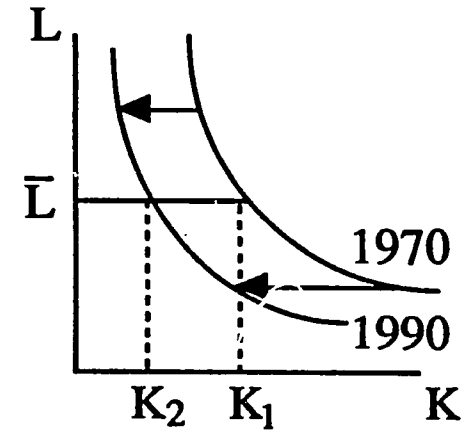
Neutral Technical Change



Labor Saving Technical Change

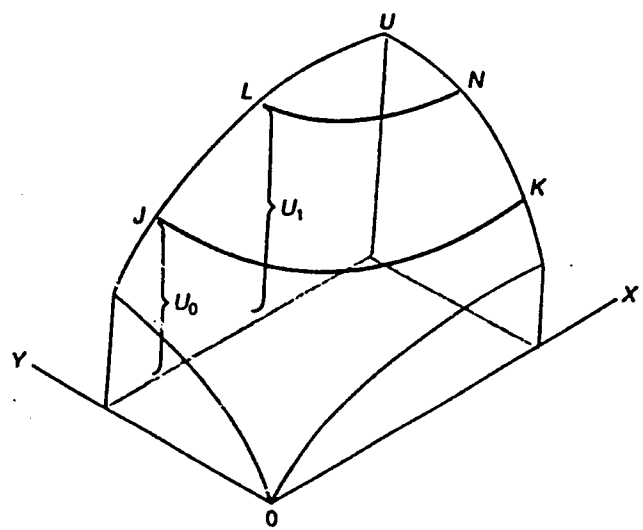


Capital Saving Technical Change



B) Consumer Choice: What mix of purchases by a consumer maximizes satisfaction, subject to a constraint on the amount to be spent?

A Three-Dimensional Utility Surface



How construct contours, called indifference curves?

Preference tests between mixes:

$\{Q_1,R_1\}\ P\{Q_2,R_2\}$ or

$\{Q_1,R_1\}\ I\{Q_2,R_2\}$

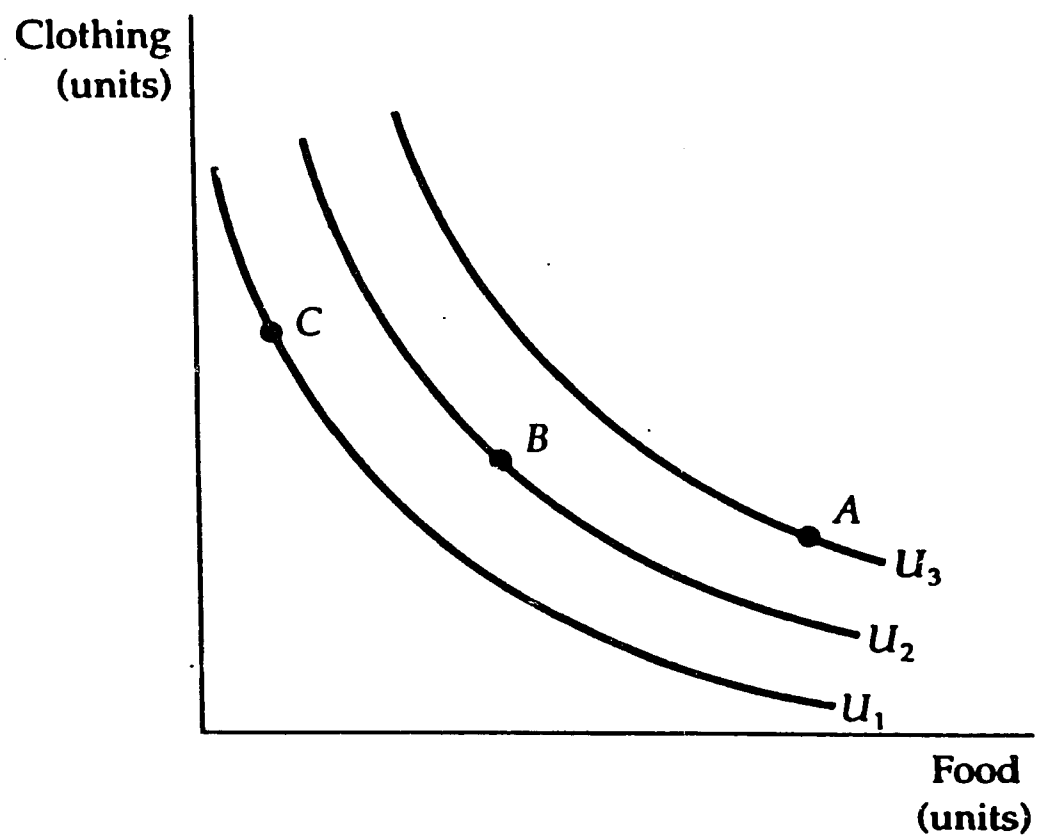
Do for all mixes, plot I pairs on same indifference curves.

Budget constraint $\bar{P}_1Q + \bar{P}_2R = \bar{b}$, with $\{P_1\ P_2\}$ prices, $\bar{b}$ = amount to be spent.

52.

An Indifference Map

An indifference map is a set of indifference curves that describes a person's preferences. Market basket A on the highest of the three indifference curves is preferred to market basket B, which in turn is preferred to market basket C on the lowest indifference curve.

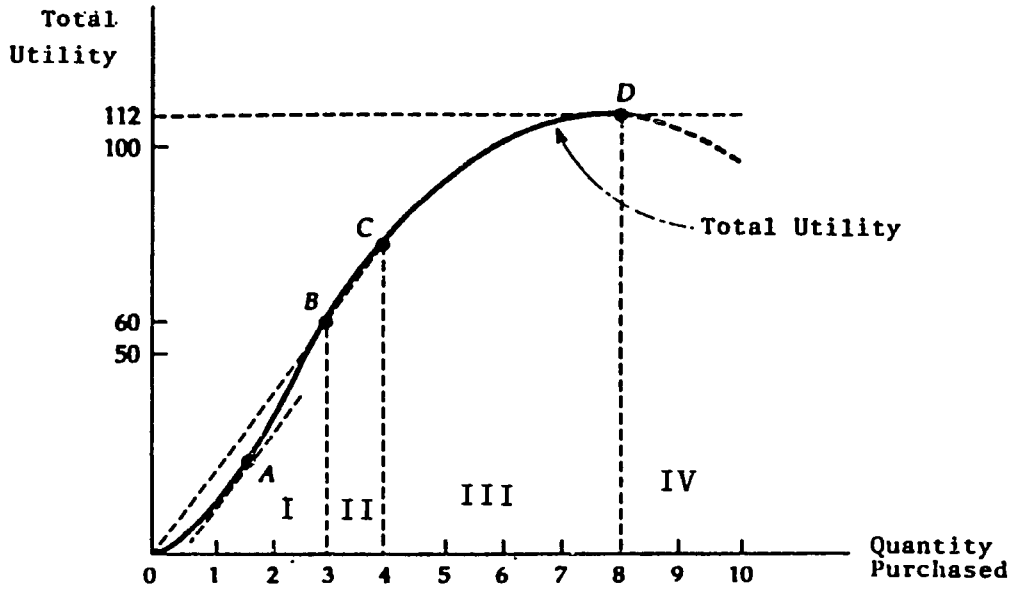


52

Solution as before: tangency of budget constraint and indifference curve.

Important Question: Why contours (called indifference curves) shaped the way they are?

Answer: Principle of Diminishing Marginal Utility.



I: Increasing marginal utility

II: Constant marginal utility

III: Diminishing marginal utility

IV: Absolutely decreasing utility

<u>Scale Problems</u>: Both the above problems involve what mix of inputs or products maximizes output or satisfaction, subject to a side constraint on scarce resource use. But what determines the side constraint?

<u>Production Problem</u>:

Given: (1) A least cost function C(Q)

(2) A revenue function R(Q)

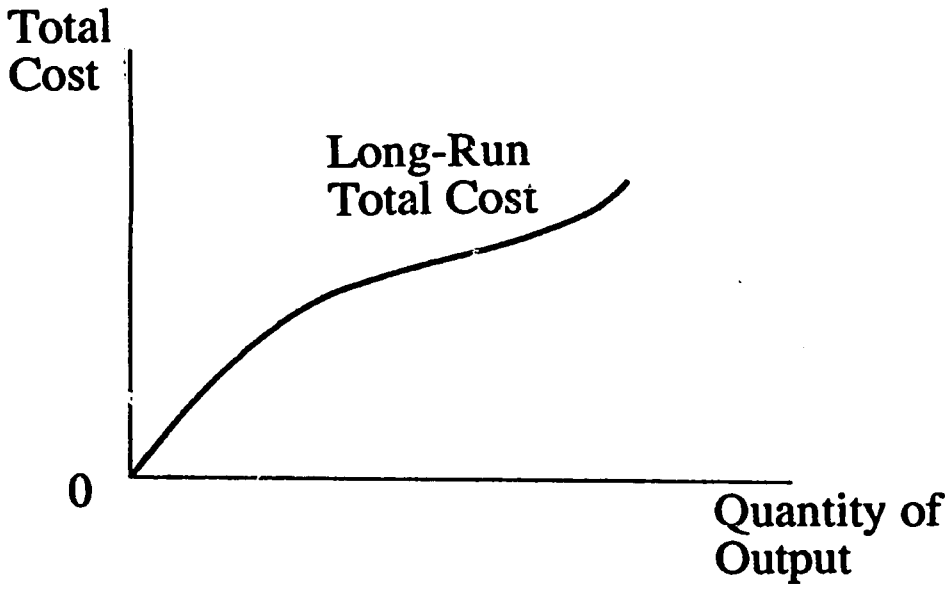
To Find: The optimal level of production.

1. What does C(Q) look like?

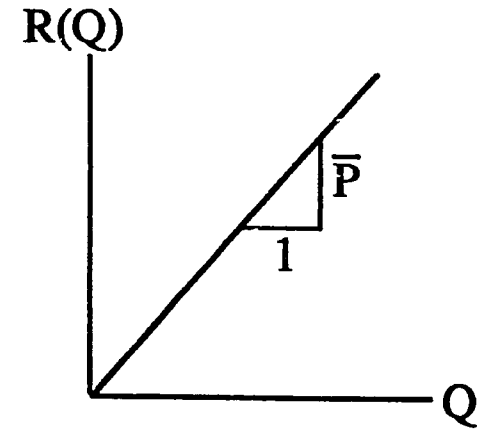
2. What does R(Q) look like?

3. What is the meaning of the word "optimal."

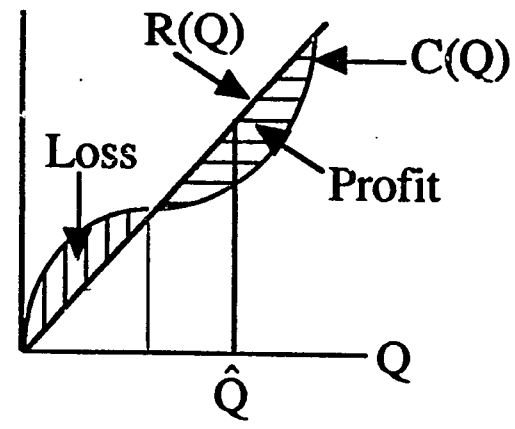
(1) The Cost Function



(2) A Revenue Function



(3) "Optimal" means the Q which maximizes profit



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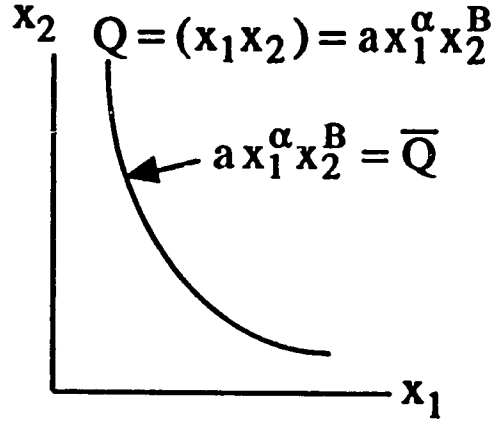
Applications

1) "Cobb-Douglas" Production Functions



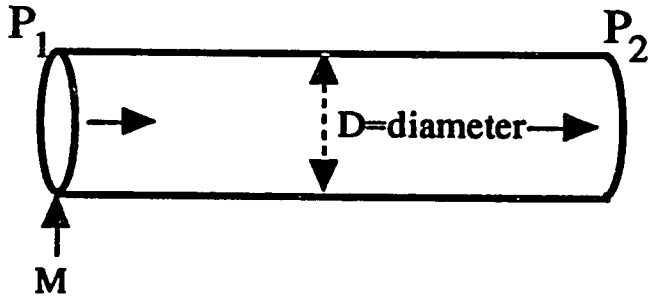
a = parameter

α,B = productivity coefficients (α,B ≥ 0)

57.

<u>Problem</u>: How design a pipeline system to minimize the cost of transporting a fixed amount of product "$\bar{Q}$" between A and B?

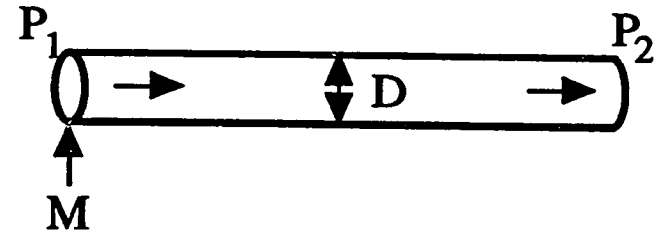
Option 1: Big Pipe, Little Pump



Large diameter pipe "D"

Low compression ratio $\frac{P_1}{P_2} = R$

Option 2: Small pipe, big pump



Small diameter pipe "D"

High compression ratio $\frac{P_1}{P_2} = R$

58.

The relationship between Q, D and R can be written

(1) $Q = K_1, D^{1.66} (1 - 1/R^2)^{.5}$, a "Cobb-Douglas" form.

(2) Diameter "D" is related to pipeline cost by the function $C_1(D,R)$.

(3) The compression ratio "R" is related to motor and pump cost by the function $C_2(R)$.

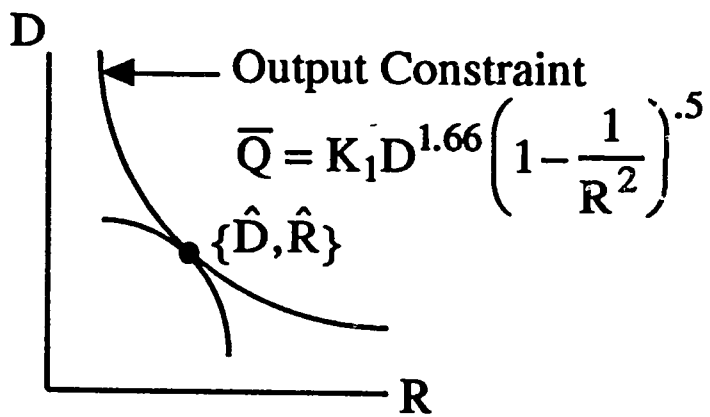
Then the problem is:

$$\min_{D,R} C_1(D,R) + C_2(R) = C, \text{ s.t. } \bar{Q} = K_1, D^{1.66} (1 - 1/R^2)^{.5}$$

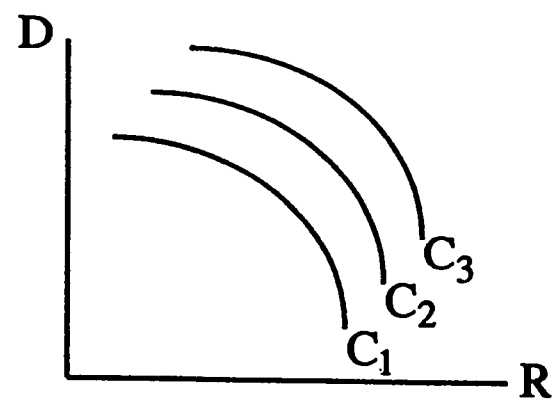
59.

<u>A slightly different problem</u>:

The Output Constraint



The Cost Surface



The characteristics of the solution are the same as before:

$\{\hat{D}, \hat{R}\}$ at point of tangency

60

An Agricultural Application

What mix of pounds of phosphate "P" and Nitrogen "N" fertilizer maximizes the corn yield "y" per acre, given will spend no more than $30/acre?

$$Y = C_1 = .3N - .4P + 6.4\sqrt{N} + 8.5\sqrt{P}$$

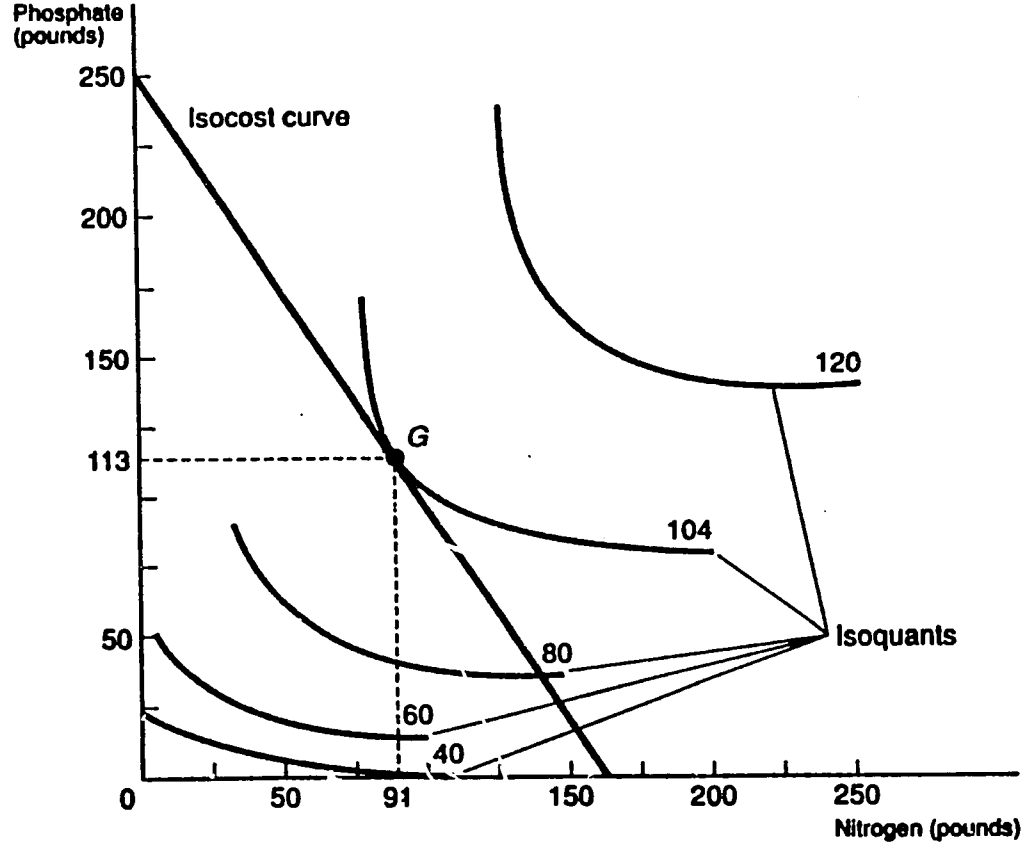
Phosphate costs 12¢/pound, nitrogen costs 18¢/pound

$$\max Y, \text{ s.t. } .12\,P + .18\,N = \$30$$

6

Optimal Combination of Nitrogen and Phosphate Fertilizers

Based on these actual isoquants for Iowa corn, the optimal point is G, where about 91 pounds of nitrogen and about 113 pounds of phosphate are used per acre.



62.

Applications of Fixed Proportions Production Functions

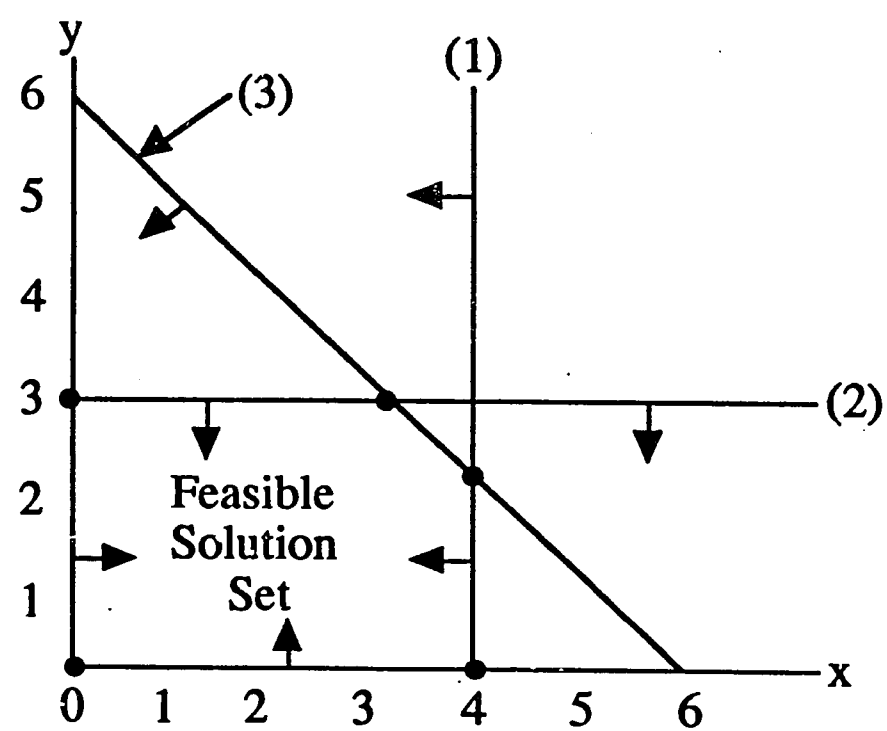
Two Technologies for Making a Product

	X	Y	Raw Material Available
Units of Raw Material #1/unit	1	0	400
Units of Raw Material #2/unit	0	1	300
Units of Raw Material #3/unit	1	1	600
Profit/Unit	2	5	

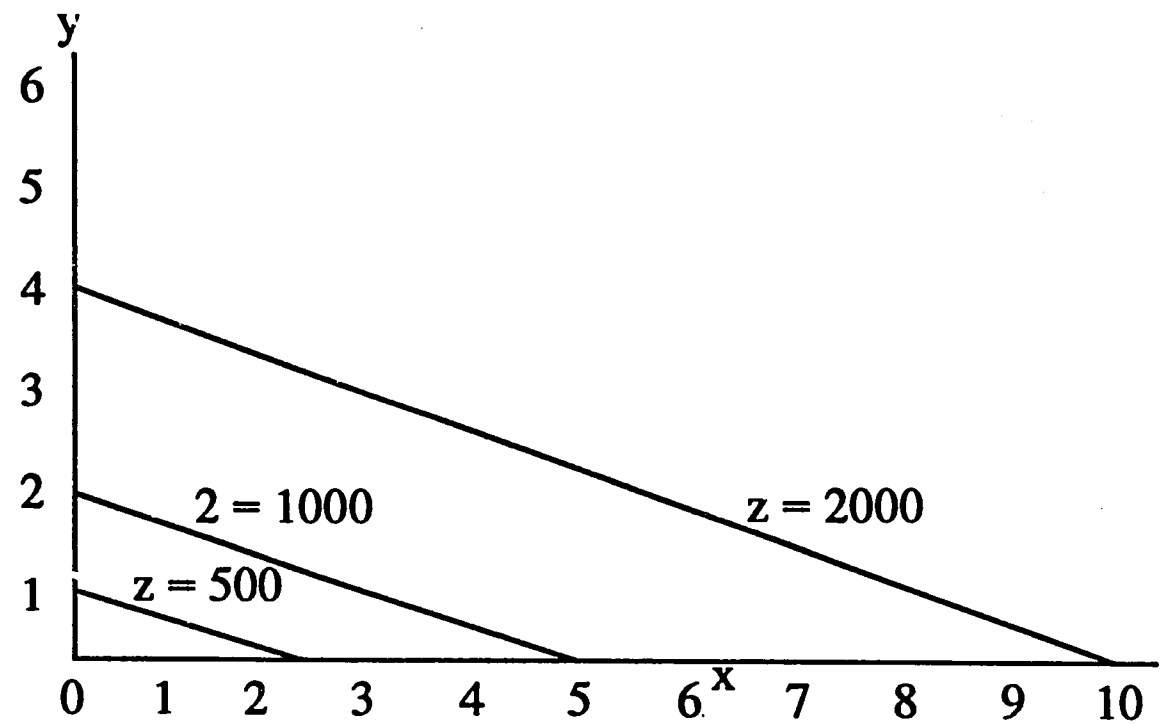
Question: What mix of technologies maximizes profit, subject to materials availability?

63.

$$
\begin{array}{llll}
\max & & 2x + 5y & = z \\
\text{s.t.} & (1) & x & \leq 400 \\
 & (2) & y & \leq 300 \\
 & (3) & x + y & \leq 600 \\
 & & & x,y \geq 0
\end{array}
$$

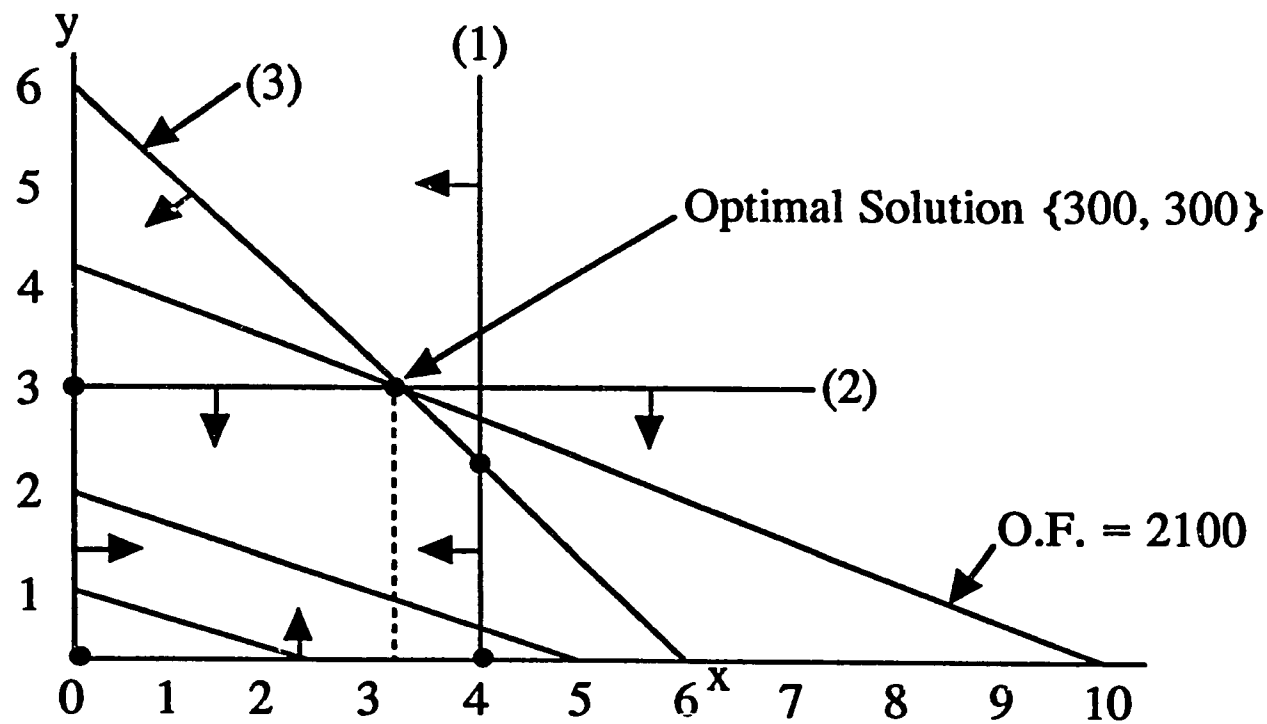


Contours of the Profit Function



- Problem is to find the point in the feasible solution set which lies on the highest contour.
- Solution must lie at one of the corners; L.P. finds the corner quickly by search.

55



The optimal solution lies at the "corner"

x = y = 300, optimal profit = $2,100

MARKETING MODULE

March 19-21, 1992
Prague, Czechoslovakia

Session	Day 1 - March 19	Day 2 - March 20	Day 3 - March 21
8:30-10:00	Marketing Orientations: The Roles of Customers & Competitors	Understanding Buyers Decision Processes	Developing Marketing Organizations & Strategies
Break			
10:15-11:45	Understanding the Customer Through Market Segmentation & Positioning	Marketing Planning Tools	Components of the Marketing Plan
Lunch			
1:30-3:00	Market Data Availability	Marketing Mix Decisions: Product Development	
Break			
3:15-4:45	Market Research & Marketing Information	Marketing Mix Decisions: Pricing	

MARKETING MODULE
PRAGUE, CZECHOSLOVAKIA

Marketing orientations: the roles of customers and competitors
- marketing myopia and the mission of the firm
- developing a customer centered philosophy
- defining strategic marketing

Understanding the customer through market segmentation and positioning
- marketing opportunity assessment
- identifying market segments
- approaches to segmenting industrial and consumer markets
- positioning approaches

Market data availability
- module developed in local country

Marketing research and marketing information
- formulating marketing research to help make marketing decisions
- exploratory research decisions - focused group interviews
- survey techniques and measuring satisfaction

Understanding buyers decision processes
- customer expectations and satisfaction
- opinion formation and change
- relating buyer behavior to company sales strategies

Marketing planning tools
- portfolio techniques
- product life cycles
- marketing approaches at different stages in the life cycle

Marketing mix decisions: product development
- existing v. new products/existing v. new market segments
    - penetration approaches
    - market development
    - product development
    - diversification
- product development system

Marketing mix decisions: pricing
- pricing objectives
    - profit oriented
    - growth and share oriented
- pricing approaches
    - cost plus pricing
    - return on investment pricing
    - competitor pricing
    - customer pricing
- pricing and value added elements of the marketing mix

Marketing Management & Strategy

MARKETING MODULE
MUCIA: MANAGEMENT TRAINING & ECONOMICS EDUCATION

Developed By:

Gilbert D. Harrell, Ph.D.
Professor of Marketing
Michigan State University

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Marketing Management Overview | Discussion Notes

MARKETING MODULE OVERVIEW

PROVIDE FUNDAMENTALS OF MARKETING MANAGEMENT FOR PRACTICAL APPLICATIONS TO BUSINESS PROBLEMS

REQUIRES

- UNDERSTANDING OF CUSTOMER ORIENTED BUSINESS PHILOSOPHY
- ABILITY TO USE MARKETING TOOLS

FOCUS → WAYS TO DELIVER VALUE TO THE CUSTOMER IN COMPETITIVE MARKETS

MARKETING MODULE OBJECTIVES

(1) IDENTIFY THE CRITICAL MARKETING FUNCTIONS NECESSARY FOR ORGANIZATIONS IN TRANSITION TO A FREE ENTERPRISE ECONOMY

(2) COMMUNICATE MARKETING PHILOSOPHIES, TOOLS AND TECHNIQUES TO OPERATE COMPETITIVELY

(3) PROVIDE THE SKILLS REQUIRED TO CREATE A STRATEGIC MARKETING PLAN FOR THE BUSINESS

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Marketing Management Overview — Discussion Notes

PARTICIPANT GOALS	CONTENT AREAS
TO BE ABLE TO:	
UNDERSTAND THE MARKET ENVIRONMENT	• CONSUMER BEHAVIOR • INDUSTRIAL BUYING BEHAVIOR • COMPETITIVE ANALYSIS • MARKET RESEARCH
DEVELOP THE MARKETING MIX	• PRODUCT PLANNING • PRICING • DISTRIBUTION • COMMUNICATIONS FUNDAMENTALS
BUILD THE MARKETING PLAN	• MARKET SEGMENTATION • COMPETITIVE POSITIONING • MEETING / EXCEEDING CUSTOMER EXPECTATIONS • INTEGRATED MARKETING STRATEGY

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Program Contents	Discussion Notes

SECTION 1: UNDERSTANDING THE MARKETING ENVIRONMENT

MARKETING ORIENTATIONS: THE ROLES OF CUSTOMERS & COMPETITORS

- Marketing Myopia & the Mission of the Firm
- Developing a Customer Centered Philosophy
- Defining Strategic Marketing

UNDERSTANDING THE CUSTOMER THROUGH MARKET SEGMENTATION TARGETING

- Marketing Opportunity Assessment
- Identifying Market Segments
- Approaches to Segmenting Industrial and Consumer Markets
- Targeting Approaches

MARKETING RESEARCH & MARKETING INFORMATION

- Formulating Marketing Research to Help Make Marketing Decisions
- Exploratory Research Decisions - Focused Group Interviews
- Survey Techniques & Measuring Satisfaction

MARKET DATA AVAILABILITY

- Module Developed in Local Country

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Program Contents	Discussion Notes

SECTION 2: DEVELOP THE MARKETING MIX

UNDERSTANDING BUYER DECISION PROCESSES

- Customer Expectations & Satisfaction
- Opinion Formation & Change
- Relating Buyer Behavior to Company Sales Strategies

PORTFOLIO ANALYSIS & STRATEGIC MARKETING

- Portfolio Techniques
- Product Life Cycles
- Marketing Approaches at Different Stages in the Life Cycle

MARKETING MIX DECISIONS: PRODUCTS & SERVICES

- Existing Vs. New Products / Existing Vs. New Market Segments
  - Penetration Approaches
  - Market Development
  - Product Development
  - Diversification

MARKETING MIX DECISIONS: PRICING

- Pricing Objectives
  - Profit Oriented
  - Growth & Share Oriented
- Pricing Approaches
  - Cost Plus Pricing
  - Return on Investment Pricing
  - Competitor Pricing
  - Customer Pricing

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SECTION 3: BUILD THE MARKETING ORGANIZATION & PLAN

DEVELOPING MARKETING ORGANIZATIONS & STRATEGIES

- **The Marketing Organization - Roles & Responsibilities**
  - **Marketing Managers**
  - **Sales Organizations**
  - **Marketing Support People**

COMPONENTS OF THE MARKETING PLAN

- **Mission / Vision & Strategic Intent**
- **Situation Analysis**
- **Objectives**
- **Strategies**
- **Program Development**
- **Forecast & Milestones**
- **Plan Reviews**

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Marketing Orientations: The Roles of Customers & Competitors Discussion Notes

I. TWO MAJOR ROLES OF A BUSINESS

A. INNOVATION

B. MARKETING

II. MISSION OF THE FIRM AND MARKETING MYOPIA

A. MYOPIA—THE RAILROAD EXAMPLE

Drill Business Example

B. MISSIONS ARE BROAD, BASIC, INNOVATIVE AND FUTURISTIC

C. EXAMPLES OF MISSIONS

1. IBM

2. ABB – "Think Global & Act Local"

III. DEVELOPING A CUSTOMER CENTERED PHILOSOPHY

A. CUSTOMER BENEFITS VS. PRODUCT CHARACTERISTICS

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Marketing Orientations: The Roles of Customers & Competitors Discussion Notes

B. VALUE AND PRICE

C. UNDERSTAND VS. PERSUASION

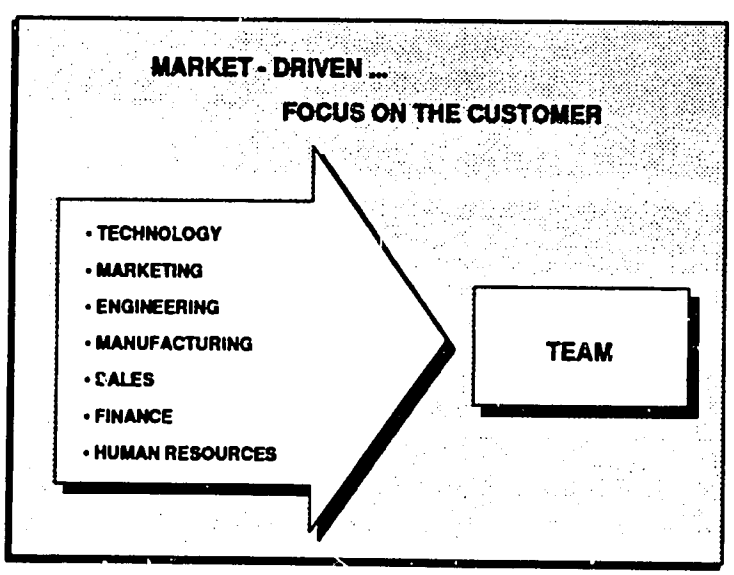
IV. DEFINITION OF STRATEGIC MARKETING

A. UNDERSTANDING NEEDS, WANTS AND VALUES OF TARGET MARKETS

B. DEVELOPING THE ORGANIZATION TO PROVIDE SATISFACTION

C. MORE EFFECTIVELY, EFFICIENTLY AND PROFITABLY THAN COMPETITORS

D. MARKETING DRIVEN = FOCUS ON THE CUSTOMER
ALL FUNCTIONS CONTRIBUTE TO MARKETING



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Understanding the Customer
Through Market Segmentation & Targeting — Discussion Notes

I. SEGMENTATION HELPS FOCUS YOUR ORGANIZATION ON THE CUSTOMER

A. THE FALLACY OF THE "MASS" MARKET CONCEPT

B. MARKET SEGMENTATION DEFINED

C. SEGMENTATION PROJECT

1. Consumer Project

2. Industrial Project

II. QUANTITATIVE INFORMATION ABOUT EACH SEGMENT

A. CUSTOMERS

B. VOLUME

C. CURRENCY

D. MARKET SHARE

1. Ours

2. Theirs

3. Ability and Need

4. Ability and No Need

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Understanding the Customer
Through Market Segmentation & Targeting — Discussion Notes

III. TARGET MARKETS & THREE BASIC STRATEGIES

A. UNDIFFERENTIATED

B. DIFFERENTIATED

C. CONCENTRATED

IV. WHY SEGMENT?

A. UNDERSTAND CUSTOMER NEEDS

B. UNDERSTAND COMPETITORS STRENGTHS

C. BUILD THE MARKETING APPROACH

V. REQUIREMENTS FOR GOOD SEGMENTS

A. MEASURABLE

B. ACCESSIBLE

C. SUBSTANTIAL

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Marketing Research & Information | Discussion Notes

I. THE ROLES OF INFORMATION

A. TO AID IN DECISION MAKING

B. REDUCE UNCERTAINTY IN ORDER TO HANDLE MORE RISK

C. PROVIDE COMPETITIVE STRENGTH

D. OPERATE QUICKER AND MORE DEFINITIVELY

II. MARKETING RESEARCH AND INFORMATION SYSTEMS

A. INFORMATION SYSTEMS

1. On-going

2. Monitor and Keep on Track (i.e., Customer Satisfaction)

3. Components

- Data
- Models and Statistics
- Input / Output

B. MARKETING RESEARCH (MARKET RESEARCH VS. MARKETING RESEARCH)

1. Situation Specific

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2. Types of Decisions

- Product Development
- Personal Selling
- Pricing
- Promotion
- Competition

3. Audiences

- Consumers
- Dealers & Other Channel Members

C. TYPES OF INFORMATION

1. Primary

2. Secondary

- Census
- Existing Reports

III. TYPES OF RESEARCH

A. EXPLORATORY

1. Purpose

a. Tries to Determine What is the Opportunity / Problem
b. Search for Possible Explanations and Solutions
c. Hypothesis Formulation

2. Methods

a. Focused Groups
b. Depth Interviews
c. Observation

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B. CONCLUSIVE

1. Purpose

a. Choice of Best Option
b. Hypothesis Testing

2. Methods

a. Surveys
b. Experiments (Test Markets)

C. TWO WIDELY USED TECHNIQUES

1. Focused Groups

a. Structure and General Approach

- 6-10 People
- # of Groups
- Sampling Unit
- Homogeneous Vs. Heterogeneous

b. Types of Questions

- Open Ended
- Problem Solving
- Snow Balling

2. Surveys

a. Sampling

- Probability
- Non-Probability

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b. Data Collection

- Mail
- Telephone
- Personal

D. RESEARCH PROCESS EXAMPLE

1. Form the Research Problem

a. What Decisions

Key - Never Start a Project with the Request for Information

b. What Information
c. What Sources - People, Etc.
d. What Data Collection
e. How Analyzed
f. Recommendations

2. Typical Process

Exploratory

- Focused Groups (2 Per Segment)
- Individual Depth Interviews (20 Personnel)

Conclusive

- Survey (400 Telephone)

3. Approximate Costs

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Understanding Buyer Decision Processes | Discussion Notes

I. CUSTOMER PERCEPTIONS AND ATTITUDES SHAPE EXPECTATIONS

A. PERCEPTIONS

1. Selective Attention

2. Selective Comprehension

3. Selective Retention

B. ATTITUDES

1. Choice Criteria - Needs & Wants

2. Desirability or Satisfaction

3. Product Evaluations

4. Behaviors

C. SATISFACTION THROUGH MEETING OR EXCEEDING CUSTOMER EXPECTATIONS

II. CHANGING CUSTOMER OPINIONS & ATTITUDES

A. CENTRAL APPROACHES (HIGH INVOLVEMENT)

1. Understanding & Altering Criteria

2. Focusing on Attributes That Create Satisfaction

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3. **Providing Information About Products**

4. **Gaining Trial**

B. **PERIPHERAL APPROACHES (LOW INVOLVEMENT)**

1. **Source Credibility**

   a. **Expertise**
   b. **Trust**
   c. **Dynamism**

2. **Order - First & Last**

3. **Humor**

4. **Salesperson Characteristics**

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Positioning Discussion Notes

I. POSITIONING DEFINED

A PERCEPTION OF BUYERS
POSITIONING & IMAGE

II. DIMENSIONS OF POSITIONING

A. OBJECT TO ATTRIBUTE

B. OBJECT TO OBJECT

C. OBJECT TO CONSUMER

III. EXAMPLES OF POSITIONING

A. PRICE & VALUE ADDED

B. QUALITY & PRICE

C. POSITIONING EXERCISE

IV. BASIC POSITIONING STRATEGIES

A. COMMODITY OR CONVENIENCE

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B. COMPARISON OR SHOPPING

C. SPECIALTY OR UNIQUE

V. LIVING CASE

EACH PARTICIPANT POSITIONS
THEIR COMPANIES MAJOR PRODUCT

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Portfolio Analysis & Strategic Marketing — Discussion Notes

I. PORTFOLIO PURPOSES

A. MATCHING RESOURCES WITH OPPORTUNITY

B. VISUALIZING

Where We Are –
Where We Want to Go –
How We Get There

C. BEGINNING STRATEGY FORMULATION

II. STRATEGIC BUSINESS UNITS

A. TYPES OF INDUSTRY SEGMENTS

B. PRODUCTS / SERVICES OFFERED

C. TECHNICAL CAPABILITIES

III. BUSINESS PORTFOLIO PROGRAMS

A. TOO MANY PRODUCTS –
TOO MANY MARKETS –
TOO MANY CUSTOMERS

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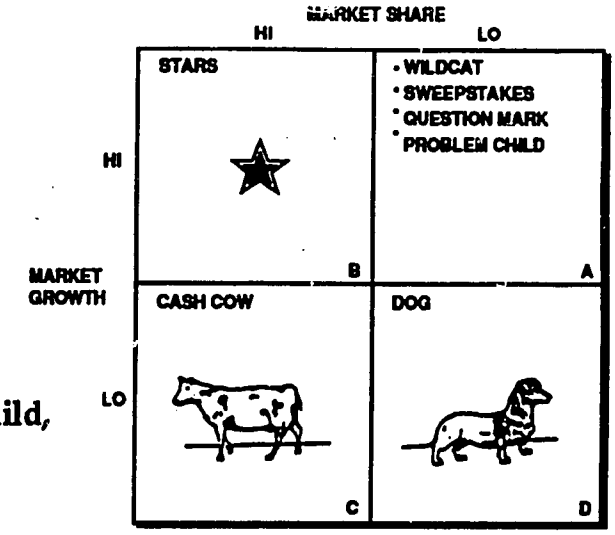
Portfolio Analysis & Strategic Marketing — Discussion Notes

B. THE BASIC GRID

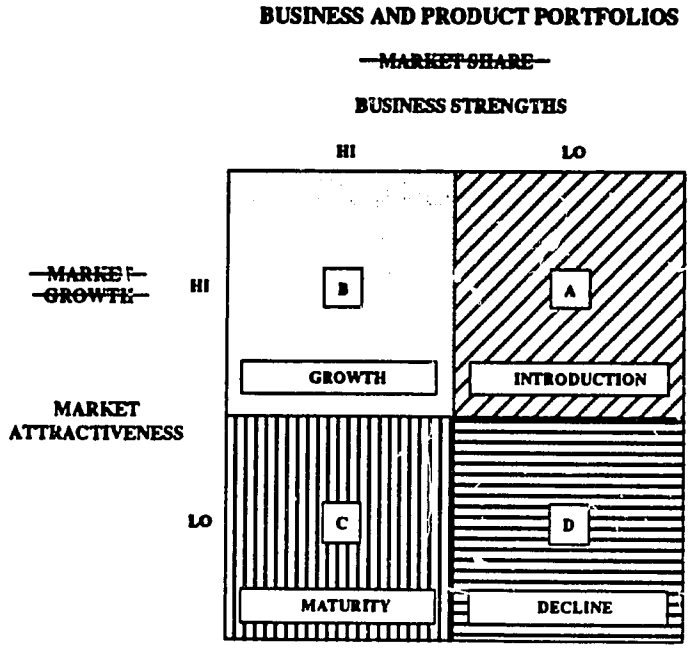
1. The Experience Curve
2. Market Share and Market Growth



C. CATEGORIES OF BUSINESS

1. Sweepstakes, ?, Problem Child, Wildcat
2. Stars
3. Cash Cows
4. Dogs

D. MANAGEMENT IMPLICATIONS



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IV. MORE ELABORATE DIMENSIONS

A. MARKET ATTRACTIVENESS PROJECT

B. BUSINESS STRENGTHS PROJECT

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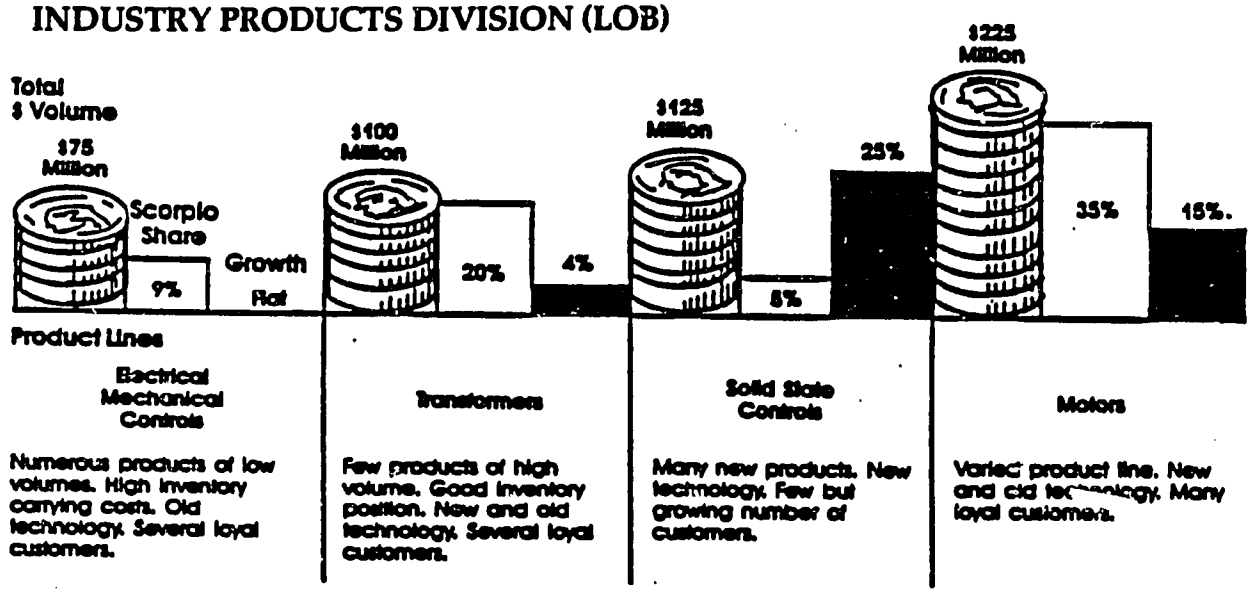
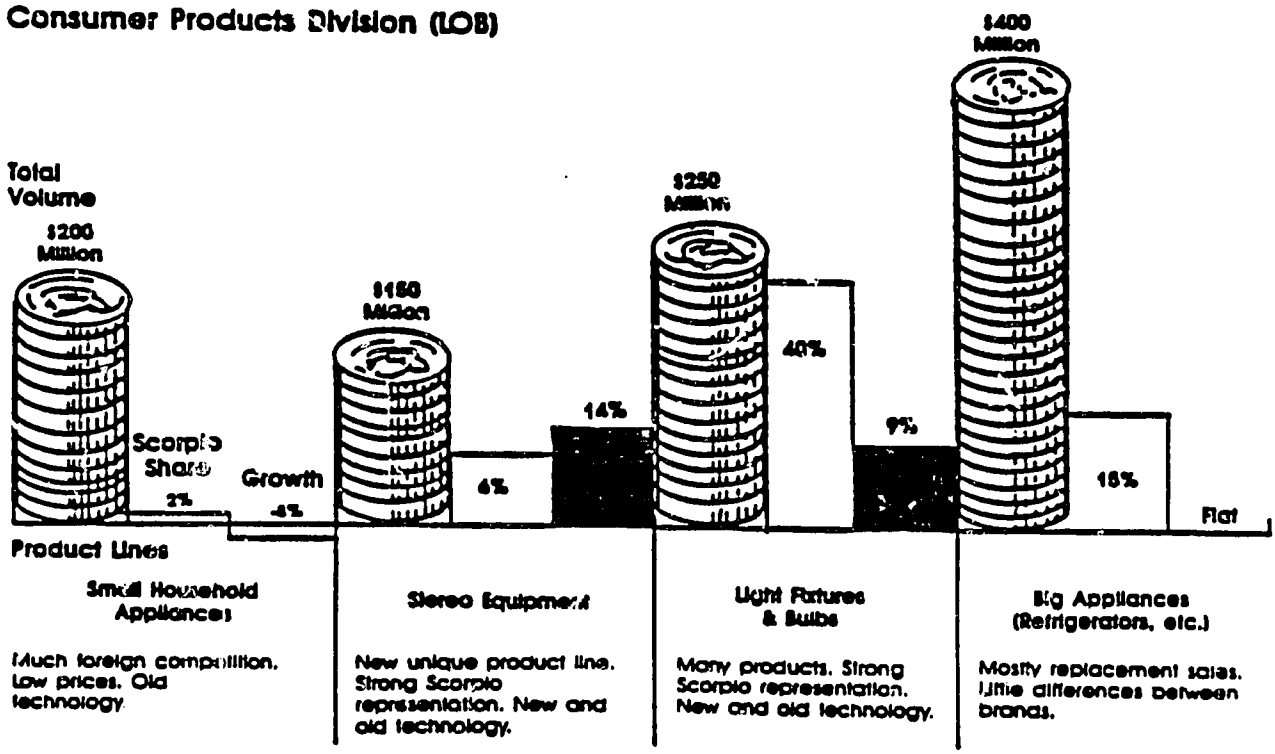
PROJECT

SITUATION: Look at this situation from the viewpoint of a planner in Scorpio Corporation. Scorpio Electric Corporation has two major businesses - an industrial division and a consumer division. Their product lines are as follows:

INDUSTRY PRODUCTS DIVISION (LOB)



Consumer Products Division (LOB)



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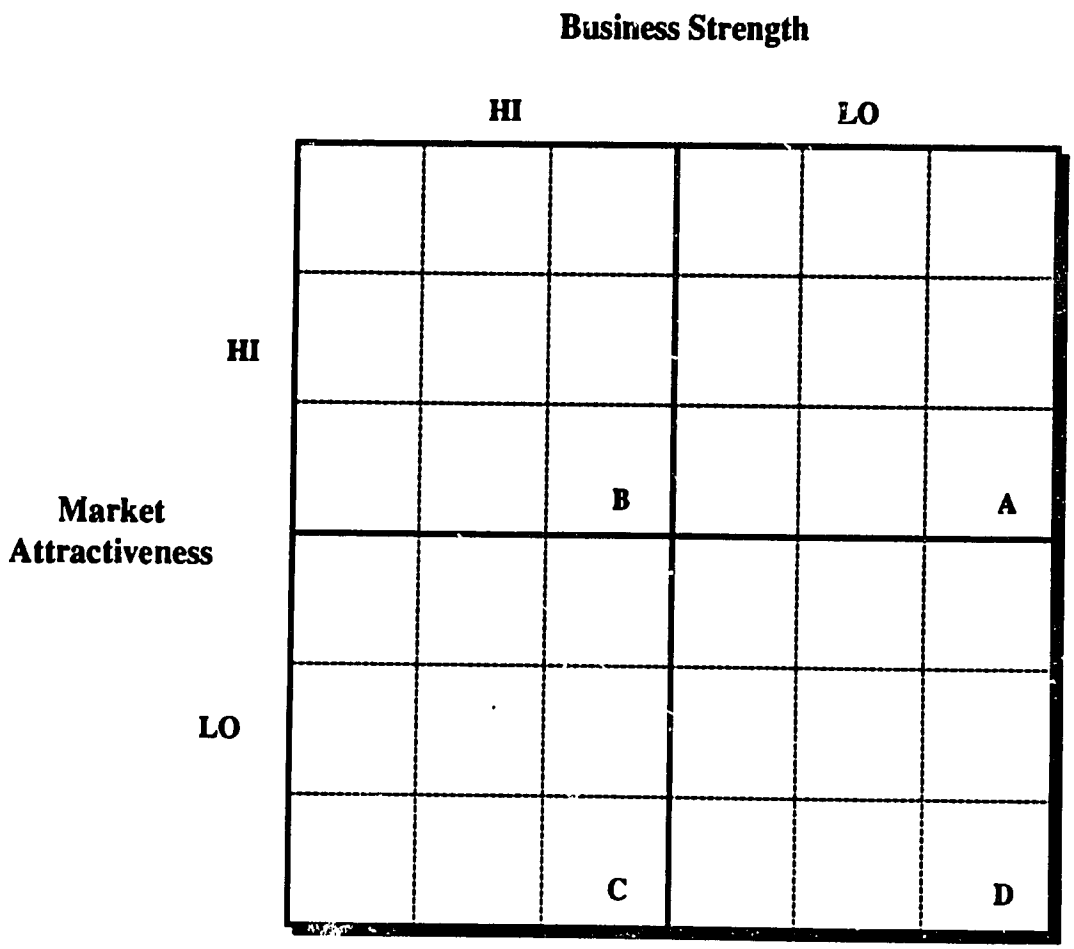
DO THE FOLLOWING FOR EACH DIVISION:

A. Evaluate each Scorpio product line according to market attractiveness.

B. Evaluate Scorpio's business strength regarding each product line.

C. For each division, put the product lines on the matrix based on your evaluations.



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Marketing Mix Decisions: Products & Services — Discussion Notes

I. PRODUCTS AND SERVICES DEFINED

A. OBJECTS OR EVENTS CUSTOMERS EXCHANGE FOR MONEY (OR OTHER VALUABLES)

- Attributes
- Quality
- Brand Name
- Repairs
- Reputation of Seller

B. DIFFERENCES IN GOODS AND SERVICES

1. Tangibility
2. Where Produced
3. Contact with Customer
4. Produced at Time of Consumption
5. Inventory Situation

C. MOST COMPANIES PACKAGE GOODS AND SERVICES

D. MORE SIMILARITIES THAN DIFFERENCES

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Marketing Mix Decisions: Products & Services | Discussion Notes

E. IBM INSTALLED BASE - CONSUMABLES - SOFTWARE DEVELOPMENT

II. BRANDING

A. HISTORICAL REASON

B. MOST POWERFUL BRAND NAMES

- U.S.
- World

C. BRANDING REQUIREMENTS

- Distinctive
- Adaptable to New Products
- Can be Registered
- Easy to Remember
- Benefits, Uses and Actions

III. PRODUCT LINE BREADTH AND DEPTH

A. BROAD / NARROW LINE

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Marketing Mix Decisions: Products & Services — Discussion Notes

B. DEEP / SHALLOW LINE

Examples:

	BROAD	NARROW
DEEP	DEPARTMENT STORE	SPECIALTY STORE
SHALLOW	DISCOUNT STORE	CONVENIENCE STORE

IV. PRODUCT LIFE CYCLE

A. STAGES

- Development
- Introduction
- Growth
- Maturity
- Decline

B. ALL PRODUCTS AND SINGLE BRAND

C. PROFITS AND THE LIFE CYCLE

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Marketing Mix Decisions: Products & Services | Discussion Notes

D. PRODUCT POSITIONS OVER THE LIFE CYCLE

- Specialty
- Comparison
- Commodity

E. OBJECTIVES OVER THE LIFE CYCLE

- Market Share
- Customer

F. PRODUCT EXTENSION

- New Segments
- New Uses
- Replacement Parts

V. ADOPTION CURVE

A. INNOVATORS

B. EARLY ADOPTERS

C. EARLY MAJORITY

D. LATE MAJORITY

E. LAGGARDS

Strategy Implications

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Marketing Mix Decisions: Products & Services | Discussion Notes

VI. PRODUCT DEVELOPMENT

A.

	EXISTING SEGMENTS	NEW SEGMENTS
EXISTING PRODUCTS		
NEW PRODUCTS		

B. MARKETING ACTIONS

1. Penetration
2. Market Development
3. Product Development
4. Diversification

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Marketing Mix Decisions: Pricing — Discussion Notes

I. PRICING

A. PRICING EFFECTS ALL PARTS OF THE COMPANY

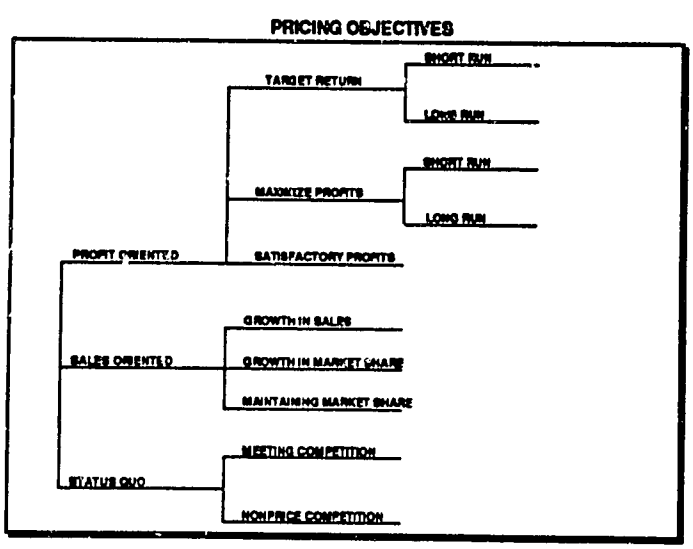
B. NO GOOD PRINCIPLES

II. PRICING OBJECTIVES ALTER THE APPROACH

A. PROFIT OBJECTIVES

B. VOLUME OBJECTIVES

C. MAINTAINING STATUS QUO



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Marketing Mix Decisions: Pricing Discussion Notes

III. ADMINISTRATION OF PRICES

A. COST-ORIENTED PRICING

1. Cost-Plus Pricing Limitation

2. Rate of Return Pricing

B. CUSTOMER-ORIENTED PRICING

1. Customary Pricing

2. Psychological Pricing

3. Promotional Pricing

C. COMPETITION ORIENTED PRICING

1. Going Rate

2. Discount or Premium

3. Leader-Follower, Price Leaders

4. Competitive Bidding

IV. STRATEGIC ISSUES IN PRICING

A. PRODUCT-LINE PRICING

1. Products Different

B. PRICING AND THE PRODUCT LIFE CYCLE

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Marketing Mix Decisions: Pricing — Discussion Notes

C. NEW PRODUCT STRATEGY

1. Market Skimming Characteristics

2. Penetration Pricing

NEW PRODUCT PRICING STRATEGY

OBJECTIVE	STRATEGY	WHEN USED
ENCOURAGE OTHERS TO PROMOTE THE PRODUCT TO STIMULATE PRIMARY DEMAND	PRICE UMBRELLA LEADERSHIP	• SEVERAL COMPARABLE PRODUCTS • GROWING MARKET • MIDDLE-TO-LONG PRODUCT LIFE SPAN • KNOWN COSTS
STIMULATE MARKET GROWTH BUT CAPTURE MARKET SHARE AT A PROFIT THROUGH LOW PRICES. BECOME ENTRENCHED TO GENERATE LONG-TERM PROFITS	MARKET PENETRATION	• LONG PRODUCT LIFE • MASS MARKET • EARY MARKET ENTRY • DEMAND SENSITIVE TO PRICE • UNIT COSTS DECREASE AS OUTPUT INCREASES • NEWER PRODUCT • NO "ELITE" MARKET WILLING TO PAY PREMIUM
KEEP COMPETITORS OUT OF MARKET OR ELIMINATE EXISTING ONES	PRE-EMPTIVE EXTINCTION	• USE THIS ON ONE OR TWO PRODUCTS, WITH OTHER PRICES MISSETING OR HIGHER THAN THOSE OF COMPETITORS
HIGH SHORT-TERM PROFIT (WITHOUT REGARD FOR LONG-TERM)	SKIM	• NO COMPETITIVE PRODUCTS • NEW PRODUCT • LARGE NUMBER OF BUYERS • BLOCKED COMPETITOR ENTRY DUE TO HIGH PRICE, PATENT CONTROL, HIGH R & D COSTS, HIGH PROMOTION COSTS, AND/OR RAW MATERIAL CONTROL • UNCERTAIN COSTS • SHORT LIFE CYCLE • PRICE INSENSITIVITY
EFFICIENT MANUFACTURER BEFORE COMPETITORS GET ENTRENCHED, WITHOUT SACRIFICING LONG-TERM OBJECTIVES	SLIDE-DOWN DEMAND CURVE	• BY ESTABLISHED COMPANIES LAUNCHING INNOVATIONS • SLIGHT BARRIERS TO ENTRY BY COMPETITION • MEDIUM LIFE SPAN

V. PRICE LEADERSHIP STRATEGIES

A. INDUSTRY CONDITIONS

B. COMPANY CONDITIONS

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Marketing Mix Decisions: Logistics (Physical Distribution) Discussion Notes

I. DEFINITION AND GENERAL PRINCIPLES

Planning, Implementing and Controlling the Physical Flow of Materials and Final Goods From Point of Origin to Point of Use to Meet Needs of Customers at a Profit (Place Utility)

A. HOW DISTRIBUTION REDUCES TRANSACTIONS

B. CONSUMER MARKETING CHANNELS

C. INDUSTRIAL MARKETING CHANNELS

II. TYPES OF DISTRIBUTION

A. EXCLUSIVE

- Rolex

B. SELECTIVE

- Seiko

C. EXTENSIVE (INTENSIVE)

- Timex

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Marketing Mix Decisions: Logistics (Physical Distribution) Discussion Notes

III. MARKETING AND LOGISTICS OBJECTIVES

A. MARKETING ALLOCATES RESOURCES TO 4P'S TO IMPLEMENT THE MARKETING STRATEGY

Develop The Organization To Provide Satisfaction

B. LOGISTICS MINIMIZES TOTAL COSTS GIVEN THE CUSTOMER SERVICE OBJECTIVE

IV. CUSTOMER SERVICE OBJECTIVE AND ACTIONS

A. SERVICE LEVEL DEFINITION:

Percent Of Items That Can Be Filled Within A Given Time

Example: 95% In 3 Days

B. TRANSPORTATION

C. WAREHOUSING

D. ORDER PROCESSING

E. VENDOR AND QUANTITY ADMINISTRATION

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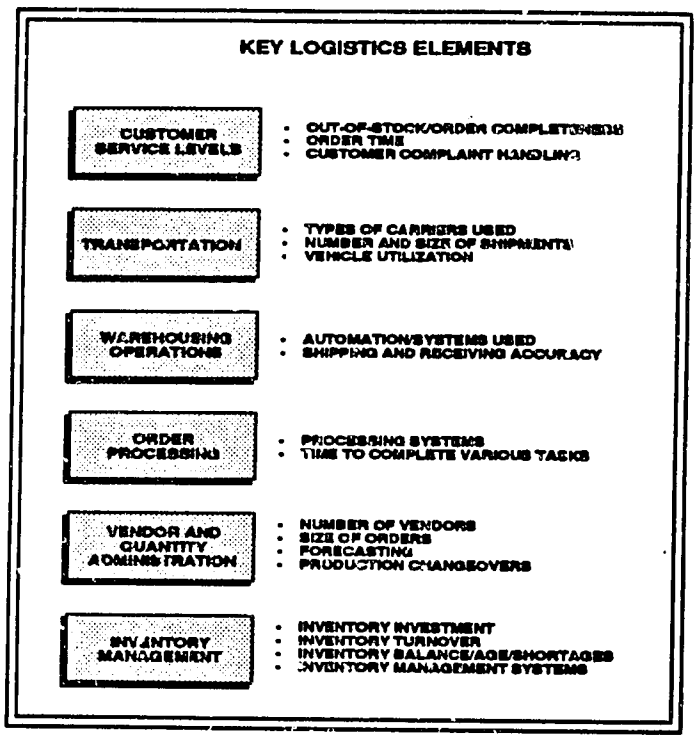
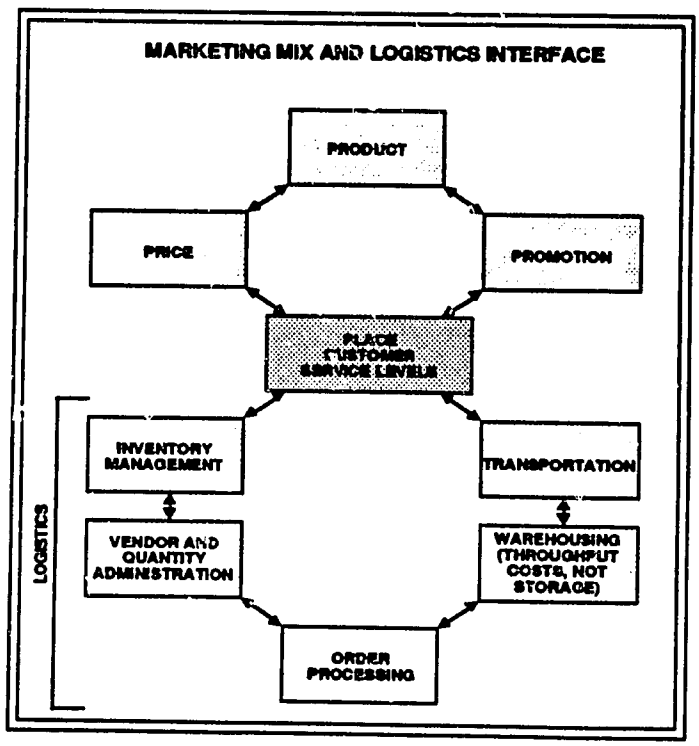
Marketing Mix Decisions: Logistics (Physical Distribution) Discussion Notes





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Marketing Mix Decisions: Salesforce — Discussion Notes

I. IMPORTANCE OF (VALUE OF) PERSONAL SELLING

A. CRITICAL MARKETING FUNCTION

B. HIGHLY PAID JOB

II. FUNCTIONS OF SALES PEOPLE

A. TEAM LEADER OF THE FIRMS INTERFACE WITH CUSTOMERS

B. ANALYSIS OF OPPORTUNITIES

C. PULL & PUSH

D. SALES & NEGOTIATION

E. CUSTOMER SERVICE

F. MARKET LOYALTY

III. STEPS IN SELLING

A. PLANNING – MARKETING MANAGER OF THE TERRITORY

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Marketing Mix Decisions: Salesforce Discussion Notes

B. PROSPECTING

1. Finding Customers

2. Evaluating Competition

C. PRE-APPROACH & APPROACH

D. PRESENTATION OF THE COMPANY'S PHILOSOPHY & CAPABILITIES

E. NEGOTIATING

F. CLOSING

G. SERVICING

IV. TYPICAL SALES STRUCTURES

A. VERTICAL MARKET VS. GEOGRAPHY

B. REGIONAL & DISTRICT MANAGERS

C. SALES TERRITORIES

D. TOP MANAGEMENT INVOLVEMENT

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Marketing Mix Decisions: Salesforce Discussion Notes

V. COMPENSATION & FORECASTING

A. SALARY

B. COMMISSION

C. BONUS

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Components of the Strategic Marketing Plan	Discussion Notes

I. MISSION STATEMENT

II. SITUATION ANALYSIS

A. CUSTOMERS

1. Segments

2. Quantitative Analysis

3. Customer Attitudes -
Needs, Wants and Expectations

B. CHANNELS

Map of Product Flow From Company to Customers

C. COMPETITION

1. Evoked Set & Product Class

2. Industry Structure

D. PRODUCT & SERVICE LIFE CYCLES

E. ENVIRONMENTAL ASPECT

III. STRENGTHS, WEAKNESSES,
OPPORTUNITIES AND THREATS

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Components of the Strategic Marketing Plan — Discussion Notes

IV. SELECTION OF OBJECTIVES BY SEGMENT

A. NEW CUSTOMERS

B. GREATER VOLUME FROM EXISTING CUSTOMERS

V. STRATEGY FORMULATION

A. TARGET MARKETS & APPROACH

B. COMPETITIVE POSITIONING

C. STRATEGIES AGAINST GIANTS

- Unique
- Opportunistic

D. DEFENDING POSITIONS

E. PROGRAM DEVELOPMENT

- Segments
- Products
- Marketing Mix Elements

F. FORECASTING & FINANCE

G. REVIEW PROCEDURES

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PRODUCTION MODULE

April 28-30, 1992
Prague, Czechoslovakia

Session	Day 1 - April 28	Day 2 - April 29	Day 3 - April 30
8:30-10:00	Operations Management Introduction and Overview	Inventory: Purposes, Forms, and Functions Independent Demand Models	SF Management Issues
Break			
10:15-11:45	Process Flow Analysis	Inventory	Implementation of Manufacturing Principles
Lunch			
1:30-3:00	Capacity	Quality Management	
Break			
3:15-4:45	Scheduling	Procurement	

PRODUCTION
PRAGUE, CZECHOSLOVAKIA

Overview of Module:

This module is intended for Executives and educators who are interested in improving their understanding of issues and ideas important to effectively managing the operations function. This course module will emphasize principles as well as practical guidelines. The course module will utilize lecture presentations, video presentations, computer demonstrations, and individual and group exercises.

Course Overview
- Introduction to course instructors, participants and coverage of miscellaneous administrative details

Operations Management Introduction and Overview
- Introduction to identification of basic decisions and activities of OM
- Fundamental strategies of OM (speed, cost, quality, flexibility)
- Framework for manufacturing planning and control (from production planning to shop floor control)

Process Flow Analysis
- Process charting, flow charting, and assembly charting
- Mercury Marine Video
- Case

Capacity
- Defining capacity
- Importance of capacity
- Differentiating effective, maximum, and demonstrated capacity
- Input/Output control
- Capacity's impact on quality
- Lead time
- Cost and flexibility
- Multiple types of capacity (manpower, tooling, machine)
- Capacity and layout

Scheduling
- What is scheduling
- Push v. Pull scheduling
- Order review - overview
- Dispatching rules (FCFS, SPT, MinSlk, CRR, Operation Due Date)
- Scheduling and capacity
- Scheduling of maintenance and rework
- Exercise: scheduling

Inventory: Purposes, Forms and Functions Independent Demand Models
- Types of inventory (raw material, WIP, shippable goods, MRO)
- Functions (buffer, lot sizing, anticipatory, seasonal, transit, decoupling)
- Evaluation in inventory effectiveness (e.g., accuracy by part and location, inventory turns)
- Economic order quantity
- Economic lot size (economic batch quantity)
- EOQ with price breaks
- Periodic order quantity

- Order point/order quantity systems
- Min/Max systems
- Periodic review systems
- ABC analysis

Inventory

- Transaction control
- Order processing
- Stores management
- Inventory accuracy
- Cycle counting
- MRP
- Brunswick Motors

Quality Management

- Concept of quality
- Quality control & total quality control
- Introduction to seven tools of quality
- Control (nominal group activities, run charts, control charts, pareto analysis, histograms, cause and effect diagrams)
- Examination of X-bar and P charts
- Exercise

Procurement

- Purchasing
- Purchasing Process
- Placing a buy-supplier selection/evaluation
- Supplier scheduling
- Building effective buyer/supplier relationships

SF Management Issues

- Quality circles
- Setting standards
- Basics of SF supervision
- Performance measurement (efficiency)

Implementation of Manufacturing Principles

- Implementation guidelines
- Time-based competition
- Examples of effective group exercise

Visual 1.1

" PRODUCTION COURSES MUST DEAL WITH THE STRATEGIES OF TOP EXECUTIVES, THE TRANSLATION OF PRODUCTION STRATEGIES TO LIVE DECISIONS OF MIDDLE MANAGERS, AND THE TACTICAL OPERATIONS AND PROCEDURES OF LOWER LEVEL MANAGERS. "

- President's Commission on Industrial Competitiveness, 1984.

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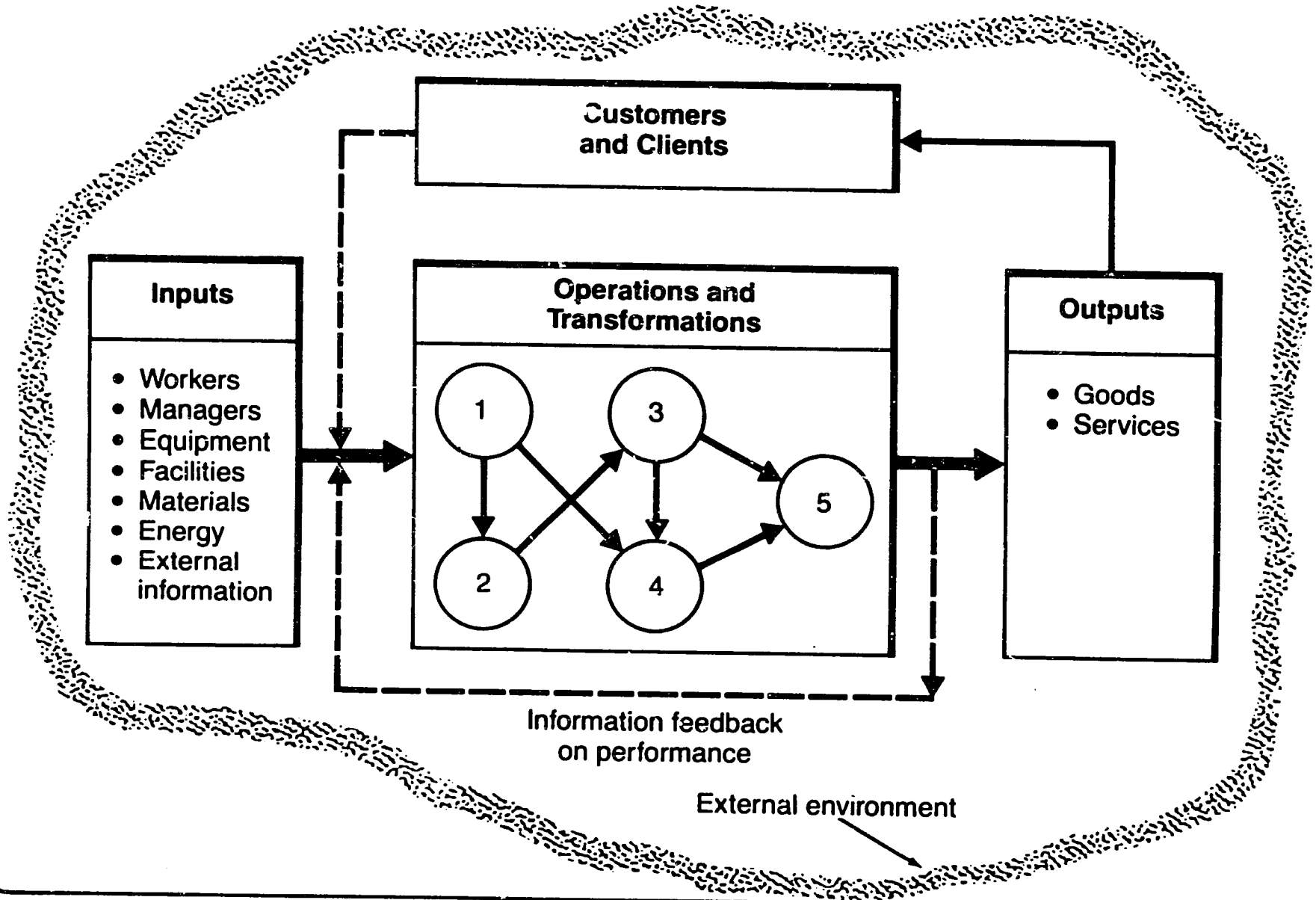
The Production and Operations Management System



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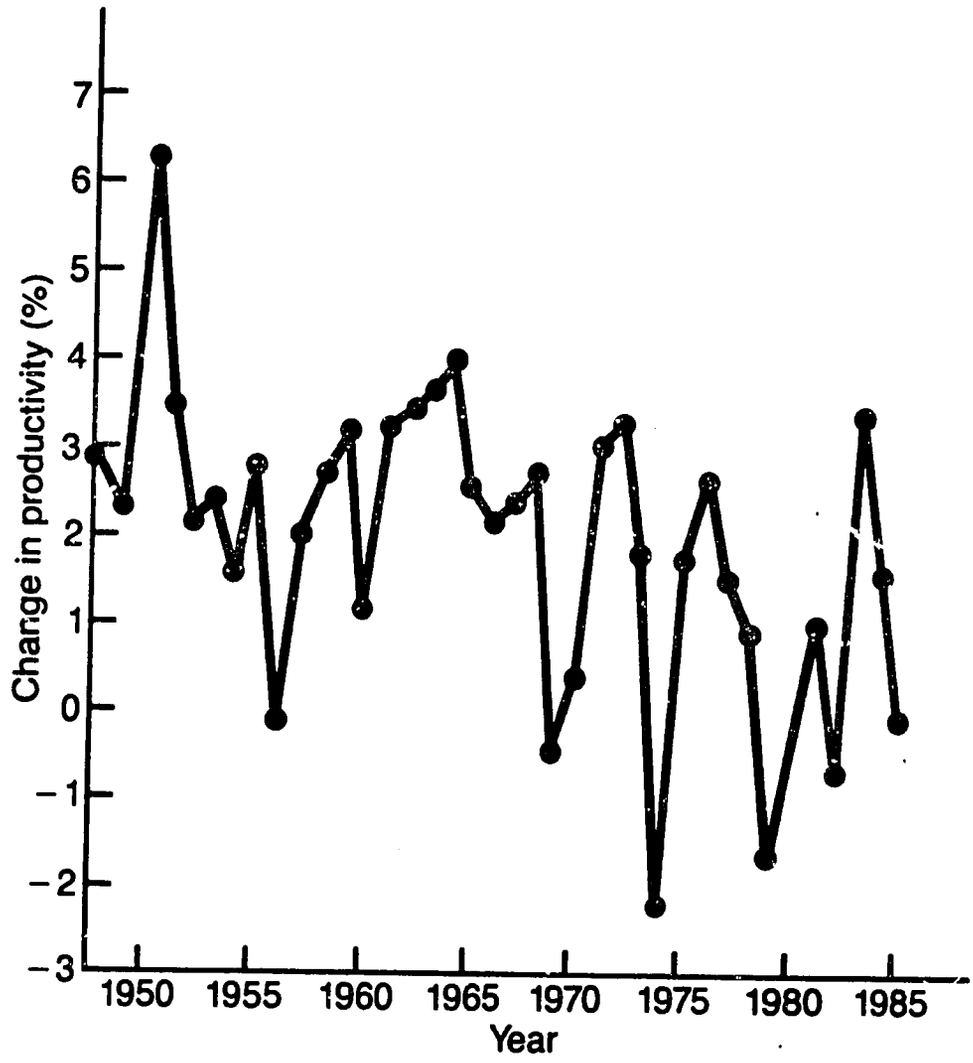
Visual 1.3

Productivity Trends



Source: Economic Report of the President, February 1986, p. 303.

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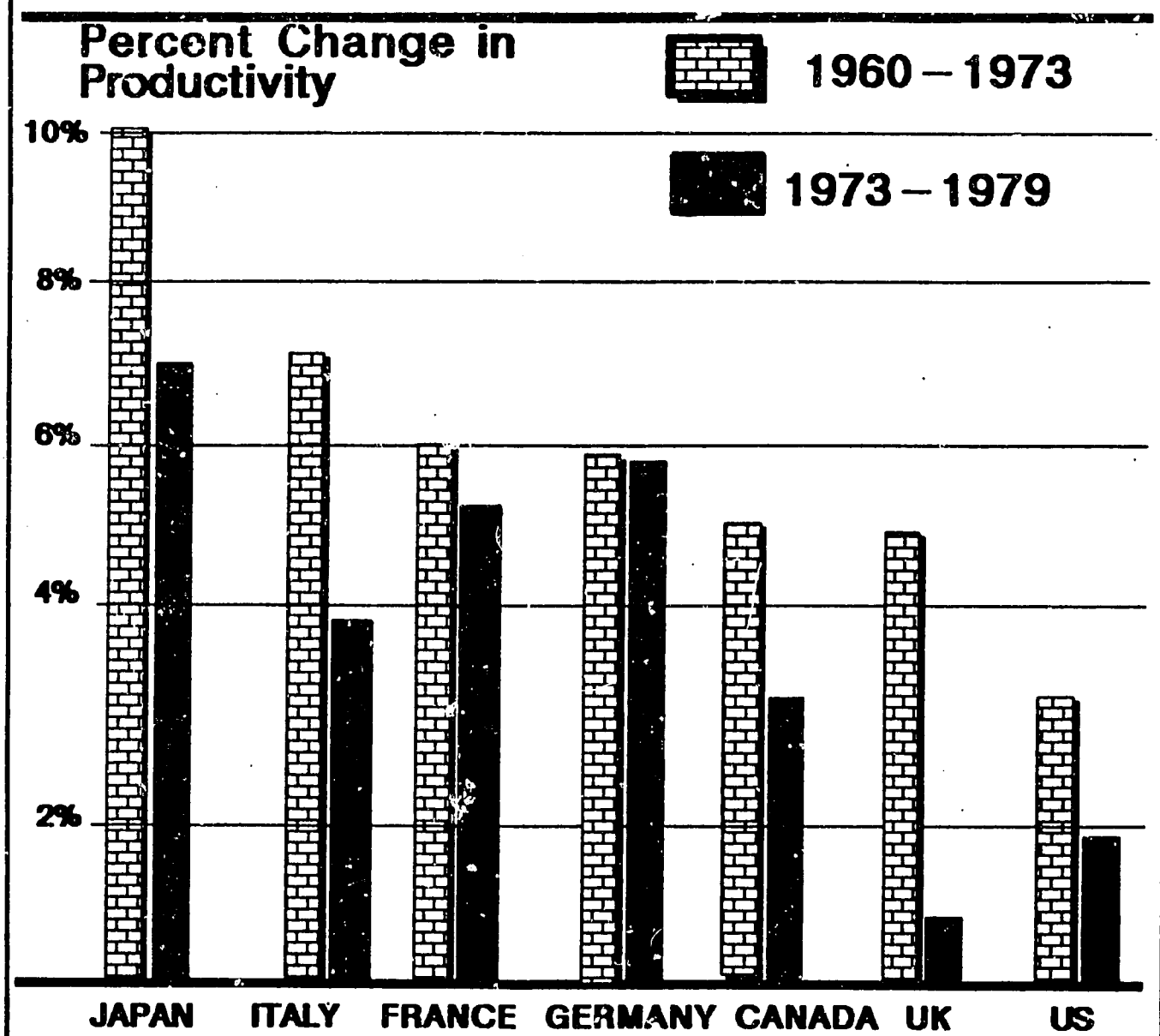
Visual 1.4

Productivity Changes



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Visual 1.5

SOME USUAL EXPLANATIONS

a. GOVERNMENT REGULATIONS
b. NEW INVESTMENT
c. COMPOSITION OF WORK FORCE
d. HIGH INITIAL BASE
e. ENERGY COSTS
f. WAGE RATES
g. STRONG DOLLAR

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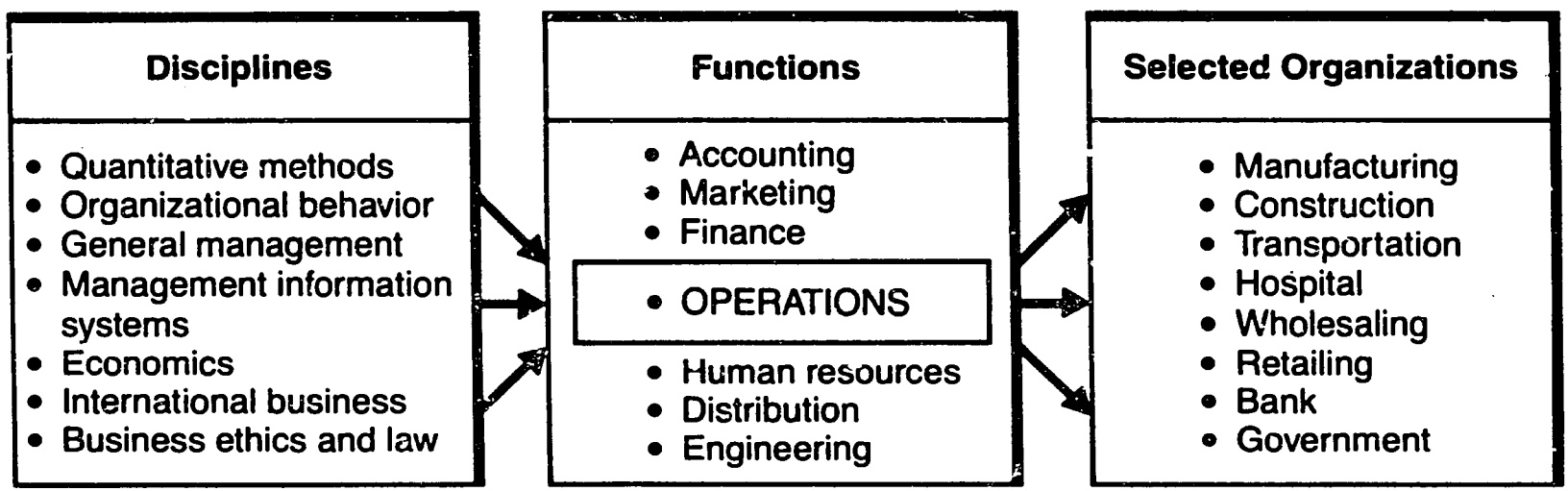
Operations Management as a Function



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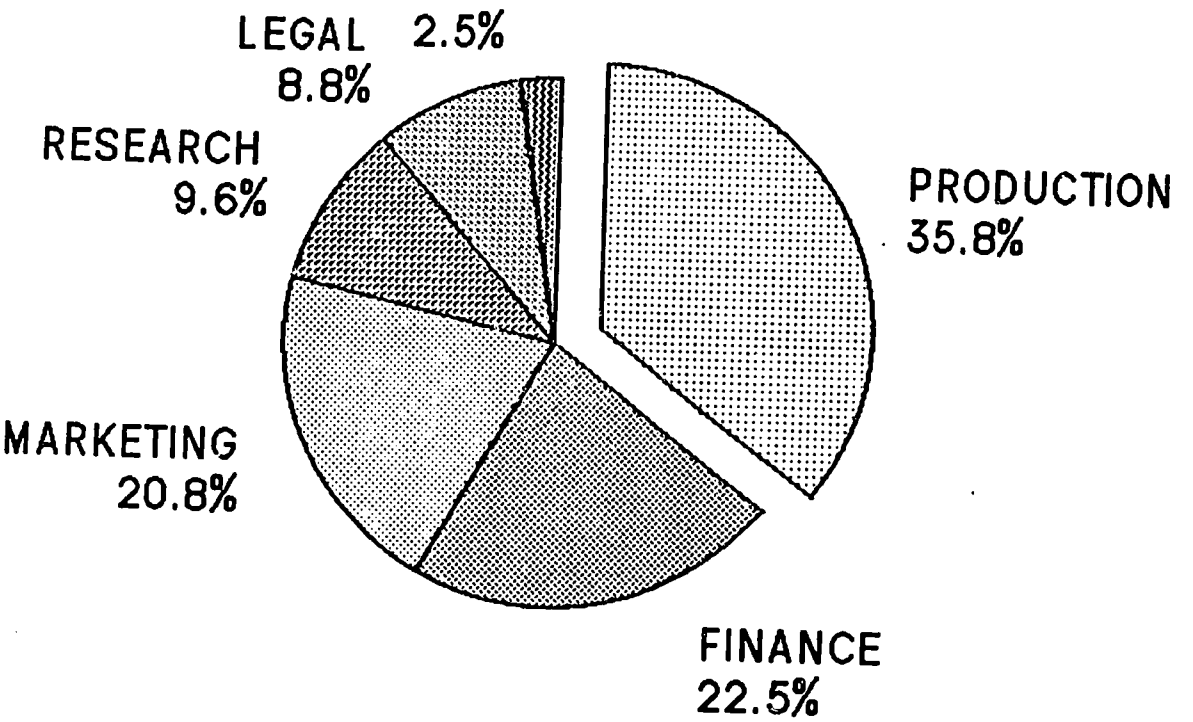
Visual 1.11

WHERE CEO'S LEARN THE ROPES



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BASIC STEPS IN DECISION MAKING

* PROBLEM RECOGNITION.
* PROBLEM FORMULATION.
* ANALYSIS OF ALTERNATIVES.
* CHOICE AND IMPLEMENTATION OF AN ALTERNATIVE.

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Visual 1.13

"DESIGN" DECISIONS	SAMPLE QUESTIONS
1. PRODUCT PLANS	WHAT PRODUCTS?
2. COMPETITIVE PRIORITIES	EXCEL ON COST OR FLEXIBILITY?
3. POSITIONING STRATEGY	ORGANIZE AROUND PRODUCTS?
4. QUALITY MANAGEMENT	RELIABILITY OR TOP-OF-THE-LINE?
5. PROCESS DESIGN	WHAT TRANSFORMATION PROCESSES?

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Visual 1.14

"DESIGN" DECISIONS	SAMPLE QUESTIONS
6. WORK-FORCE MANAGEMENT	HOW HIRE AND MOTIVATE?
7. TECHNOLOGICAL CHOICES	SHOULD WE AUTOMATE?
8. CAPACITY & MAINTENANCE	IS OUR FACILITY TOO LARGE?
9. LOCATION	WHERE IS A GOOD STORE LOCATION?
10. LAYOUT	WHAT DEPARTMENTS SHOULD BE CLOSE?

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Visual 1.15

"OPERATING" DECISIONS	SAMPLE QUESTIONS
1. MATERIALS MANAGEMENT	WHO SHOULD BE OUR SUPPLIERS?
2. PRODUCTION & STAFFING PLANS	WHAT SHOULD OUR STAFF SIZE BE?
3. MASTER PRODUCTION SCHEDULING	SHOULD WE MAKE-TO-STOCK?
4. INVENTORY	HOW MUCH DO WE NEED?
5. SCHED-ULING	WHAT SHOULD WE DO FIRST?
6. QUALITY CONTROL	IS THE PROCESS UNDER CONTROL?

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Visual 1.16

DEFINING THE MISSION

1. What business are we in? What should it be ten years from now?

2. Who are our customers?

3. What are our basic beliefs?

4. What are our greatest strengths?

5. What are our key performance objectives?

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Visual 1.17

HOW STRATEGIC PLANNING DIFFERS

1. LONGER TIME HORIZON.
2. LESS CERTAINTY.
3. LESS STRUCTURED.
4. MORE ENDS ORIENTED.
5. POORLY DEFINED INFORMATION REQUIREMENTS.
6. MORE IRREVERSIBLE IMPACT.
7. FOCUSES ON THE WHOLE.

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KEY POINTS FOR OPERATIONS STRATEGY

1. Operations can be a COMPETITIVE WEAPON or a MILLSTONE.

2. Decisions in operations should be LINKED.

3. Address the STRATEGIC CHOICES first, but success also depends on the TACTICAL ISSUES.

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Visual 1.19

EVOLUTION OF OPERATIONS MANAGEMENT

1. PAST MILESTONES
   a. REPEATABILITY
   b. AUTOMATION
   c. SCIENTIFIC MANAGEMENT
   d. THE MODERN ERA
2. THE PRESENT AND THE FUTURE
   a. EXTENDING TO THE SERVICE SECTOR
   b. RECOGNIZING THE STRATEGIC SIDE OF OPERATIONS
   c. RAPIDLY CHANGING TECHNOLOGIES
   d. FOREIGN COMPETITION

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Case : Hank Kolb, Director, Quality Assurance

Hank Kolb was whistling as he walked toward his office, still feeling a bit like a stranger since he had been hired four weeks ago as director, quality assurance. All last week he had been away from the plant at an interesting seminar entitled "Quality in the 80s" given for quality managers of manufacturing plants by the corporate training department. He was not looking forward to really digging into the quality problems at this industrial products plant employing 1,200 people.

Hank poked his head into Mark Hamler's office, his immediate subordinate, the quality control manager, and asked him how things had gone last week. Mark's muted smile and an "Oh, fine" stopped Hank in his tracks. He didn't know Mark very well and was unsure pursuing this reply any further. Hank was still uncertain of how to start building his relationship with him since Mark had been passed over for the promotion to Hank's job - Mark's evaluation form had stated "superb technical knowledge; managerial skills lacking." Hank decided to inquire a little further and asked Mark what had happened. Mark replied:

> Oh, just another typical quality snafu. We had a little problem on the Greasex line last week (a specialized degreasing solvent packed in a spray can for the high-technology sector). A little high pressure was found in some cans on the second shift, but a supervisor vented them so that we could ship them out. We met our delivery schedule!

Since Hank was still relatively unfamiliar with the plant and the products he asked Mark to elaborate. Painfully, Mark continued:

> We've been having some trouble with the new filling equipment, and some of the cans were pressurized beyond our acceptable standard on a psi (pounds per square inch) rating scale. The production rate is still 50 percent of standard, about 14 cases per shift, and we caught it halfway into the shift. Mac Evans (the inspector for that line) picked it up, tagged the cases "Hold" and went on about his duties. When he returned at the end of the shift to write up the rejects, Wayne Simmons, first-line supervisor, was by a pallet of finished goods finishing sealing up a carton of the rejected Greasex; the reject "Hold " tags had been removed. He told Mac that he had heard about the high pressure from another inspector at coffee break, had come back, taken off the tags, individually turned the cans upside down and vented every one of them in the rejected eight cartons. He told Mac that production planning was really pushing for the stuff, and they couldn't delay by having it sent through the rework area. He told Mac that he would get on the operator to run the equipment right next time. Mac didn't write it up but came in about three days ago to tell me about it. Oh, it happens every once in a while, and I told him to make sure to check with maintenance to make sure the filling machine was adjusted; and I saw Wayne in the hall and told him that he ought to send the stuff through rework next time.

Hank was a bit dumbfounded at this and didn't say much - he didn't know if this was a "big deal" or not. When he got to his office he thought again what Mr. Morganthal, general manager, had said when he had hired Hank. He warned Hank about the "lack of a quality attitude" in the plant and said that Hank "should try to do something about this." He had further emphasized the quality problems in the plant; "We have to improve our quality, it's costing us a lot of money, I'm sure of it, but I can't prove it! Hank, you have my full support in this matter; you're in charge of these quality problems. This downward quality-productivity-turnover spiral has to end!"

The incident had happened a week ago; the goods were probably out in the customer's hands by now; everyone had forgotten about it (or wanted to!); and there seemed to be more pressing problems than this for Hank to spend his time on; but this continued to nag at him. He felt like the quality department was being treated as a joke, and it also felt to him like a personal slap from manufacturing. He didn't want to start a war with the production people but what could he do? He was troubled enough to cancel his appointments and spend the morning talking to a few people. After a long and very tactful morning, he learned the following:

A. From personnel - the operator for the filling equipment had just been transferred from shipping two weeks ago. He had had no formal training in this job but was being trained by Wayne, on the job, to run the equipment. When Mac had tested the high-pressure cans, the operator was nowhere to be found and had only learned of the rejected material from Wayne after the shift was over.

B. From plant maintenance - this particular piece of automated filling equipment had been purchased two years ago for use on another product. It had been switched to the Greasex line six months ago, and maintenance had had 12 work orders during the last month for repairs or adjustments on it. The equipment had been adapted by plant maintenance for handling the lower viscosity Greasex, which it had not originally been designed for. This included designing a special filling head. There was no scheduled preventive maintenance for this equipment, and the parts for the sensitive filling head, replaced three times in the last six months, had to be made at a nearby machine shop. Nonstandard downtime was running at 15 percent of actual running times.

C. From purchasing - the plastic nozzle heads for the Greasex can, recently designed by a vendor for this new product on a rush order, were often found with slight burrs on the inside rim, and this caused some trouble in fitting the top to the can. An increase in application pressure at the filling head by maintenance adjustment had solved the burr application problem or had at least "forced" the nozzle heads on despite burrs. Purchasing said that they were going to talk to the sales representative of the nozzle head supplier about this the next time he came in.

D. From product design and packaging - the can, designed especially for Greasex, had been contoured to allow better gripping by the user. This change, instigated by marketing research, set Greasex apart from the appearance of its competitors and was seen by the designers to be "significant." There had been no test of the effects of the contoured can on filling speed or filling hydrodynamics from a high-pressured filling head. Hank had a hunch

that the new design was acting as a venturi when being filled, but the packaging designer thought that "unlikely."

E. From manufacturing manager - he had heard about the problem; in fact, Wayne had make a joke about it, bragging about how he beat his production quota to the other foremen and shift supervisors. Wayne was thought by the manufacturing manager to be one of the "best foremen we have ... He always gets his production out." His promotion papers were actually on the manufacturing manager's desk when Hank dropped by. Wayne was being "strongly considered" for promotion to shift supervisor. The manufacturing manager, under pressure from Mr. Morganthal for cost improvements and reduced delivery times, sympathized with Hank but said that the rework area would have just vented with their pressure gauges that Wayne did by hand. "But, I'll speak with Wayne about the incident."

F. From marketing - the introduction of Greasex had been rushed to beat competitors to market and a major promotional/advertising campaign was now underway to increase consumer awareness. A deluge of orders was swamping the order-taking department right now and putting Greasex high on the back-order list. Production "had to turn the stuff out"; even a little off spec was tolerable because "it would be better to have it on the shelf than not there at all. Who cares if the label is a little crooked or the stuff comes out with a little too much pressure. We need market share now in that high-tech segment."

What bothered Hank the most was the safety issue of the high pressure in the cans. He had no way of knowing how much of a hazard the high pressure was or if Wayne had vented them enough to effectively reduce the hazard. The data from the can manufacturer which Mark had showed him indicated that the high pressure which the inspector had found was not in the danger area; but then again the inspector had only used a sample testing procedure to reject the eight cases. Even if he could morally accept that there was no product safety hazard, could he make sure that this never happened again?

Hank, skipping lunch, sat in his office and thought about the morning's events. Last week's seminar had talked about "the role of quality," "productivity and quality," "creating a new attitude," and the "quality challenge" but where had they told him what to do when this happens? He had left a very good job to come here because he thought the company was serious about the importance of quality, and he wanted a challenge. Hank had demanded and received a salary equal to the manufacturing, marketing, and R&D directors and was one of the direct reports to the general manager. Yet he still didn't know exactly what he should or shouldn't do or even what he could or couldn't do.

Case : Earl's Candies

Louise Moffat, packaging buyer for Earl's Candies, was wondering what to do with Longmore Packaging on an order of misprinted boxes. Eric Svenson, sales representative for Longmore, would be in Louise's office within an hour to discuss the situation.

Louise had already spent several hours with marketing and production to see what could be done with the boxes. She was angry, because this had been Longmore's first delivery on a new contract. It had not been easy to persuade marketing and production to switch suppliers. Imperial Packaging had supplied Earl's with all of its box requirements for years to the full satisfaction of marketing and production. However, in Louise's opinion, although Imperial's quality and delivery performance had been fully satisfactory, their price had been high. Therefore, she had finally persuaded marketing and production to let her go out for bids on Earl's Puffs, a highly popular line. Longmore Packaging's bid promised to save Earl's at least $30,000 a year over Imperial's.

Jim Shaw was Longmore's sales representative. He had joined Longmore recently after having worked for years for Domison Bag, a long-term reliable supplier of bags to Earl's. Louise knew Jim Shaw well and had worked on the Puff bid with him. She wondered if he was as technically proficient with boxes as he had been with bags, but Jim had indicated to her he had been pleased with the move to his new firm and was delighted to be able to continue doing business with her.

The first order for Puff's boxes totaled $15,600. Longmore was to get its films from Imperial. Louise had given Jim Shaw physical samples of the Puff boxes. However, Imperial had sent films of an earlier Puff design and Longmore had consequently misprinted the whole order.

The situation had not become apparent until the boxes were delivered to Earl's plant and the filling department foreman discovered the mistake. He had immediately phoned Louise, the plant manager, and the marketing manager because there were a number of Puff's orders outstanding that had to be filled immediately. In view of the necessity to supply Puff's orders, marketing and production agreed they could not wait but would have to put the Puffs into the old design boxes.

Louise had telephoned Jim Shaw to inform him of the error and asked him to come over immediately. She knew that Jim would be upset and had asked marketing and production not to discuss the situation with him. She believed Jim should not know the boxes would be used. It seemed to her that Longmore should shoulder the blame for this incident, even though she wondered if Imperial's action had been totally unintentional. Since she had submitted the correct samples to Jim Shaw, she believed Longmore should have checked the prints they received before running off the whole order. It was difficult for her, however, to establish what penalty, if any, Longmore should be asked to shoulder in this case.

Case : Wash-N-Dry Appliance

The vice-president in charge of manufacturing of the Wash-N-Dry Appliance Company is pondering his problems of employment and production scheduling. He has been receiving static from the union, because employment levels have fluctuated considerably. He replied that sales also fluctuate, so why should the union expect employment to be stable? The union president maintained that employment levels actually fluctuate more than sales and charged that the reason is bad management.

The company board of directors has just held its bimonthly meeting. Among the materials presented to the board were status reports concerning operations, a portion of which is shown in Table 1. The board was upset over the rapid growth in finished goods inventories. Finished goods inventories had increased by almost 42 percent in the last eight weeks, and were even 27 percent higher than a year ago. The comparison with the figures for the previous year at this time was particularly unsettling because current sales levels actually were lower than a year ago. The board chairman instructed the president to take action immediately to reduce finished goods inventories. The president defended himself by pointing to the fact that employees were already being laid off at a rapid rate, and that the employment level was currently almost 26 percent below the level reached only eight weeks ago.

Immediately after the board meeting, the president met with the VP-Manufacturing. The president demanded that finished goods inventory be slashed drastically, even if it meant a plant shutdown. "After all, that was how the auto industry reduced its inventories in the 1974-1975 depression." The union president walked in at that point, having heard the president's order and justification. The discussions that followed involved strike and boycott threats.

Working late that evening, the VP-Manufacturing resolved to "get a handle on this problem" (or else he might lose his position). He assumed that he could muddle through the current crisis, but that he would probably not survive if it happened again. The next morning, he put his staff to work gathering statistics that he hoped might help shed light on the basic problem. He plotted some of these data, as shown in Figure 1.

He knew that he had been operating by moving from one crisis to the next, but even so he was startled by Figure 1. The union president was correct, employment levels seemed to fluctuate more than sales. But the inventory and backlog curves went off the chart.

(a) What is the basic problem?

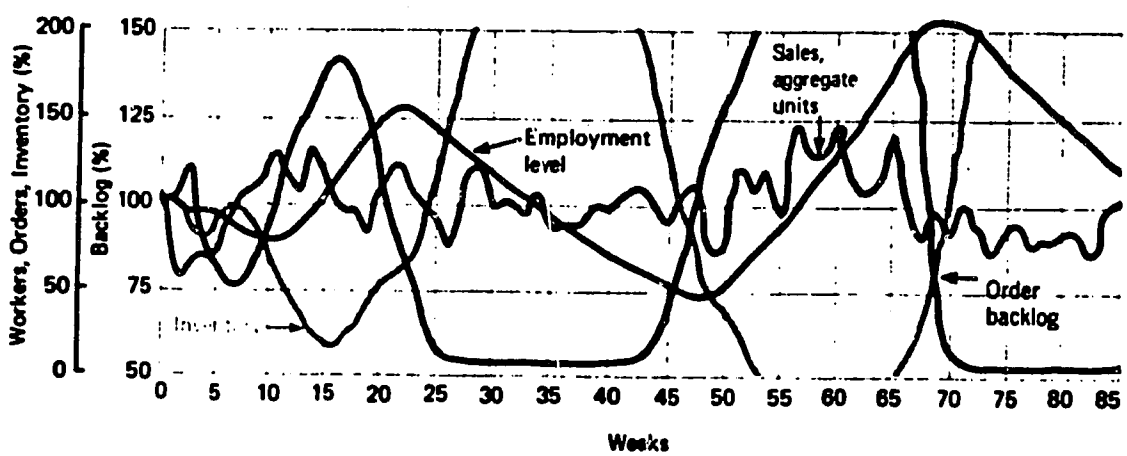
(b) Should the VP-Manufacturing take minimizing of finished goods inventories as his goal? Why or why not?

(c) Should the VP-Manufacturing take the stabilization of employment as his goal? Why or why not?

Table 1: Abstract from Operations Report to Board of Directors

	Current, 80th week	8 weeks ago	52 weeks ago
Order backlog, aggregate units	5,200	5,300	5,400
Finished goods inventory, units	2,500	1,750	2,250
Finished goods inventory, $	$37,500	$26,250	$33,750
Number of employees	750	1,010	625

Figure 1 : Indexes of sales, inventory, backlog, and employment



Process Flow Analysis

Mapping the Flow of the Manufacturing Systems

Process Flow Analysis

- Mapping the manufacturing process
- Value-Based Flow Analysis
- Lead Time Breakdown
- Time-in-Queue Analysis
- Process Flow Analysis in Action
- Evergreen Products

Evergreen Products: A Case Study

Value-Based Process Flow Analysis:
A Problem

The top management of Evergreen Products of East Lansing, MI have called on you to act as a consultant on a problem that is currently plaguing the entire company. Your task is to help management understand what is happening and to offer possible suggestions for improvements.

Evergreen Products serves a market segment consisting primarily of small to medium florists and grocery stores. What Evergreen does is to manufacture a series of decorated containers and care tags for this market segment. The containers are relatively inexpensive to make but they are sold at a high markup (60 percent). The same is true for the tags. Because of the targeted market segment, management feels that it must be able to provide its customers with quick delivery and quality. However, this has not been happening lately.

To understand what happens, it is useful to first follow the course of an order received from the customer. Orders are placed in one of two ways at Evergreen. First of all, customers notice that the stock is getting low. They call into sales with an order. There their order is received by one of three clerks. They give the clerk their customer number, the quantity needed and the type of products needed. Once this information is received, it is recorded on a sheet. At this point, a customer due date is set. This date is dictated by the customer's needs. However, the clerks do try to encourage a due date which is about five working days out (there is no hard and fast rule for this procedure).

Once a day, all sales orders are picked up by a sales account manager. He is responsible for ensuring that all orders are complete and accurately entered and that the customer's credit rating is OK. If it is, the order is put into another pile where it is picked up once every morning. If the order is not acceptable or if there are errors, the order is returned to the person who took the order. That person is then responsible for correcting the problem within a reasonable period of time. When the order has been corrected, it repeats the process. It takes about half a day to move from phone order to sales account manager and about an hour to clear the sales account manager. Forty percent of the orders experience some form of error.

The second way that an order can be placed is through the company's own travelling salesmen. These travel around the central portion of Michigan. They stop in on accounts and check their accounts' inventory stocks. When they see that an item is low, they fill out an order. They then phone the order into the plant (about once every day -- this varies depending on how busy they are). Since each salesperson is rated on the total dollar sales generated, there is a built-in incentive for them to be very concerned about their clients' inventory stocks. The order is then turned over to the sales account manager. At this point, the process is very much identical to the one previously described. On average, the delay for entering orders through the salesman is about half a day (but it can range up to two days).

Once the order clears the sales account manager, it goes to accounting where it first

is put into the day's pile. It is then entered into the accounting system. This is important since this step marks the beginning of the billing process. It takes an average of half a day to clear accounting (but this can range up to 2 days). From here, it goes to the shop floor scheduler.

The shop floor scheduler reviews all orders for accuracy and completeness. Any problem orders are set aside and returned to the sales account manager for correction. About fifteen percent of the orders are typically set aside each day. The rest of the orders released to the shop floor. It typically takes 1½ days to clear the shop floor. The time can vary depending on the time of year. Christmas, St. Valentine's Day, Easter, Mother's Day, and other similar holidays really put a great deal of pressure on the shop floor (which runs on average at 80 percent utilization). The shop floor is held accountable for meeting all quoted customer due dates.

Top Management is concerned over the poor performance of the shop floor. Inventories are high and growing; overtime is excessive; met delivery dates are low; and customer dissatisfaction is growing. They have called you in to see if they should replace the current shop floor planner. Use appropriate analytical tools. You must also address management's concern directly.

Keys to Managing the Process Effectively

- Always state all elements of the process in terms of one unit of measurement
- Differentiate between Demonstrated, Effective and Maximum Capacity
  - Maximum - Designed in, upper limit on capacity
  - Demonstrated - what you see
    - can be affected by level of training, product mix, operator skill, condition of the equipment, and type of jobs.
  - Effective - what management plans for
    - slack capacity used for unplanned demand, maintenance or unanticipated problems
- Identify critical resources (tooling, machinery, material, manpower)

Keys to Managing the Process Effectively

- Know where the bottlenecks are
  - bottlenecks are funnels which limit output
  - can be either stationary or moving
    - stationary indicates a lack of capacity
    - moving indicates a problem with scheduling, product mix, or equipment availability
  - symptoms of bottlenecks
    - build-up or draw down of work-in-process
    - decreasing quality
    - increasing lead times

Keys to Managing the Process Effectively

- Look for interdependencies
  - if two operations are linked, bring them together in time, place and space
- Reduce feedback between where problem is created and where problem is identified
- Recognize that processes change

Mercury Marine

Process Flow in Action

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Questions for the Mercury Marine Video

- How many steps were there in the existing process?
- What was the breakdown of steps between:
  - Move
  - Store
  - Operation
  - Breakdown
- What would you do to improve the process?

Capacity as Capability

- Our flexibility and ability to respond to factors such as:
  - length of runs
  - ease of changeovers
  - schedule stability
  - key success factors
- Capacity defines the capabilities of the firm
- Key Task:
  - Match firm's capabilities with marketing's demands
- Mismatches will:
  - reduce profits
  - create opportunities for competitors
- Role of Product Profiling

Product Profiling

- Must identify three critical traits:
  - Order Winners:
    - Those that help the firm win orders
  - Order Qualifiers:
    - Those that help the firm be considered as a member of the final pool
  - Order Losers:
    - Those traits where poor performance can cause the firm to lose contracts (existing or future)
- Convert these traits into manufacturing needs

Product Profiling: An Example

Traits	Job	Batch	Line
Changeovers	High	-----	Low
Production Runs	Short	-----	Long
Schedule Stability	Low	-----	High
Basis of Competition	Flexibility	-----	Cost
Critical Resource	Labor	-----	Equipment

Example of Order Profiling in Action

- A steel plant was built during the early 1960s. At that time, it was designed to make standard grades of steel in large runs with few changeovers. It was designed to become the most cost effective manufacturer of steel in the market. However, since that time, the demand for that type of steel has dried up. Instead, customers are demanding specialized steel which is run in small batches and is subject to short lead times and frequent customer-initiated changes (in quantity and due dates). Top management has not complained about these changes in demand because the new, specialized steel tends to be more profitable. However, in accepting these orders, profit has gone down, not up. Can you explain what has happened?

Shop Floor Control

Managing the Flow of Work on the Shop Floor

Shop Floor Control: A Self-Assessment Tool

A questionnaire to be used internally

Shop Floor Control Checklist

Instructions[1]

Read over the following questions. Each question requires a simple Yes or No answer. For each question, pick that response which most closely the situation in your company. Remember, this checklist is simply an informative tool. It is not intended to be comprehensive or conclusive.

Questions	Yes	NO
1. Shop delivery performance is 95 percent or better.	—	—
2. Scrap, Salvage and Rework are continuously tracked and there is a conscious effort to identify the underlying causes for these problems and to eliminate them.	—	—
3. Shop floor lead times are either constant or have been falling over time.	—	—
4. There are fewer expediters in the system.	—	—
5. The accuracy of the current manufacturing data base is at least 95 percent or better.	—	—
6. There is now less need for safety stock than there was in the past.	—	—
7. The current manufacturing data base includes in it information concerning tooling and drawings.	—	—

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[1] This checklist has been developed by Steven A. Melnyk of Michigan State University. It is not to be reproduced in any form, electronically or non electronically, without the express written permission of the author. Permission, however, is given to those who wish to use the checklist for evaluating the effectiveness of their shop floor control systems. Permission is given only if the evaluation is not done for paid. The user agrees to acknowledge that the copyright for the checklist remains with the author.

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8. Major errors in the data base (e.g., inventory counts, bills of materials) once identified on the shop floor are corrected within less than 24 hours. — —

9. All schedules released by the planning system are regularly reviewed by the planner for feasibility (in terms of materials, equipment capacity, labor and tooling capacity). — —

10. Inventory records are 95 percent or better. — —

11. Bill of material accuracy is 99 percent or better. — —

12. Access to inventory is strictly controlled. — —

13. Planners want to hear information about potential problems occurring on the shop floor as they occur (i.e., the planners encourage as much early warning as possible). — —

14. Any problems occurring on the shop floor are seen as possible indicators of broader manufacturing/corporate system problems. — —

15. Tooling availability is explicitly considered within the current Shop Floor Control system. — —

16. Shop floor personnel are regularly and actively involved in quality improvement activities such as Quality Circles, suggestion systems or small group improvement activities. — —

17. Problem orders are not as a rule released to the shop floor before the underlying problems are cleared up. — —

18. There is an attempt to release work to the shop floor in such a way as to level the load on the shop floor. — —

19. There is a formal dispatch list which is generated on a daily basis. — —

20. The daily dispatch lists are feasible. — —

21. The dispatching procedures provide the operators with opportunities to rearrange the order sequence to improve efficiency by taking advantage of such developments as common setups. — —

22. Foremen <u>believe</u> the schedules. — —

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23. Operators <u>believe</u> the schedules. _ _

24. Preventive maintenance is a formally scheduled activity within the shop floor control system. _ _

25. Rework and salvage, once it occurs, is formally scheduled within the shop floor control system. _ _

26. All recording of information on the shop floor is done on a transaction-by-transaction basis. _ _

27. Operators can enter comments and observations into the reporting system. _ _

28. Shop floor reporting is reporting is supported by an on-line system. _ _

29. The current computer system supports users by identifying problems and potential alternatives. _ _

30. The reports generated by the computer system are easy to understand and frequently used by shop floor personnel. _ _

31. The reports generated by the computer system are limited to one page. _ _

32. All foremen and operators understand and <u>believe</u> the procedures used in generating the order and operation priorities. _ _

33. Problems flagged on the shop floor are regularly reviewed by a group with representatives from manufacturing, engineering and quality control (to name a few groups). This group determines the short term disposition of the problem and identifies the long term solution. _ _

34. When a problem occurs on the shop floor, there is quick feedback to the affected areas. _ _

35. People on the shop floor are encouraged to look for problems occurring in their areas. _ _

36. Shop floor personnel are measured using a few meaningful performance measures. _ _

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37. Performance is measured on a continuous basis with personnel getting this information rapidly enough so that they can correct poor performance. — —

38. Shop floor personnel understand and agree with the performance measurement system. — —

39. No orders are closed out until any unusual variances have been accounted for. — —

40. The location of any order is always known by schedulers at any point in time. — —

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Shop Floor Control: Defining the Concept

- **Shop Floor Control is:**
  - **a set of activities directly responsible for managing the transformation of planned orders released by the planning system into a set of outputs consistent with the strategic objectives of the firm and the needs of the customer. It governs the very short term detailed planning, execution, and monitoring activities needed to control the flow of orders and information and the effective usage of corporate resources.**

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Shop Floor Control: Old Perspectives

- Shop Floor Control (SFC) is strictly tactical
- SFC is not of interest to planners
- Since every shop floor is unique, every SFC system is unique
- Customers are not interested in SFC
- The most critical tasks in SFC involve:
  - dispatching rules
  - data collection
  - expediting
- Low cost is the best measure of an effective SFC

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Shop Floor Control: New Perspectives

- SFC is the execution side of manufacturing
- SFC is a corporate mirror
- SFC is concerned with efficiency; the planning system with feasibility
- SFC should try to simplify existing processes and to control or eliminate shop floor variability.
- SFC should be highly visibility
- SFC is an early warning system
- SFC is driven to maximize value and reduce waste
  - Value is strategically defined
- SFC is most effective when management expectations are stated in clear and specific terms which reflect how the firm wins and loses orders.

New Perspectives (Cont'd)

- SFC is a resource manager
- SFC provides valuable feedback:
  - performance to the plan
  - validity of the standards (cost, time) being used
  - strengths and weaknesses of the shop floor and the capacity structure
- SFC must blend techniques with respect for people
- SFC is part of the system that we sell to our customer

Why Shop Floor Control?

SFC is responsible for physically producing the goods and services that we sell to our customers

Current major strategies for competition are critically affected by the firm's SFC system:

- Cost
- Quality
- Flexibility
  - process
  - program
  - price-volume
  - innovation

Why Shop Floor Control? (Cont'd)

- Most of the firm's investments are found on the shop floor:
  - machines
  - inventory
  - new technology
  - plant and facilities
- Most managers don't understand the process by which the products are made:
  - Manufacturing constipation
  - "Black Holes"
- The functions of SFC are so important that if it is not formally implemented, the people who need it will see that one is present.
  - the roots of the "informal" system

SFC Objectives

- Execute the MPS in a timely and cost effective manner
- Control shop priorities
- Improve operating efficiencies and quality levels
- Maintain minimum inventory on the shop floor
- Decrease WIP levels
- Help the firm achieve its overall objectives
- Act as the firm's early warning system
- Reduce lead time by identifying and working on all non-value-adding steps
- Reduce and control variances

SFC Functions

- Rank orders in desired priority sequence by work center or process and issue a dispatch list
- Check material, machine, and tooling availability before releasing work to the floor.
- Compare future loads with shop capacity to allow the planners to take the appropriate action for balancing work loads on the floor.
- Control flow of work to the floor so that queues are constant over time.
- Establish dates on orders as milestones to measure progress.
- Track WIP on the shop floor

SFC Functions: (Cont'd)

- Check quantities of parts from operation to operation and initiate revisions to orders if necessary
- Provide timely and accurate feedback on plan activities
- Establish, monitor and control lead times.
- Facilitate continuous improvement on the shop floor.

Critical SFC Tasks

- Order Review/Release
  - Monitoring the movement of orders from the planning system to the shop floor.
- Detailed Scheduling
  - The assignment of shop floor resources to competing orders
    - Shop orders
    - Salvage, rework and scrap
    - Preventive maintenance
    - Tooling
- Data Collection/Monitoring
  - The tracking, recording and storage of information from the shop floor and comparison with pre-determined standards

Critical SFC Tasks (Cont'd)

- Control/Feedback
  - Identification of "out-of-control" situations, their correction and the identification of opportunities for system improvement
    - Expediting
    - Single Minute Exchange of Dies (SMED)
- Order Disposition
  - The process of closing open orders out of the SFC system

Critical SFC Tasks

Major SFC Activities

1. Order Review/ Release
2. Detailed Scheduling
3. Data Collection Monitoring
4. Control/ Feedback
5. Order Disposition

Shop Floor Management Issues

Making things happen on the Shop Floor

Improving SystemPerformance

Some Simple Procedures

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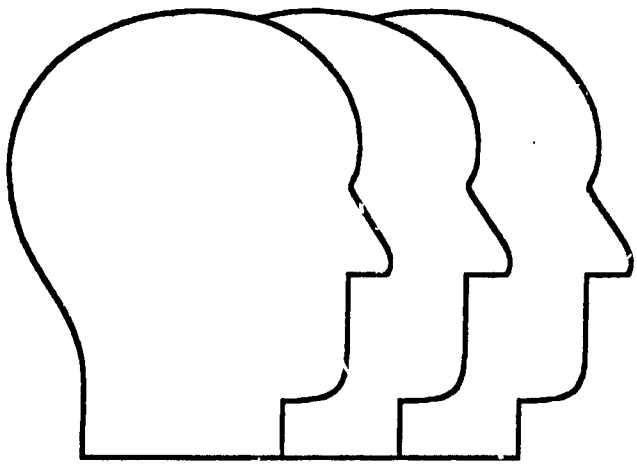


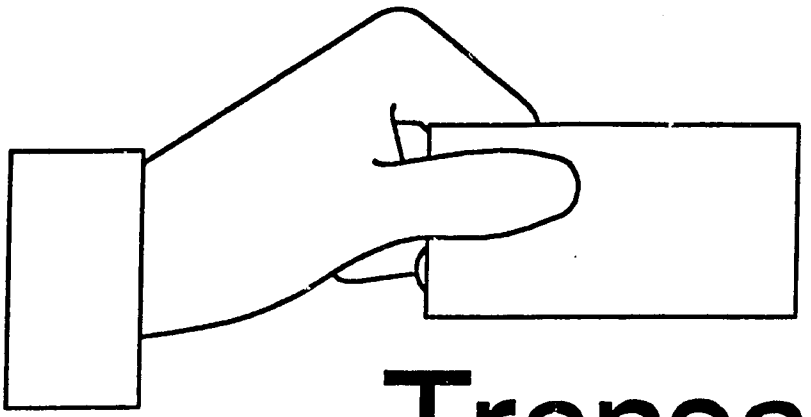
System Discipline

* People do what they have to do when they have to do it.

* People work within the formal system.

* Everyone understands and plays by the same rules of the game.

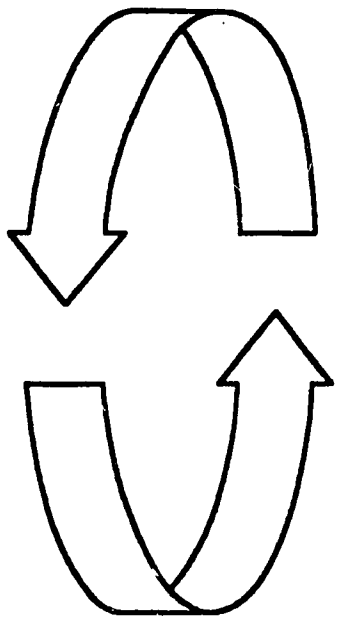
* The system controls everyone -- management and employee.



Transaction Control

* Every bin or pallet in the system must have a work/item ticket. The ticket describes the item or bin completely.
  - what is it?
  - type of item?
  - is the item allocated?
  - status of item?
* Every item has a place and there is always a place for every item.
* Stores are moved only to areas specifically designed to receive them.
* Access to stores is strictly controlled.

* GOOD TRANSACTION CONTROL = GOOD HOUSEKEEPING.

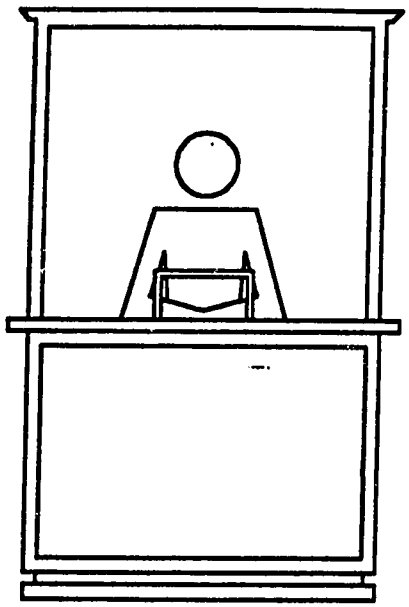


Cycle Counting

* A method of maintaining inventory accuracy

* Minimum level of inventory accuracy:
  - 95%
  - should be better

* Types of Counting Procedures:
  - Perpetual
  - Cycle
  - Quick Cycle Count



Perpetual Systems

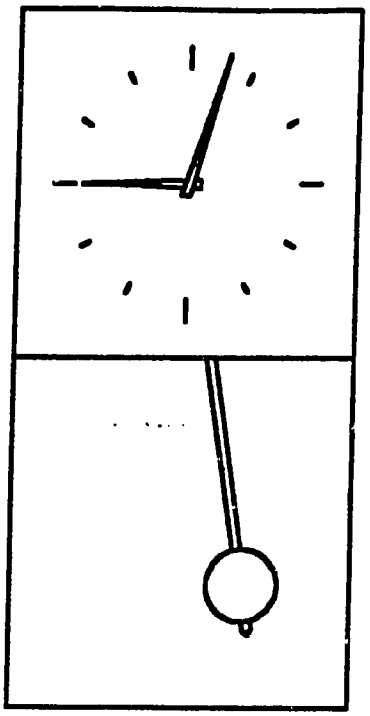
* The movement of items is very tightly controlled.

* Whenever an item moves, that movement is recorded immediately.

* Appropriate for A class items.

* Inventory records always current, accurate and complete.

* Made easier by automated identification.



Cycle Counting

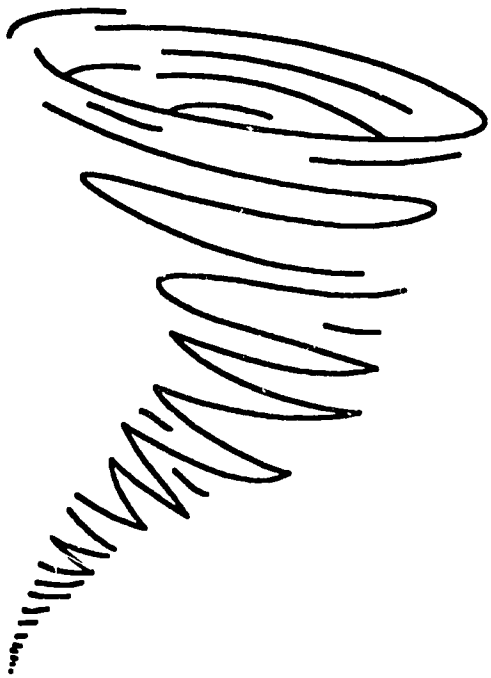
* Periodic audit of inventory

* For example, we try to cycle count all of the items at least once a month.

* Frequency is a function of the importance of the item (use ABC).

* Purpose:
  - establish inventory accuracy
  - spot check accuracy of current records

* Can be used with perpetual



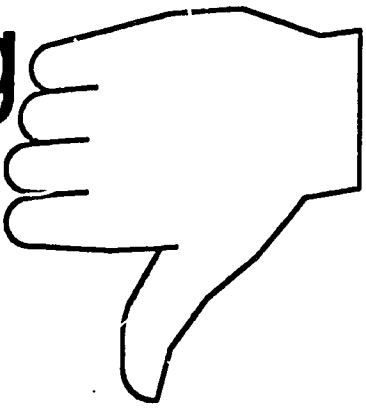
Quick Cycle Count

* Quick and dirty approach

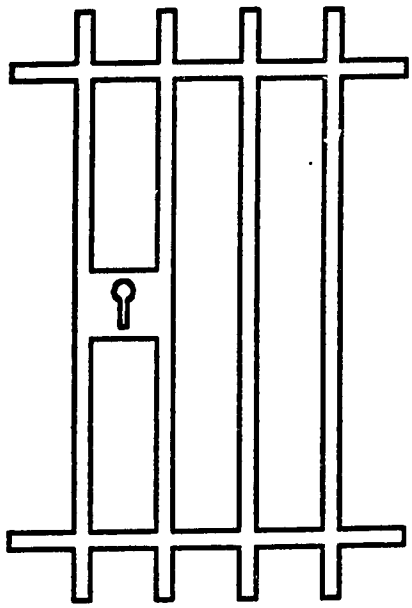
* Monitor the critical items:
  - randomly select bins
  - pick ones which are either low or empty
  - count them
  - compare them with records

* A good spot-checking method.

Reconciling the Numbers



* May want to establish error range.
* Should be done immediately.
* A measure of performance.
* Ensure that you always have the right numbers in the system.
* Should always be done by people responsible.



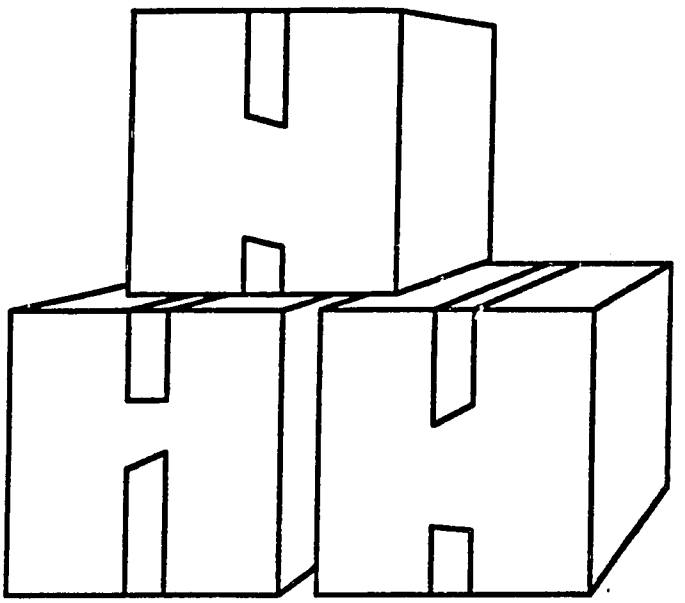
Locked Stockrooms

* An inventory location in which access to the contained parts is strictly controlled.

* A locked stockroom does not require:
  - a physical lock
  - a watch dog

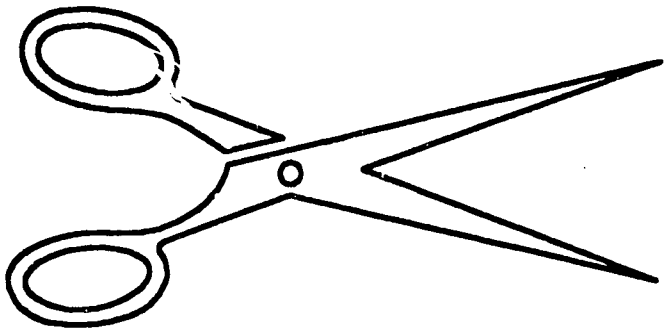
* A locked stockroom does require:
  - a secure location
  - someone responsible for inventory
  - someone measured on control of resources assigned
  - a requisition and release system.

* Required for good inventory accuracy.



Bulk Releases

* Done mainly for C class items
* Also done for MRO items
* Common practice in high volume usage situations
* Release quantities to the shop floor in bulk
* Allow floor to withdraw from bulk
* Re-establish usage through backflushing.
* Simplifies transaction control
* Other options: Kits (K-numbers)
* Example: washers



Simplifying Transaction Control

* Standard containers
* Design racks/levels to simplify counting
* Standard sizes (simplify storage).
* Reusable containers
* Clear external markings
* Automatic identification

Housekeeping

Key to Effective Inventory Control

- Cleanliness is a state of mind, not a physical state.
- Limit space on floor for inventory (the "black hole of Calcutta" syndrome).
- Accountability & Measurement

Developing a Quality Circle/Continuous Improvement Teams

Some Guidelines

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Quality Circles/Continuous Improvement Teams

- Goal:
  - To identify, develop and implement suggestions and programs for improving operations in the system
  - Managed by the employees, NOT management
  - Small improvements, every day
  - Driven by employee identified problems

Implementation Issues

- Understand the difference between employee and management perspectives
  - Employees motivated by concerns over survival, survival, lack of surprises, simplicity, and personal pride.
  - Profit and cost control are often not important issues
  - Trust is not always present from the outset
  - Employees will identify those things which bother them the most
  - Goal: To make these issues and management's concerns one and the same.

Teams: Continued

- Training of employees important
  - Problem solving
  - Process Flow Analysis
- Pick the "right" members for the first team
  - Don't pick the brightest or the ones who want change the most
  - Pick those who are important to the process
  - Pick those who represent the typical employees
  - Avoid taking too big an inital bite
  - Be patient at first

Teams Continued

- Differentiate between symptoms, problems and solutions
  - Symptoms
    - something that indicates the existence of something else
    - often indicated by words such as 'too much' or 'too late' or 'too little'
  - Problems
    - something that brings about an effect or result
    - not the same as causes
    - often uncovered by the 5 WHYS
  - Solution
    - action or process of solving a problems
    - tipped off by the word 'need'
  - We often see many symptoms but few problems

Teams Continued

- Look for Variance
  - Monitor processes and generate control charts
  - Pick those areas where we have the high variance or changes
  - Look for those processes or activities that are very difficult to consistently predict
- Building for Success
  - Pick a project that succeeds
  - Pick a project that succeeds
  - Pick a project that succeeds
- Picking the right project
  - short time frame
  - limited data required
  - measurable results
  - limited scope

Performance Measurement in a World Class Setting

- Traits of an effective performance measurement system
  - Relate directly to how the firm competes in market
  - Use nonfinancial measures
  - Vary between locations
  - Change over time as needs change
  - Simple and Easy to use
  - Provide fast feedback to operators and managers
  - Intended to foster improvement rather than just monitor

Examples of Good Performance Measures

- Delivery performance
  - Vendor Delivery Performance Charts
  - Production Schedule Adherence
  - Order and Schedule Changes
  - Customer Service Levels
  - Lost Sales Analysis

Performance Measures Continued

- Process Time
  - Manufacturing Cycle Times
  - Delivery:Production (D:P) Ratios
  - Setup Times
  - Material Availability
  - Distance of material movement during production
  - Machine up-time

Performance Measures Continued

- Production Flexibility
  - Percentage of standard, common, and unique parts within the bills of material
  - Number of different production processes
  - Postion within the production process where the products are differentiated
  - Number of levels in the manufacturing bill of materials
  - Number of new products launched each year and the time taken to launch them
  - Cross-training of production personnel

Performance Measures Continued

- Quality
  - Incoming quality from suppliers
  - Production quality, including the use of statistical process control charts, and direct measures of the customer's satisfaction
  - Data accuracy within the system including inventory accuracy, bill of materials accuracy, routing accuracy and forecast accuracy

REMEMBER:

If you don't measure it, it never happened

MRP DEFINITION

AN MRP SYSTEM IS AN INFORMATION SYSTEM USED TO PLAN AND CONTROL DEPENDENT DEMAND INVENTORIES AND TO SCHEDULE A MANUFACTURING COMPANY

ELEMENTS OF AN MRP SYSTEM

MASTER SCHEDULE

BILL OF MATERIALS

INVENTORY RECORDS

PURCHASING

CAPACITY PLANNING

SHOP FLOOR CONTROL

BENEFITS

LESS INVENTORY

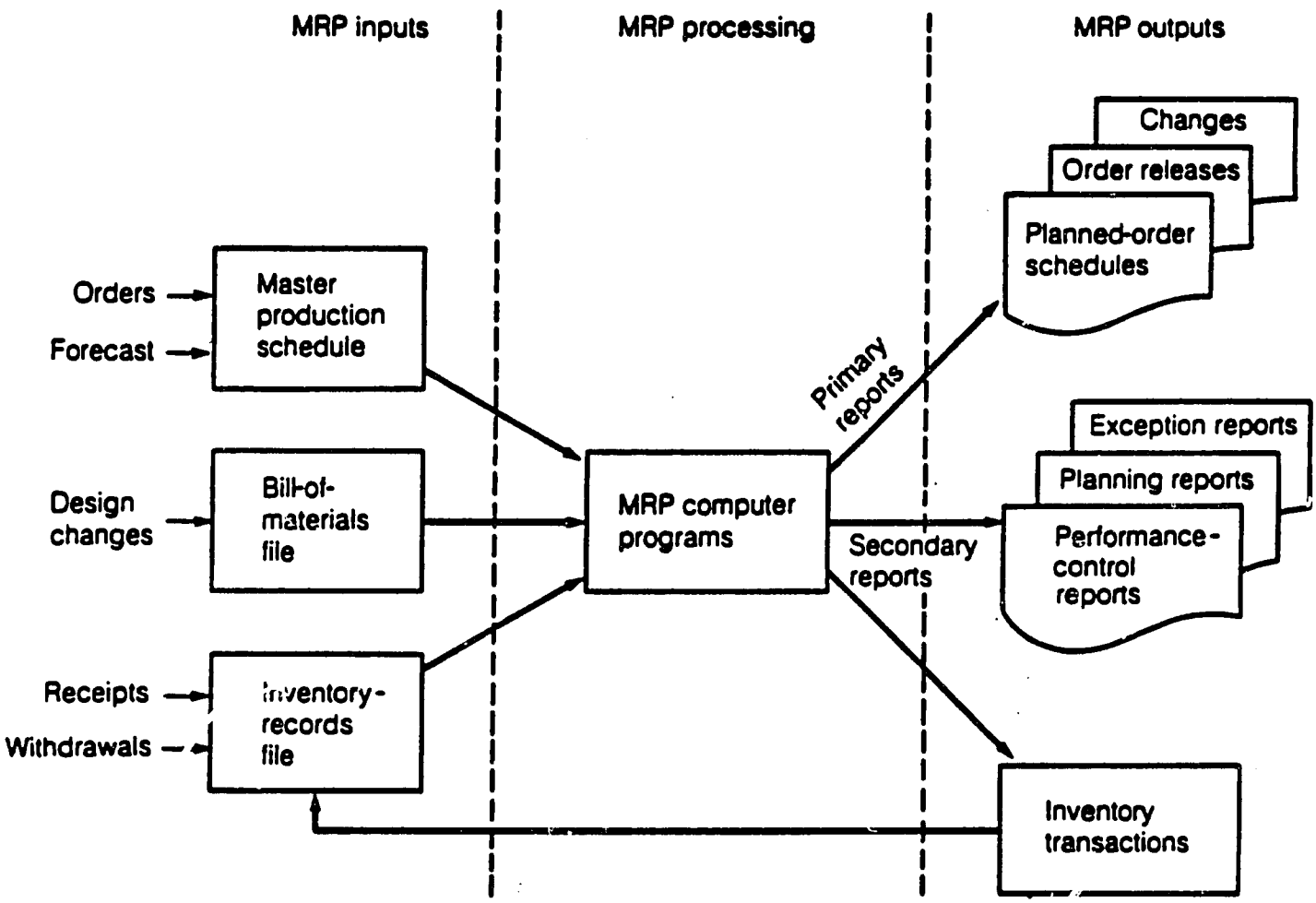
BETTER CUSTOMER SERVICE

MORE CAPACITY OR THROUGH-PUT

LOWER COSTS

BETTER MORALE

Overview of MRP



IMPLEMENTATION

MANAGEMENT SUPPORT

A PLAN

EDUCATION

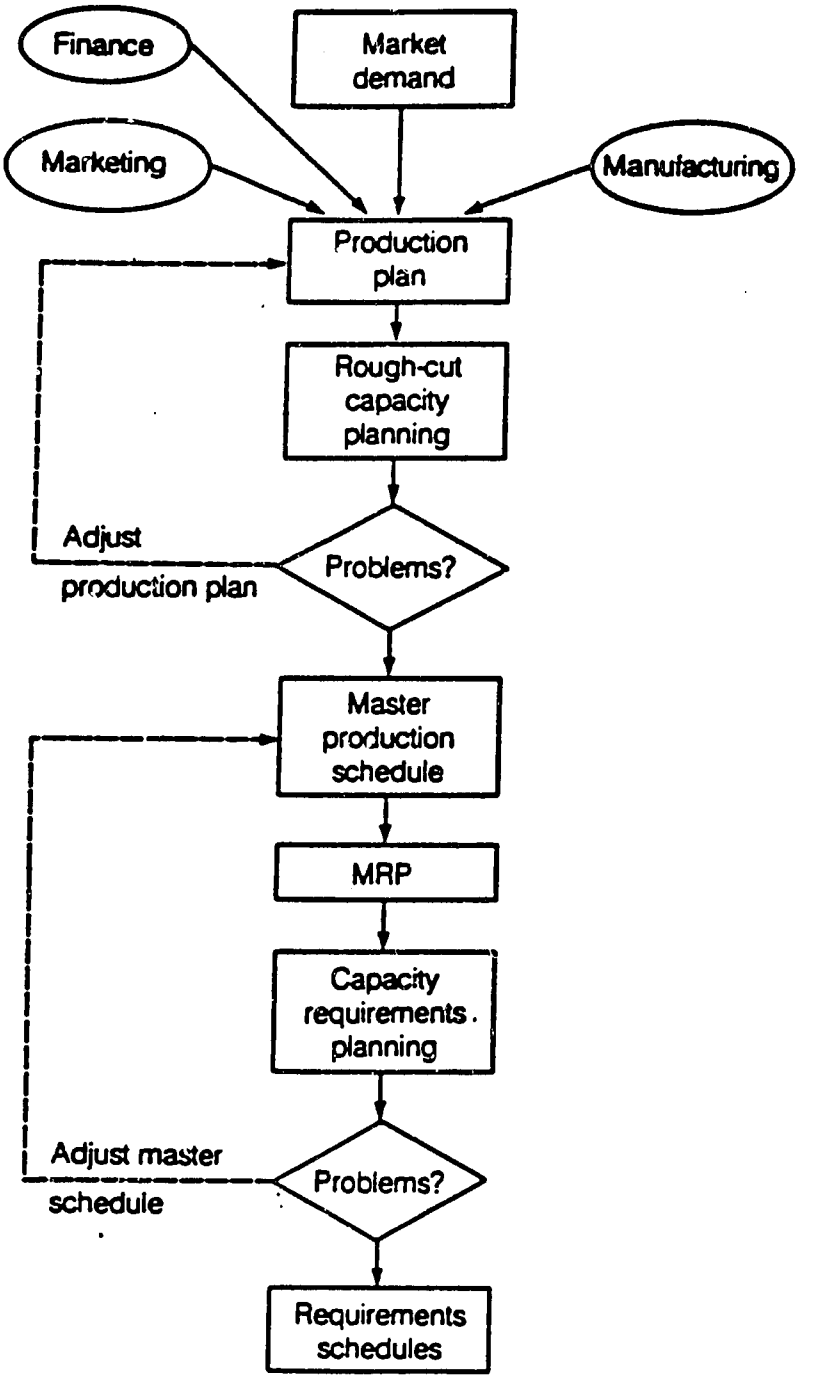
ACCURATE DATA

COMPUTER SYSTEM

ISSUES IN MRP

- MASTER PRODUCTION SCHEDULE
- DATA ACCURACY
- LOT SIZING
- CAPACITY PLANNING
- SAFETY STOCK
- SAFETY LEAD TIME
- IMPLEMENTATION

An Overview of MRP II



MRP FOR SERVICES

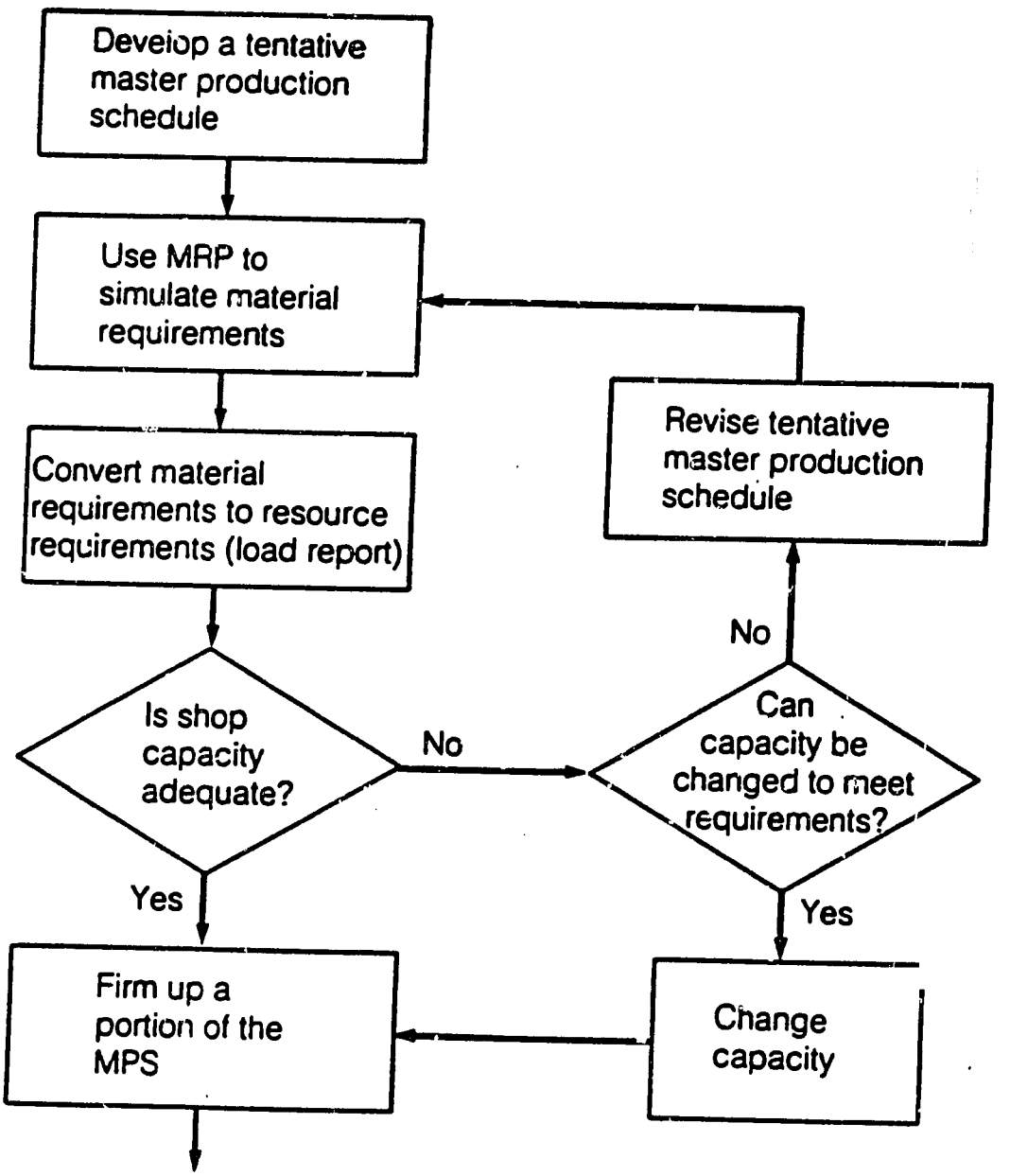
EXPLOSION OF A SCHEDULE INTO PERSONNEL REQUIREMENTS

EXAMPLE: TRANSLATING CASE LOADS INTO SKILLS REQUIRED

EXAMPLE: NSP - COMPUTE REQUIREMENTS (PEOPLE,EQUIPMENT,MATERIALS) FOR NEW SERVICE

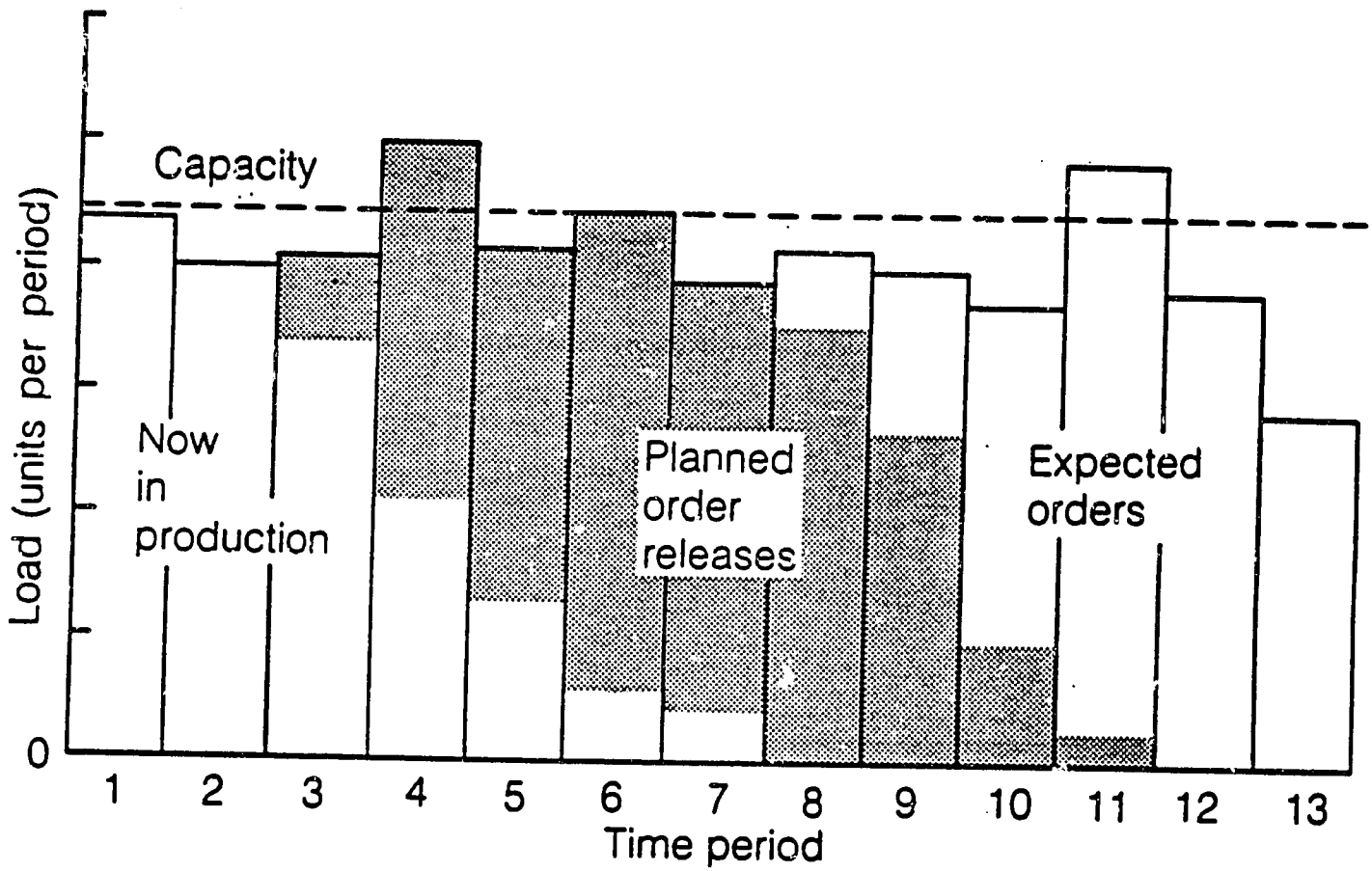
USE OF THE DEPENDENT DEMAND PRINCIPLE

Using MRP to Assist in Planning Capacity Requirements



MRP	Materials Requirements Planning
MCP	Materials Capacity Planning
AMAPS	Advanced Manufacturing Accounting and Production Systems
MRP II	Manufacturing Resources Planning
MRP III	MRP II + Workforce Planning

A Hypothetical Department Load Report



IMPLEMENTATION

MANAGEMENT SUPPORT

A PLAN

EDUCATION

ACCURATE DATA

COMPUTER SYSTEM

Practice Problem

A distributor carries a particular item under the following general conditions:

Sales = 10 cases per week
Ordering cost = $10 per order
Carrying charge = 30% per year
Item cost = $60 per case in lots of 25 cases
$57 per case in lots of 50 cases

Is it more economical for this distributor to order in lots of 25 or 50 cases.

Practice Problem

Find the economic order quantity and reorder point, given the following data:

Annual demand = 1,000 units
Average daily demand = 1,000/365
Ordering cost = $5 per order
Holding cost = $1.25 per unit per year
Lead time = 5 days
Cost per unit = $12.50

For this item, state the commensurate ordering rule. What is the annual cost of this item?

Practice Problem

A grocery store carries a particular brand of coffee which has the following ordering information:

Sales = 10 cases per week
Ordering cost = $10 per order
Carrying charge = 30% per year
Item cost = $60 per case

a. How many cases should be ordered at a time?
b. How often should the coffee be ordered?
c. What is the annual ordering cost?
d. What is the annual carrying cost?
e. What is the total annual cost of the coffee?

IGLS Tobacco GmbH

Walter Schertler, Managing Director of IGLS Tobacco in Austria, re-read the telex from the United States. IGLS' parent company had just granted Walter authority to spend $10 million on an equipment automation project to increase plant productivity. He thought to himself that he ought to quickly submit the proposal for a new factory information system while they were still in a mood to give away money.

As he prepared to tell his manufacturing staff about the corporate approval, he thought ruefully of the last major communication he had received from the U.S. In the world-wide plant evaluation report, his plant had ended up next to the bottom on two of the key manufacturing measures: productivity (as measured in billions of cigarettes per direct labor hour) and equipment utilization. The only thing that had kept him from being dead-last in both categories was start-up difficulties with a new plant in Australia. It was, therefore, with a sense of urgency that he left his office and headed for Manufacturing Engineering.

The Market

IGLS Tobacco had served the European Free Trade Association (EFTA) countries (Denmark, Sweden, Austria, etc.), since the formation of the European Economic Community (EEC). Most of the EFTA countries had small populations and high tourist traffic. This required the plant to produce as many as 70 different brands in several packaging/filter combinations each year. As Walter said, "We're a lot different than most of the American plants. They concentrate on one or two brands in extremely high volumes. We produce a large variety of cigarettes for highly variable and relatively small demand in many different countries."

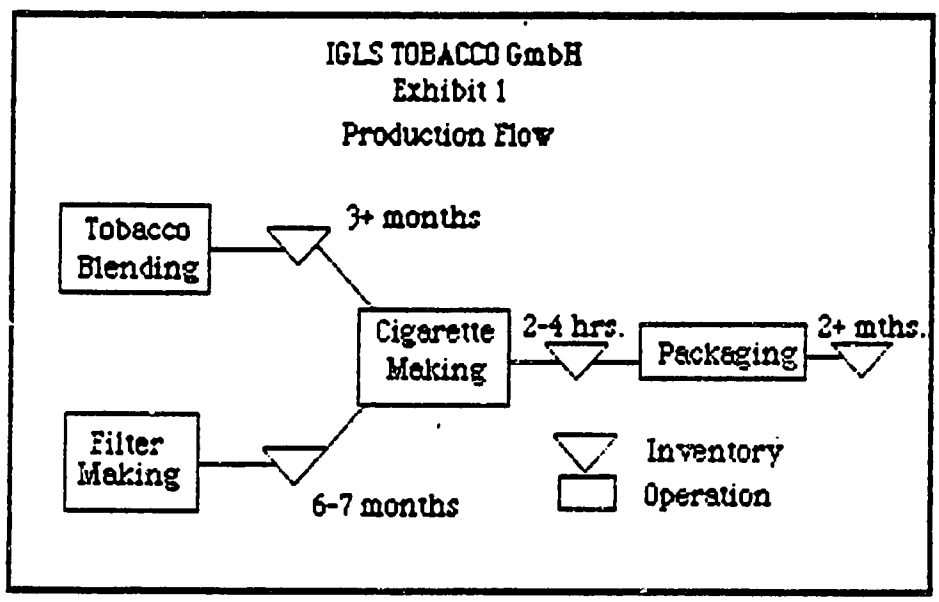
In addition to serving the EFTA market, the company bid on large contracts outside of Europe, primarily in the Middle East and Eastern Europe. This business had recently averaged 30% of sales. Despite this activity, the volume of sales at IGLS had decreased from about 20 to 12.5 billion cigarettes per year in the last five years.

Despite this decline in volume, plant productivity and quality had been improving. Walter was most proud of the quality improvements. The industry scale for cigarette quality ranged from 100 - 0, with 0 being the high end. The plant had improved their index from 30 to 10 over the past 5 years and was the quality leader on the plant evaluation report. Some of

the competition have quality indexes as poor as 60. Walter commented, "With our quality we are the only plant in the company that can meet the Japanese market requirements. We are planning to send them our first batch of cigarettes later this year. We are confident that they will be approved for the Japanese market. Even a small portion of that market would mean greatly increased volumes for our plant."

The Manufacturing Process

The process for manufacturing cigarettes at the IGLS plant is illustrated in Exhibit 1. In the industry the first part is referred to as the "primary process." It is where the tobacco is blended and prepared in batches for later use in making cigarettes. A particular flavor is made by blending various tobacco leaf types and additives. There are more flavors than brands since the blend can be different for the same brand in different countries. The various blends are mixed and then "cured" before being moved into an inventory prior to cigarette making. About 95 people are required to man the primary process.



The "secondary process" begins with filter making. The filters are produced on highly automated machines and stored in inventory prior to the cigarette manufacturing process. The filter making machines average about 35% utilization and are manned with a staff of 45 people. The machines require 2 to 4 hours of setup for minor changes and can take up to a month for a major change in dimension or filter design.

The last part of the secondary process is the actual cigarette making and packaging. There are 300 people working in this area. The recently

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approved automation project and the desired factory information system would impact this area. The plant currently has 3 generations of cigarette making equipment as shown in Exhibit 2. The $10 million project includes another third generation machine. Other aspects of the project involve integrating the cigarette making and packaging machines to reduce handling and increase productivity. The average utilization of the machines is quite low, except for the high volume machine. Setups on the machines could range from hours to a month depending on the complexity.

IGLS TOBACCO GmbH
Exhibit 2
Cigarette Making Equipment Data

	Equipment Generation		
	1	2	3
Machine Speed *	1.5 - 3,000	4- 5,000	8,000
Number of machines	30	15	1
Utilization (%)	20	50	85

*cigarettes/minute

The packaged cigarettes are stored in inventory to await final shipment to customers. There is currently more than a two month supply, together with a 6 to 7 month supply of filters and 3 months worth of blended tobacco. Walter has been under significant pressure to reduce inventories, although his is not the worst plant.

The Future

Walter reflected on the difficulty of his task. "We're very anxious to get another high-speed machine in the plant, even though it is a major capital investment. I wish I could sell some of our old equipment, but there is so much first and second generation equipment on the market that you can hardly give it away.

"We must do something about productivity. Frankly, however, it does make me very angry to see what happens at headquarters. We make improvements in productivity and my overhead allocations increase to wipe them out. It really bothers me to see my efforts eaten up by increasing the staff in the United States. But if we can get into the Japanese market, that volume would do wonders for our numbers."

Minicase - Inventories

The production of wooden crates has compounded the inventory management problems at Hornet Manufacturing Co. Within a limited storeroom, the variety of different materials needed must be controlled in a more effective manner. Currently, raw materials are stored on one side of the storeroom while finished crates are stored on the other side. The most pressing problem is one of space in that the finished crates require a tremendous amount of space.

[What type of an inventory policy does Hornet require? Why? What are the costs associated with Hornet's inventory management? What types of inventory records should Hornet develop for handling the inventory it must have? What information should Hornet maintain in its inventory records? What special considerations are there in physically measuring or counting the inventory?]

After determining the large value of the inventory required for producing the required number of packing crates, Hornet has decided to implement an EOQ system.

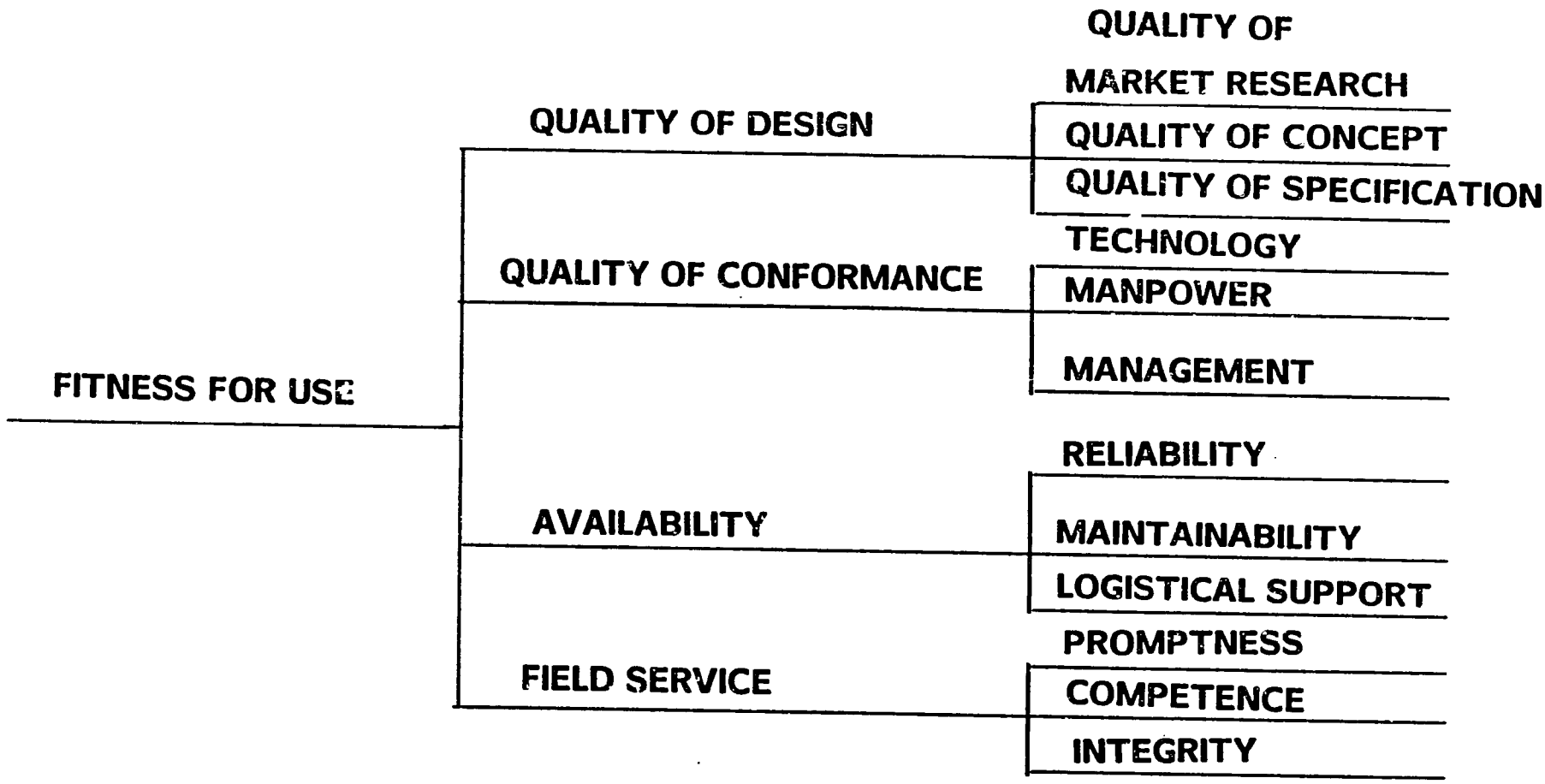
[Is a stockout possible? Why? What are the consequences? Should a single or multiple vendors be used? Why?]

ESSENTIALS OF QUALITY

WHAT QUALITY MEANS

- DIFFICULT TO GIVE AN ALL-INCLUSIVE DEFINITION
- ENCOMPASSES
  - -- "CUSTOMER SATISFACTION"
  - -- "VALUE TO CUSTOMER"
  - -- "SPECIFICATIONS"
  - . . . ETC.
- A DEFINITION (FITNESS FOR USE)

  "THE EXTENT TO WHICH A PRODUCT OR SERVICE CONFORMS TO ITS SPECIFICATIONS <u>AND</u> CUSTOMER SPECIFICATIONS."



DIFFERENT TYPES OF QUALITY

FITNESS FOR USE (JURAN)

IS BASED ON

TECHNOLOGICAL (E.G., DESIGN, PERFORMANCE)

PSYCHOLOGICAL (E.G., STATUS, AESTHETICS)

CONTRACTUAL (E.G., GUARANTEE PROVISIONS)

ETHICAL (E.G., HONESTY, TRUTH IN ADVERTISING)

EVOLUTIONARY (E.G., RELIABILITY, AVAILABILITY)

CHARACTERISTICS

QUALITY HAS BOTH <u>PERCEIVED</u> (QUALITATIVE) AND <u>SPECIFIC</u> (QUANTITATIVE) ATTRIBUTES

E.G., AIR CONDITIONING SYSTEM IN A CAR

SPECIFIC: SYSTEM MAINTAINS TEMPERATURE WITHIN $\pm 3^{\circ}$ F

PERCEIVED: AIR TEMPERATURE SEEMED "JUST RIGHT" AS OPPOSED TO "TOO COOL" OR "TOO WARM"

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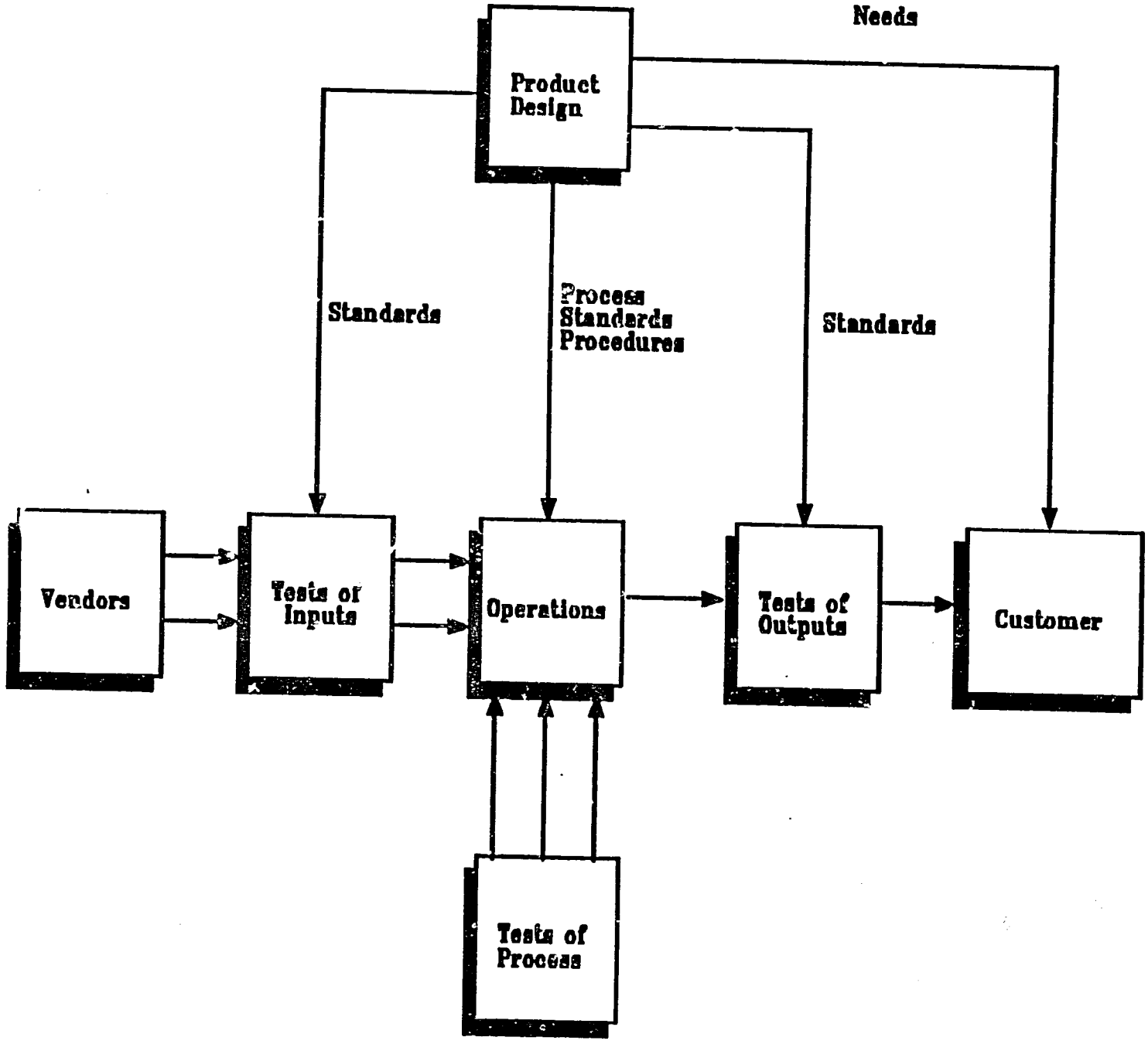


QUALITY CONTROL POINTS

22.

COST OF QUALITY

- FAILURE COSTS
- DETECTION COSTS
- PREVENTION COSTS

TO REDUCE (AVOID) THESE COSTS A FIRM MUST PRODUCE THE PRODUCT OR DELIVER THE SERVICE CORRECTLY THE FIRST TIME AND IN EVERY INSTANCE

MANAGEMENT IS RESPONSIBLE FOR 80% OF QUALITY PROBLEMS

ELEMENTS IN THE COST OF QUALITY

FAILURE COSTS	DETECTION COSTS	PREVENTION COSTS
External failure costs:	Process capability measurement (e.g., control charts)	Design reviews
Consumer affairs (dealing primarily with customer complaints about quality)	Product acceptance	Engineering drawing checks
Field service (mostly repair of what should have worked)	Prototype inspection and tests	Engineering quality orientation program
Product liability (insurance and settlements)	Receiving inspection and tests	Engineering specifications reviews
Product returns, recalls, and corrective action costs	Supplier surveillance	Preventive maintenance
Warranty costs	Work-in-process and finished goods testing and inspection	Process capability studies
Internal failure costs:		Product qualification
Downtime due to defects		Quality audits
Engineering change orders		Quality orientation programs
Purchasing change orders		Supplier evaluations
Redesign		Supplier quality seminars
Retesting		Tool and machines control
Rework in factory or service operations		Worker training and cross-training
Scrap		

IMPROVING QUALITY

- JAPANESE MANUFACTURING COMPANIES VIEW QUALITY AS A HOLISTIC CONCEPT, A WAY OF THINKING THAT PERVADES THE ENTIRE ORGANIZATION

- STATISTICAL METHODS

- CHANGING ORGANIZATIONAL ATTITUDES; MAKE PERFECTION A STANDARD INSTEAD OF A GOAL

- "ZERO DEFECTS" DOES NOT MEAN "DO THE YOU CAN!" EVERYONE IS EXPECTED TO PRODUCE WITH ZERO DEFECTS OR CHANGE THE PROCESS SO THAT ATTAINMENT OF ZERO DEFECTS IS POSSIBLE

- IDENTIFY AND REMOVE ALL CAUSES OF ERRORS → ZERO DEFECTS

- ZERO DEFECT APPROACH ORIGINATED IN AEROSPACE INDUSTRY IN THE 1960s

ZERO DEFECTS

SEMICONDUCTOR INDUSTRY EXAMPLE

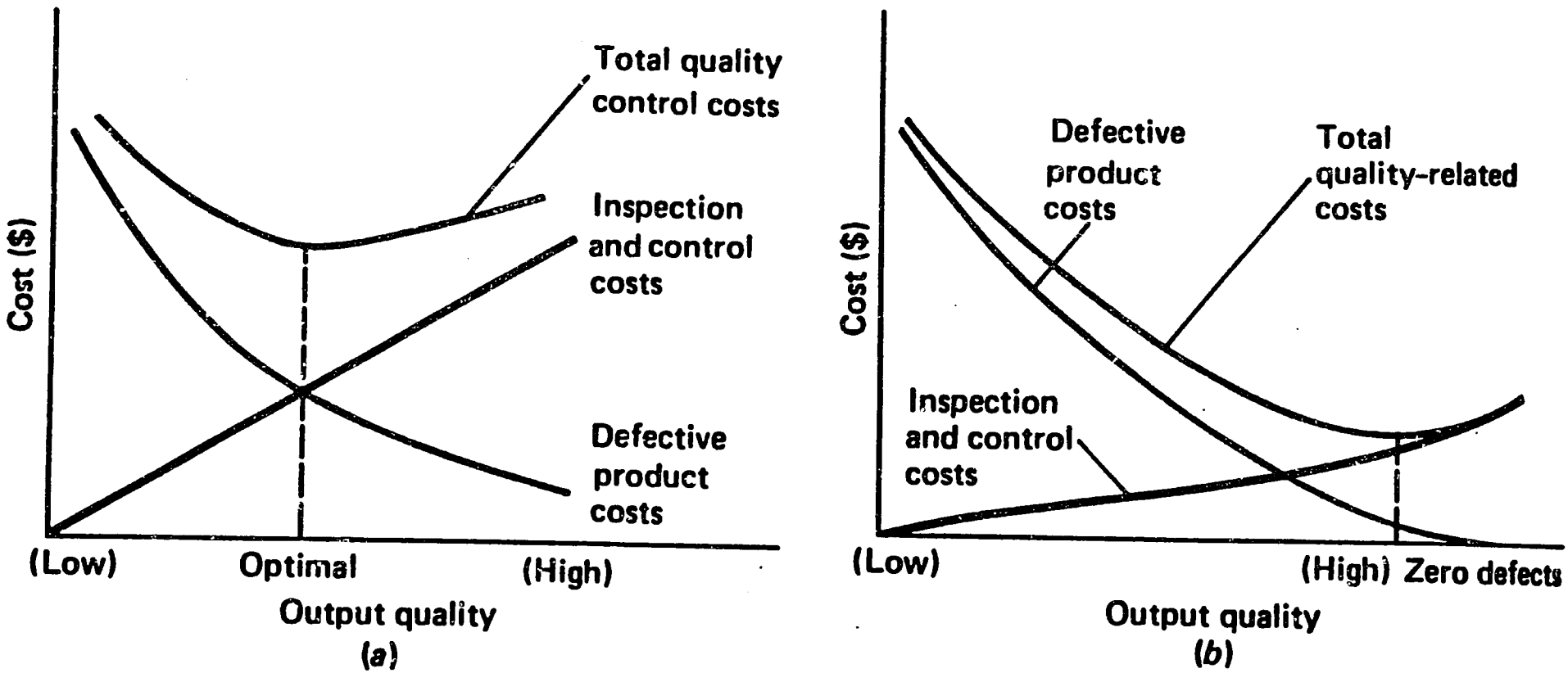
CHIP DEFECTS = f (STATIC ELECTRICITY, TEMPERATURE, DUST, ABRASION, ETC.)

THROUGH STRICT QUALITY CONTROL PROCEDURES THE JAPANESE ACHIEVED ZERO DEFECTS ENABLING THEM TO CAPTURE

40% OF MARKET FOR 16K CHIPS

70% OF MARKET FOR 64K CHIPS

90% OF MARKET FOR 256K CHIPS



QUALITY COSTS UNDER (a) TRADITIONAL AND (b) ZERO-DEFECT PROGRAMS

MANAGING ATTITUDES TOWARD QUALITY

- DEFECTS ARE NOT THE CAUSE FOR BLAME BUT A CALL TO ELIMINATE CAUSES

- QUALITY WILL NOT BE SACRIFICED TO ACHIEVE COST OR DELIVERY GOALS

- IDENTIFY AND REPORT COST OF QUALITY (AS A PERCENTAGE OF SALES OR COST OF GOODS SOLD)

- EVALUATE MANAGEMENT ON COST-OF-QUALITY PERFORMANCE

- CHANGE ORGANIZATIONAL STRUCTURE - GIVE QUALITY ASSURANCE PROMINENCE

TRADEOFFS IN QUALITY COSTS

Range of appraisal costs (dollars per unit)	Range of prevention costs (dollars per unit)								
	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20
0.60	20.05	20.29	20.18	19.40	15.90	12.22	10.09	9.82	10.22
0.80	20.40	20.64	20.54	19.78	16.34	11.72	10.62	10.36	10.77
1.00	20.52	20.77	20.69	19.96	16.63	12.16	11.11	10.87	11.28
1.20	20.20	20.46	20.42	19.77	16.66	12.47	11.51	11.31	11.73
1.40	18.08	18.40	18.47	18.03	15.58	12.25	11.56	11.50	11.95
1.60	15.17	15.56	15.77	15.62	14.02	11.79	11.46	11.53	12.06
1.80	14.62	15.03	15.29	15.23	13.91	12.03	11.81	11.99	12.48
2.00	14.63	15.06	15.34	15.32	14.14	12.44	12.28	12.48	12.98
2.20	15.09	15.52	15.80	15.80	14.64	12.98	12.83	13.04	13.54

Source: Whirlpool, *Total Quality Assurance: Total Cost of Quality*, May 1978, p. 2.

CROSBY PROGRAM

1. OBTAIN THE COMMITMENT OF MANAGEMENT.
2. ESTABLISH A QUALITY IMPROVEMENT TEAM.
3. TAKE QUALITY MEASUREMENTS.
4. ESTIMATE THE COST OF QUALITY.
5. SPREAD QUALITY AWARENESS.
6. ENCOURAGE CORRECTIVE ACTION.
7. ESTABLISH AN AD HOC COMMITTEE FOR THE ZERO DEFECTS PROGRAM.
8. TRAIN SUPERVISORS.
9. HAVE A ZERO DEFECTS DAY.
10. SET GOALS.
11. REMOVE THE CAUSES OF ERRORS.
12. RECOGNIZE ACHIEVEMENTS.
13. ESTABLISH A QUALITY COUNCIL.
14. DO IT OVER AGAIN.

Deming's 14 Points

1. Create constancy of purpose toward improvement of product and service with a plan to become competitive and to stay in business. Decide whom top management is responsible to.
2. Adopt the new philosophy. We are in a new economic age. We can no longer live with commonly accepted levels of delays, mistakes, defective materials, and defective workmanship.
3. Cease dependence on mass inspection. Require, instead, statistical evidence that quality is built in. (*Prevent* defects rather than *detect* defects.)
4. End the practice of awarding business on the basis of price tag. Instead, depend on meaningful measures of quality, along with price. Eliminate suppliers that cannot qualify with statistical evidence of quality.
5. Find problems. It is management's job to work continually on the system (design, incoming materials, composition of material, maintenance, improvement of machine, training, supervision, retraining).
6. Institute modern methods of training on the job.
7. The responsibility of foremen must be changed from sheer numbers to quality . . . , [which] will automatically improve productivity. Management must prepare to take immediate action on reports from foremen concerning barriers such as inherited defects, machines not maintained, poor tools, fuzzy operational definitions.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production that may be encountered with various materials and specifications.
10. Eliminate numerical goals, posters, and slogans for the work force, asking for new levels of productivity without providing methods.
11. Eliminate work standards that prescribe numerical quotas.
12. Remove barriers that stand between the hourly worker and his right to pride of workmanship.
13. Institute a vigorous program of education and retraining.
14. Create a structure in top management that will push every day on the above 13 points.

W. Edwards Deming, *Quality, Productivity, and Competitive Position* (Cambridge, Mass.: MIT, Center for Advanced Engineering Study, 1982), pp. 16–17.

1. CONVINCE OTHERS THAT A BREAKTHROUGH IS NEEDED.

2. IDENTIFY THE VITAL FEW PROJECTS (INVOLVES PARETO ANALYSES).

3. ORGANIZE FOR A BREAKTHROUGH IN KNOWLEDGE.

4. CONDUCT AN ANALYSIS TO DISCOVER THE CAUSE(S) OF THE PROBLEM.

5. DETERMINE THE EFFECT OF THE PROPOSED CHANGES ON THE PEOPLE INVOLVED, AND FIND WAYS TO OVERCOME RESISTANCE TO THESE CHANGES.

6. TAKE ACTION TO INSTITUTE THE CHANGES, INCLUDING TRAINING OF ALL PERSONNEL INVOLVED.

7. INSTITUTE APPROPRIATE CONTROLS THAT WILL HOLD THE NEW, IMPROVED QUALITY LEVEL BUT NOT RESTRICT CONTINUED IMPROVEMENT--PERHAPS THROUGH ANOTHER BREAKTHROUGH SEQUENCE.

ISHIKAWA'S STATISTICAL METHODS

I. Elemental Statistical Method
   A. Pareto analysis (vital few versus trivial many)
   B. Cause-and-effect diagram, also known as the *fishbone chart* (this, Ishikawa points out, is not a true statistical technique)
   C. Stratification
   D. Check sheet
   E. Histogram
   F. Scatter diagram
   G. Graph and Shewhart control chart, also called a *statistical process control (SPC) chart.*

II. Intermediate Statistical Method
   A. Theory of sampling surveys
   B. Statistical sampling inspection
   C. Various methods of statistical estimation and hypothesis testing
   D. Methods of utilizing sensory tests
   E. Methods of experiment design

III. Advanced Statistical Method (using computers)
   A. Advanced experimental design
   B. Multivariate analysis
   C. Operations research methods

Source: Adapted from Kaoru Ishikawa, *What Is Total Quality Control? The Japanese Way*, trans. David J. Lu (Englewood Cliffs, N.J.: Prentice-Hall, 1985), chap. XII (TS156.I8313).

APOLLO MOTOR COMPANY, OMAHA PLANT

THE OMAHA PLANT OF THE APOLLO MOTOR COMPANY HAD THE WORST QUALITY RATING OF ANY OF THE COMPANY'S PLANTS. BESIDES, LABOR RELATIONS WERE EXCEEDINGLY ACRIMONIOUS AND THE PLANT WAS FILTHY. ATTITUDE SURVEYS OF THE WORKFORCE INDICATED EXCEEDINGLY LOW MORALE. IT WAS CLEAR TO MIKE GARRETT, THE NEW PLANT MANAGER, THAT WITHOUT SOME IMPROVEMENT IN PRODUCTIVITY AND QUALITY THE PLANT WAS SURE TO BE CLOSED WITHIN A YEAR.

THE PLANT HAD BEEN MAKING PICKUP TRUCKS AND GARRETT KNEW THAT A NEW MODEL OF PICKUP TRUCK WAS ON THE DRAWING BOARDS AT APOLLO MOTOR'S DESIGN CENTER. THE PLANT THAT WOULD ASSEMBLE THIS PICKUP TRUCK HAD NOT YET BEEN CHOSEN, BUT GARRETT THOUGHT THAT IF THE OMAHA PLANT COULD SOMEHOW SHOW SIGNIFICANT QUALITY IMPROVEMENT, IT COULD BE CHOSEN.

THE TRICK, OF COURSE, WAS HOW TO DO IT. HOW COULD HE TURN AROUND THIS PLANT? HOW COULD HE INSTILL QUALITY IN THE WORK DONE THERE? HOW SHOULD HIS JOB CHANGE, HOW SHOULD THE JOB OF HIS SUPERVISORS CHANGE, HOW SHOULD THE JOBS OF THE WORKERS CHANGE? IF THE OMAHA PLANT WAS TO SHOW IMPROVEMENT, IT HAD TO DO SO SOON.

EVALUATING PRODUCT DESIGN

- PERFORMANCE
- FEATURES
- RELIABILITY
- DURABILITY
- SERVICEABILITY
- AESTHETICS

-- A PRODUCT MAY BE UNDERDESIGNED OR OVERDESIGNED

-- ASSESS "FITNESS FOR USE"

-- "DESIGN PROFILING" TECHNIQUE HIGHLIGHTS PROBLEM AREAS

-- QUALITY IS A <u>FLEXIBLE</u> WEAPON

EVALUATE AND ENSURE PROCESS CONTROL

TYPE OF DOMINANCE	CHARACTER	SAMPLE PROCESSES	PROCESS CONTROL SYSTEM(S)
Setup	Process is stable and reliable; if setup is correct, product is correct	Many machine shop operations, printing	First and last piece inspection
Machine	Process subject to some drift	Papermaking, packaging (such as beer), plastics injection molding	Control charts (such as $\bar{X}$,R,X,P)
Operator	Skill of operator is critical to quality of product, foolproofing important	Apparel, fast food service, repair shops	Control charts (such as, P,C), acceptance sampling
Component	Process is stable, but quality of product is dependent on quality of components	Most auto assembly and other assembly processes	Incoming inspection, acceptance sampling

QUALITY AND DOMINANCE IN THE PROCESS

-- CONCEPT OF <u>DOMINANCE</u>

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New Balance Athletic Shoes

This case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Some names and data have been disguised.

James Davis, president and general manager of New Balance Athletic Shoes, arrived at the company's Everett Street offices in Boston quite early on the morning of January 4, 1978. Although he always arrived before production began at 7:00 A.M., the need to review several pressing matters had brought him in even earlier. Sales for 1977 had been much stronger than anticipated and the existing one-shift operation at the Everett Street site was producing close to capacity. Sales projections indicated further rapid growth, yet additional capacity would be required if these projections were to be met. A number of alternatives were under consideration and a decision had to be made within the next few days so that additional capacity could be on stream by May. Davis wanted to make sure that the capacity decisions took into account the company's competitive position and long-term strategy.

Company Background

The New Balance Shoe Company was founded in Watertown, Massachusetts, in 1906 to produce corrective shoes and arch supports. From its beginning the company developed a reputation for craftsmanship. Until the early 1950s New Balance specialized in the production of specially designed orthopedic footwear, including shoes for baseball players and track and field athletes with foot problems. In 1955 New Balance capitalized on its experience in producing specially designed athletic footwear by introducing the Trackster, a ripple-soled running shoe for men. The unique feature of the shoe was its availability in widths ranging from AA to EEEE. At that time running shoes were only available in a single width and laces extended all the way to the toe to accommodate feet of different widths. It was New Balance's belief that a better-fitting shoe would be more comfortable and would improve running performance. The Trackster gradually developed a reputation for

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workmanship and comfort. Knowledge of the shoe was not widespread, however, and most sales were made by mail order to local high school and college coaches. No attempt was made to market the shoe and by 1970 about 25–30 pairs of the Trackster were produced each day in the Watertown facility. New Balance employed five production workers and running shoe sales averaged about $100,000 per year.

In 1971 New Balance was purchased by James Davis, a 28-year-old sales manager for a medical electronics firm. After graduating from Middlebury College in 1964, Davis worked as a sales representative for an electronics firm but his long-term objective was to own and manage his own business. He spent two very successful years in sales and was then promoted to sales manager. By 1970, Davis felt that he had accumulated enough experience and capital to acquire his own operation. A friend suggested that he talk to Paul Kidd, owner of New Balance Shoes, who wanted to sell the business and retire.

The discussions with Kidd were promising. A few days of checking with athletic coaches in the New England area convinced Davis that New Balance had a quality product with considerable potential if marketed properly; he said: "I felt that leisure-time products would be a high-growth market, and I found that New Balance had a good product. After running in them myself I was very impressed with the shoe. I got the same reaction from other runners. The company had relied entirely on word-of-mouth advertising and I was confident that with some marketing, sales could be expanded substantially." Using his own funds and a long-term bank loan, Davis completed the purchase of New Balance in late 1971 for $100,000.

Reorganization under Davis

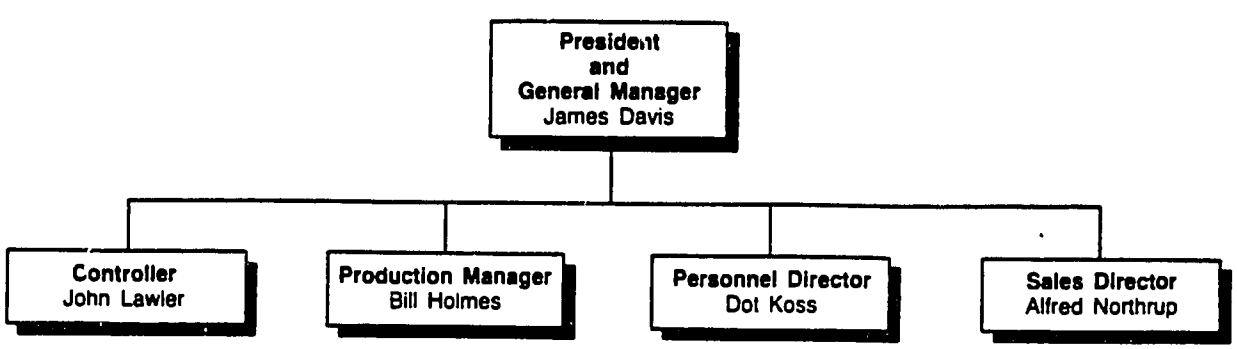
Davis spent most of his first year of ownership establishing a nationwide sales and distribution system. He chose to use geographically based sales representatives to insure that the unique features of the New Balance product would be clearly communicated to retailers (see *Exhibit 1*). As sales expanded, responsibilities for sales, personnel, and accounting were gradually delegated to other managers (see *Figure A*).

By 1977 production was under the supervision of Bill Holmes, a 1971 graduate of Clark University. Holmes had been hired by the previous owner and was retained in the production job after Davis purchased the company. The sales director was Alfred Northrup, a classmate of Davis at Middlebury College. Northrup arrived in November of 1976 after working in sales for a West Coast ski company. The controller, John Lawler, started with the company in 1975 as a part-time bookkeeper while attending Bentley College. The most recent addition to the staff was Dot Koss. Koss was initially hired as an administrative assistant to Davis but had been given responsibility for personnel. She had worked as an employment counselor in federal training programs following her graduation from Boston University in 1974.

Market Growth

With a sales network in place, New Balance benefited from a rapid growth in the market for running shoes which began in 1973. Limited to road racers and physical fitness enthusiasts as recently as 1970, running emerged in the 1970s as a major leisure time activity. In 1968, for example, 600 people officially entered the Boston Marathon. In 1976 there were 2,180 official entrants and several thousand additional unof-

Figure A
Organization Chart, December 1977



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ficial runners. Further indication of interest in running among the population in general was the growth of *Runner's World*, a leading magazine for runners. The magazine was started in 1965 and by 1970 had a circulation of only 2,000. By the mid-1970s, however, the monthly circulation approached 100,000. A 1977 study put the number of serious runners at 2 million, and indicated that another 6 million jogged for fitness and recreation. (A serious runner was defined as one who ran on a regular training schedule and who competed in road races. The study estimated that 15% of serious runners were women.)

Running Shoe Characteristics

As the sport grew, numerous publications appeared to advise the prospective runner on equipment, schedules, diet, and the like. Although themes varied, virtually every publication emphasized the importance of selecting the right footwear. In October 1975 *Runner's World* inaugurated an annual shoe supplement that presented a rating of the top running shoes. (A sketch of a typical running shoe is presented in *Figure B*; the top 10 shoes for 1975–1977 are presented in *Table A*.) In the first two shoe supplements the magazine's staff examined the shoes and did the rating. Although the ratings were subjective, some attempt was made to establish objective criteria. In analyzing the flexibility of the sole, for example, the magazine used the following system:

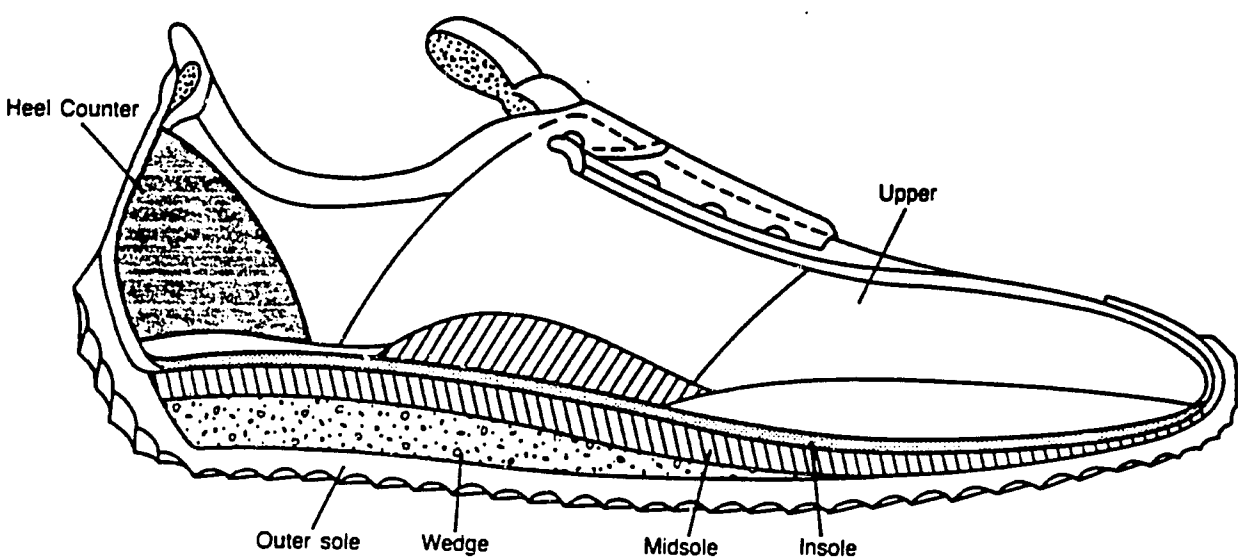
Good: Shoe bends at forefoot with finger pressure at end of shoe (7–9 points)
Fair: Shoe bends only with a flex of the wrists (4–6 points)
Poor: Full arm force is required to bend the shoe (1–3 points)

In the October 1977 issue, the magazine used a combination of laboratory testing and rankings by a panel of experts. The primary criteria used in judging the performance of running shoes were grouped into the following three categories:

Shock absorption. During a five-mile workout, each foot will strike the ground over 2,000 times. Each foot-strike has the force of about three times the weight of the body. With insufficient protection, distance running can clearly lead to serious foot and leg injuries. The ability of a shoe to absorb shock in both the heel and forefoot areas depends on the quality of materials, method of construction, and the design of the shoe.

Flexibility. The stiffness of the sole and forepart of the shoe determines the extent to which the shoe complements the natural flexing motion of the forefoot during running. Shoes with very stiff soles may cause

Figure B
Typical Running Shoe Design



Note: The sole is made up of three parts: (1) the *outer sole* makes contact with the ground and is the point of greatest wear; (2) the *midsole and wedge* provide cushioning and elevate the heel (the degree of heel elevation affects leg stress); and (3) the *insole* is in direct contact with the foot. The *heel counter* wraps around the heel, providing support and stability. The *upper* is the material that covers the foot on the top of the shoe.

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Table A
Training Flat Ratings, 1975–1977

Ratings	October 1975	October 1976	October 1977
1	Adidas SL 72/76	New Balance 320[a]	Brooks Vantage[a]
2	Puma 9190	Brooks Villanova[a]	Adidas Runner[b]
3	New Balance Interval 305[a]	New Balance Interval 305	Nike Waffle Trainer
4	Nike Road Runner[a]	Etonic[a]	Nike LD-1000V[a]
5	Tiger Nairobi	Nike LD-1000[a]	Etonic Street Fighter[a]
6	Adidas Country	Nike Waffle Trainer[a]	Brooks Villanova
7	Tiger Montreal	New Balance 220[a]	Etonic KM[a]
8	Nike Nylon Cortez	Brooks 271-B[a]	New Balance 320
9	Adidas Gazelle	Karhu 2322	Adidas Formula One[a]
10	New Balance Speedster	Nike Nylon Cortez	Brooks Vanguard[a]

Source: *Runner's World*, October 1975, 1976, and 1977.
Note: Given by company and model
a. Model introduced within the past year.
b. Model was substantially redesigned.

foot injuries, while very flexible soles may provide insufficient support and shock absorption.

Lateral support. The normal rolling or twisting motion of the foot can be accentuated during running, leading to injuries to the lower leg and knee. Particularly in the heel area, strong, rigid material can provide restraint and reduce turning and twisting as the foot makes contact.

In addition to these aspects of performance, shoes differed in workmanship and the quality of construction, in durability, and in overall fit and comfort.

The Competition

As the market grew, competition centered on product features with price a secondary factor. In the early 1970s the market was dominated by Adidas, the West German manufacturer. With the onset of rapid growth after 1973, a large number of new entrants emerged. Most offered at least one shoe designed for training and another designed for racing. Racing shoes (often called racing flats) were much lighter and more flexible, and offered less protection through shock absorption. In both racing and training shoes, firms sought to enhance product performance through the use of new materials (e.g., nylon to replace leather in the upper part of the shoe), and design changes (e.g., adding a flare to the heel). The most successful of the challengers to Adidas was Nike, founded in 1972, with headquarters in Beaverton, Oregon.[1] In 1974 Nike introduced a training shoe with a studded sole designed by Bill Bowerman, track coach at the University of Oregon. The so-called waffle sole achieved widespread acceptance and was widely imitated. By 1977 Adidas was estimated to have 34% of the market, while Nike's estimated share was 34.8% (see *Table B*).

Developing the Product Line

Shortly after purchasing New Balance, Davis recognized that the running shoe market was changing. Technical aspects of shoe performance, (e.g., the degree of shock absorption) which had concerned a few track coaches and road racers, were becoming the key to consumer acceptance. While he felt that New Balance's reputation as a producer of specialty footwear could be communicated, he knew that the Trackster would have to be upgraded and new models developed for New Balance to compete with Adidas, Nike, and other producers of high-quality running shoes.

The first new model, the Speedster, was in-

1. Adidas was headquartered in the Los Angeles area. Some marketing analysts estimated that 40% of the running shoe market was accounted for by runners in the western states where running was very popular (Northwest, California, Rocky Mountain states). Texas accounted for an additional 12%, while sales in the Northeast (New England and the Mid-Atlantic states, including Pennsylvania) averaged about 20% of the total.

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Table B
Major Competitors, 1977

	Domestic Pairs Sold Wholesale (000s)	Average Wholesale Price	Number of Dealers	Market Share (units)
Nike	2,250	$16.50	4,000+	34.8%
Adidas	2,200	18.00	10,000+	34.0
Brooks	1,150	12.00	3,000	17.8
New Balance	255	16.00	1,200	3.9
Tiger	156	16.00	1,000	2.4
Puma[a]	150	16.00	1,000	2.3
Converse	100	15.00	2,000	1.5
Pony	100	15.00	1,000	1.5
Etonic	60	15.00	500	0.9
Saucony	50	12.00	1,000	0.8
Total	6,471	$16.07	na	100%

Source: Company records

Note: Data for a number of smaller competitors have been excluded. New Balance figures do not include mail-order or foreign sales, which totaled 36,140 pairs in 1977. New Balance estimated that while 80% of its sales were made to serious runners, the industry average was closer to 70%.

a. Estimated

troduced in 1974. Width sizing remained the company's principal distinctive feature, but New Balance followed the industry trend by attempting to develop shoes with new materials and different designs. Davis commented:

> Our approach to development is basically trial and error. The way we came up with our 320 model is a good example of the process involved. In 1975 we knew we needed a shoe that was distinctive. Over a period of about six months I met often with Bill Holmes, Roy Teele (then serving as sales manager), and Tom Flemming, a world-class distance racer, to discuss product development. We discussed various approaches, and Tom tried out several prototypes which were not successful. Finally, one of us (I think it was Roy) suggested building up the heel wedge and midsole to create better cushioning and suggested reducing the thickness of the outer sole to reduce weight. Tom liked the idea, but the approach required new materials. After spending a lot of time on the phone and on the road I found some excellent material for the outer sole and Bill Holmes located a supplier for the new wedge/midsole. We had a pair made up and Tom tested them for us. He liked them and the 320 was born.

In addition to the 320 with its flared heel and cushioning, New Balance introduced the 220 which had a conventional heel and was extremely flexible. The Interval 305 had a flared heel, but was lighter and more flexible than the 320 and could be used for both racing and training.

Rapid Growth, 1977

Spurred by rapid overall growth in the market for running shoes, New Balance sales increased from $360,532 in 1974 to $1.3 million in 1976 (see *Exhibit 2*). The rapid growth of sales necessitated a move from the company's Watertown facility to a new location on Everett Street in Boston where New Balance used only one of three available floors. The move was made in April 1975 and by the end of the year production had increased to 200 pairs per day. In October 1976, New Balance received an added boost. *Runner's World* rated the New Balance 320 the #1 shoe in the world. (The 220 was rated seventh, while the Interval 305 was rated third.) Citing its excellent heel and forefoot cushioning, the magazine lauded the 320 as an outstanding running shoe; its availability in all widths was an added bonus.

The effect of the #1 rating on New Balance's sales was felt almost immediately. Shortly after the October issue was on the newsstands, New Balance began receiving telephone calls and telegrams from all over the world requesting

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information and placing orders. Production increased to 500 pairs per day by December 1976 (see *Exhibit* 3). The interest in the 320 continued throughout 1977. Davis acquired the space on the second and third floors of the Everett Street plant, and production was rapidly expanded. From a rate of 600 pairs per day in January, production rose to 1,000 pairs per day in May and increased further to 1,625 pairs per day by December. In spite of the increased production, orders outpaced shipments throughout the year, and the company acquired a growing order backlog. By December 1977, Holmes, the production manager, estimated that the backlog amounted to approximately 100,000 pairs.

Producing the New Balance Shoe

The rapid growth experienced in 1976 and 1977 brought the production process and the need for expanded output into sharp focus. The challenge facing New Balance in 1977 had been to increase production rapidly while maintaining control over quality. Davis reflected:

> We more than doubled our manufacturing space in 1977. For most of the year this place was like a zoo. We rearranged the work flow, moved departments to different floors, tore out old offices to make room for equipment and added a lot of new people. With all the urgency to produce, quality could have been hurt. Fortunately, we were able to hire experienced shoe workers in the key departments like cutting and stitching. In the other areas the supervisors did a great job keeping things under control.

The production process at the Everett Street facility was divided into seven departments. (A diagram of the production process and related information is presented in *Exhibit* 4.) By January 1978 the departments occupied all three floors of the main building. Most activities in the production process revolved around the *last*, a theoretically perfect imitation foot, usually made of wood or plastic. Because of width sizing, New Balance maintained a large stock of lasts in all size ranges and widths. The lasts were stored on large racks in a central area of the second floor. Carts were used to transport the lasts through production.

Cutting department. Materials used in the soles (outer, inner, and midsole/wedge) and uppers were purchased in large sheets and stored here on pallets in the cutting department. The soles were cut with two large power stamp cutters, while the upper was formed from more than twelve pieces of leather and nylon (or nylon mesh, depending on the model) which were produced on eight specially designed pattern cutters. The particular sizes and widths to be cut on a given day were specified on a weekly schedule. Cut pieces were stored in metal bins, which were designated by a particular size-width combination. The cutting department employed 13 people—10 operators and 3 people who handled setups and materials.

Sole making department. The wedge, midsole, and outer sole were laminated here using heat-activated cement. The three sole components were placed on a conveyor belt, urethane cement was applied, and the pieces were joined together. The sole then passed through a heating unit that reactivated the cement. In the final step, the sole was placed in a press for 2–3 seconds to establish the bond.

Stitching department. Once cut, the pieces forming the upper were transferred to the stitching department. Each stitcher operated a sewing machine specially designed to sew leather and other difficult materials. To insure a smooth flow of production, material handlers maintained an ample and balanced inventory of pieces at each work station. Work was done in batches consisting of materials for 12 pairs of shoes. From a quality standpoint, stitching was one of the most important phases of the production process. The nylon and leather pieces had to be sewn in precise patterns to create a proper fit. Moreover, the durability and appearance of the shoe was affected by the quality of the stitching. New Balance used experienced stitchers to supervise, inspect, and handle problems. Although completed uppers were inspected, the supervisors checked the length of stitch and fitting points while work was in progress. They attempted to correct problems and deal promptly with production difficulties (machine breakdown, improperly cut material, and the like).

Batching department. Completed uppers were taken to the last storage area where they were placed on the batching carts. A cart ready for further processing contained 12 pairs of fully sewn uppers, 12 pairs of lasts, 12 pairs of insoles, and 12 pairs of outer soles. The insoles were stapled to the lasts.

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Lasting department. Here, the upper was placed on the last and attached to the bottom of the insole in two stages. In the first stage, the toe was lasted using an automatic cement lasting machine. The operator positioned the upper on the last and placed the shoe in the pincher bed. The material was clamped and pulled down around the toe of the last and two extruders deposited thermoplastic cement between the upper and the bottom of the insole. The bottom of the last was then firmly clamped for a few seconds. After all 12 pairs had been toe lasted, the cart was transported to the heel and side lasting machine where a similar process completed the binding of the upper to the insole.

Making department. Heat-sensitive cement was applied by hand to the shoe bottoms to prepare them for sole laying. Extreme care was necessary in this application so that no cement was placed on the upper. Then, operators attached the sole to the last using a sole laying machine. The soles were first placed on a circular tray which rotated through a small heating unit. After heating, the soles were fitted to the bottom of the last and placed in a clamp to establish a uniform bond. Excess material was then trimmed from the soles using a grinder. Soles were rarely cut to the exact taper and size needed and the trimming operation helped to give the sole the right flare for the particular model. Because trimming also affected appearance, each shoe was inspected for abrasions.

Finishing department. Shoes were brushed, cleaned, and put through a final inspection before being packed in this final production step.

Although New Balance used the best tools and equipment available, Davis felt that the operators were the key to top-quality production. He believed that morale problems could severely hurt the quality of work in the plant. Each month Davis met with groups of employees to answer questions and to explain developments in the company. He visited the production departments often and made an effort to know workers by their first names. He commented on the importance of the work force: "There is a tremendous emphasis on quality in the market, and we work hard to make sure that each pair we produce meets high standards. I think one of the important factors in our good record on quality is the effort we make to get good workers, train them, and keep lines of communication open. I regard the time I spend with the production workers as an important part of the process."

1978–1981 Forecast

In light of the growing backlog at New Balance, Davis had met with Northrup in November and asked him to prepare a forecast for the next four years. The forecast would then be used to evaluate alternatives for meeting future production needs.

Northrup had identified several sources of uncertainty about future growth. First, he felt that the market would not continue to grow as rapidly as it had in the past three years, but he was unsure when the slowdown would occur. While it appeared that running was not a passing fad, the size of the potential market was highly uncertain. Not only were new runners entering the market each year but more and more people were moving from casual running for fitness to serious running with a training program and competition. Some observers expected the number of serious runners to increase as much as 35% per year over the next four years, even without any change in the proportion of women. It was estimated that a serious runner averaged 60–70 miles per week. Since the sole on the average training flat began to wear out after 700–1,000 miles, a serious runner could expect to purchase 3 or 4 pairs of shoes a year. Northrup felt this estimate of replacement demand was too high since many runners repaired worn soles or had shoes rebuilt. He felt that 2 or 3 pairs per year was more realistic.

A second factor contributing to uncertainty was the growth of running among women. The female runner had not been a major factor in sales, but Northrup had evidence from the sales representatives that demand for women's models was starting to pick up. New Balance had introduced a 320 for women in 1977 (rated #8 in the October 1977 ratings) and if women entered the market in substantial numbers, the forecasts could be quite conservative. A recent analysis had concluded that women would account for as much as 30–35% of the serious runner category by 1981.

The final source of uncertainty was the instability in market shares that had characterized the industry in the past few years. It was Northrup's view that Adidas had lost considerable market share with the onset of rapid growth and the entrance of several new com-

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petitors between 1972 and 1975. Nike was the biggest factor, but even smaller firms like New Balance, Brooks, and Etonic seemed to have grown faster than the overall market. Brooks, for example, had the #2 rated shoe in October 1976 (the Villanova), and its new Vantage model was rated #1 in October 1977 (the Villanova was rated #6). Joining a growing trend, the Brooks models were available in three widths (narrow, regular, wide). Davis expected Brooks to gain share because of its successful product development.

Northrup knew that Jim Davis wanted to increase New Balance's share, but just what kind of increase to introduce in the forecast was unclear. He remarked: "We were hitting capacity limits all during 1977. I firmly believe that if capacity had been available, our wholesale volume would have been close to one million pairs."

The company's top model (95% of sales), the 320, however, had fallen from first to eighth in October 1977 *Runner's World* rankings, and the impact on the market was not yet apparent. Moreover, the 220 had fallen from seventh to twentieth, while the Interval 305 (third in 1976) was not even covered in the published ratings (only the top 25 models were presented). The Trail, a new training shoe with a studded sole, was rated twenty-fourth. In light of these developments, Northrup thought a goal of 7% share of the market was reasonable. He expected all of the gain to come during 1978, after which a 7% share would be maintained.

A further potential source of growth was international demand. New Balance had sold a small number of shoes (6,000 pairs) in the international market during 1977, mostly to top distance runners. Early reaction had been very favorable and Davis felt that demand would expand rapidly if a sales network was established. He felt that especially in Europe, running was two to three years behind developments in the United States. Despite the dominance of Adidas and Puma, Davis believed that New Balance could obtain a substantial share of the growing market with a major effort. (Both Adidas and Puma were based in West Germany.) Because no commitment had been made, however, international sales of only 30,000 pairs had been used for planning purposes.

The 1978–1981 estimates developed by the marketing department called for substantial increases in volume (see *Exhibit 5*). Alfred Northrup commented: "Given the uncertainty we face, the sales goals we have established for the next four years reflect a fair bit of guess work. There is no industry association to collect data and the available information is pretty sketchy. Basically, we have relied on the judgments of our sales representatives in the field, and our own intuitive assessment of the market."

Options for Expansion

With orders outpacing production throughout 1977, Davis had investigated alternative sites for potential expansion of capacity. After reviewing the situation at Everett Street, he decided against adding a second shift or making extensive use of overtime. Overtime had been used moderately during the peak production periods, but many of the stitchers were women who did not like to work more than 3 to 4 hours of overtime per week. In the course of reviewing the second shift option, cost estimates had been developed. Holmes estimated that labor costs on the second shift would be 10–12% higher, primarily because of a shift differential, but also because of reduced productivity. On the other hand, manufacturing overhead would be as much as 5–8% lower because some costs included in overhead were fixed. Additional space for storage of materials could be leased at an annual cost of $0.75 per square foot. Holmes estimated that 8,000 square feet would be required.

Davis felt the second shift had several drawbacks:

> Running a second shift would create inventory problems, particularly of raw materials. We probably would have to find additional warehousing space. But I feel the biggest problems with a second shift are people problems. Good stitchers, willing to work at odd hours, are hard to find, and there are always problems when two stitchers share a sewing machine. Finding enough good supervisors to staff a full shift would not be easy. My biggest concern, however, is that a second shift would put too many people in one facility. When there are so many people that the employees do not feel a part of the company, morale is likely to deteriorate. The last thing I

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want to do is create a situation where discontent and perhaps even unionization could result.

With the second shift option rejected, Davis focused his attention on alternative sites for a new facility. He had originally looked only in eastern Massachusetts, but he had become interested in potentially locating in the southwestern United States.

Lawrence, Massachusetts

The Lawrence option involved converting a warehouse then under lease to New Balance into a shoe production facility. New Balance used the warehouse to store raw materials, many of which were purchased from suppliers in the Lawrence area. The warehouse was located about 20 miles north of the Everett Street plant and occupied 43,000 square feet on one floor. The facility was large enough to support production of 3,000 pairs per day. Davis had determined that the owner of the warehouse was willing to sign a new three-year lease, with an annual cost of $0.85 per square foot. The cost of equipment was estimated at $100,000. A series of discussions with the economic development agency in Lawrence had revealed the city's willingness to assist the company in opening a new facility. Davis felt confident that New Balance could obtain assistance with licenses, utilities, and the like. Operating costs were expected to be lower in Lawrence than they were in Boston, largely because of lower labor costs. Davis felt that material costs and manufacturing overhead would not be much different in Lawrence even after considering the new lease arrangements. Wage rates, however, were estimated to be about 10% lower than rates in Boston. The closing of several shoe factories in the Lawrence area throughout the 1960s and 1970s had resulted in the unemployment of a large number of relatively experienced shoe workers. It was felt that obtaining a complement of experienced stitchers and operators would not be difficult in light of the relatively depressed state of the labor market in the Lawrence area.

The Texas Option

Davis had been intrigued with the possibility of locating a facility in the Southwest for some time. In the process of looking for alternative sites, he obtained information on several areas in the Southwest, but he was particularly impressed with the business climate in Texas. Several locations (e.g., Dallas–Fort Worth, Austin) were regarded as suitable. Advantages lay in lower operating costs and the absence of state taxes on corporate income. The effective Massachusetts state tax rate on New Balance's income had ranged from 4.5% to 6.5% in the past two years (the effective federal rate had averaged 30%). Expenditures for equipment would be identical to the Lawrence option. Davis had found that a production facility similar to the one in Lawrence (40,000 square feet) could be leased at a cost of about $0.95 per square foot. The term of the lease was likely to be 8 to 10 years. And while materials and manufacturing overhead would be somewhat higher than Lawrence because of the distance from Boston, the labor market in Texas was quite attractive. Taking into account the lease costs as well as freight charges, Davis estimated that materials and overhead costs would be 2–3% higher.

Unions were not strong, and Davis estimated that wage rates for the kind of workers he expected to employ were about 25% lower than in Boston. Although unemployment rates were much lower in Texas than in Massachusetts, Davis had been assured by state officials that acquiring skilled operators would not be a problem. Moreover, a check of government statistics revealed that just over 70,000 people were employed in the apparel industry in Texas, compared with 42,000 in Massachusetts. Apparel production used many of the cutting and stitching skills required in shoe manufacturing.

The International Situation

In addition to increasing domestic capacity, Davis had given considerable thought to the possibility of producing in Europe. He felt that neither subcontracting nor domestic exports offered the strategic advantages of foreign production:

> A lot of Europeans look on U.S. companies as lacking commitment to the European market. If we can achieve a European identity, I believe it would be very significant in terms of further expansion. Few of our competitors have a European plant, and except for Adidas and Puma, none of them are very big in Europe. I think Europe is two to three years behind the U.S. in terms

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of growth in running. If we can get in on the ground floor, we could achieve a significant competitive advantage.

The most attractive European option Davis had developed was a shoe factory in Ireland. The company owning the factory had decided to close and was looking for a buyer. The estimated cost of the 30,000 square foot facility was $420,000, including $90,000 in machinery. The facility's capacity was estimated at 2,500 to 3,000 pairs per day. The Irish Development Agency had offered a grant of 40% of the purchase price, as well as $240,000 in training grants over three years. The estimated average hourly wage in Ireland was $1.75, although Davis had been told that productivity would be 20–25% below the Everett Street operation. Discussions with the owner of the shoe factory in Ireland had suggested that overhead costs (including depreciation) would be similar to those New Balance was experiencing in the United States. Because of additional freight charges, material costs per pair would be higher; a 3–4% increase was likely.

As part of its industrial development program, the Irish government had declared a tax holiday until 1990 for firms newly locating in Ireland to produce for export. By producing in Ireland, New Balance could also avoid the 6% tariff on goods entering the Common Market from the United States, as well as the $1.00-per-pair freight cost. Furthermore, export to the United States might be feasible.

The Decision

After reviewing the plant location issues on the morning of January 4, Jim Davis met separately with Alfred Northrup and David Bates, a member of the New Balance board of directors and a partner in a Boston accounting firm. Bates was particularly concerned about overexpansion:

> Look, Jim, you've had a good year and 1978 looks like it will be even better, no matter what you decide to do on the new plant. There's still room to expand capacity at Everett Street either with a limited second shift or by using some of the material storage area. I'm worried that going to a multisite operation right now will stretch you too thin. If you try to grow too fast, quality could be hurt and you might lose a lot of what you've worked for. I'm also concerned about competitive reactions in the future. Prices will become more important and at least some of the larger sporting goods companies are bound to enter the market at some point. I'm not sure how we will need to compete in that kind of environment.

In contrast to Bates's view, Northrup was enthusiastic about expansion in the West:

> I think the idea of locating a plant closer to the West Coast has great merit. Although I'd rather have it in California, I understand that costs would be higher there. Even in Texas, there will still be an advantage. Running is much bigger in the West than in the East. We really haven't hit that market as hard as we should, and I'm sure we could increase our market share with a new plant out there. Sales reps and dealers on the West Coast are always complaining about delivery problems. As far as the European thing goes, it's got great potential, but I'm not sure now is the right time, given the confirmed opportunity in the West where we've already got an established dealer network. I think our first "foreign" plant should be in Texas.

As he reflected on his conversations with Bates and Northrup, Davis wondered how much weight to give each of the factors. He commented on the forthcoming decision:

> Six years ago when we started this company, there were five employees. We hardly made any money at all. Now we produce one of the best running shoes in the world, and the company is on the verge of becoming very profitable. I know we have a very good thing here, and a lot of other people feel the same way. Almost every day I get a call from someone offering me several million dollars for the company. I have no intention of letting the opportunities get away from us through bad decisions. An established position in running shoes could provide the base for diversification and expansion into related markets. I see New Balance emerging as a major competitor in the athletic footwear industry. We have a solid future as long as we don't forget the things that got us to this point in the first place. I think the decision on capacity is an important one. It will set a pattern for us over the next several years. Along with Dave Bates, I'm concerned that we don't get spread too thin, but I can see the advantages Alfred is excited about in the Southwest. I also think the European situation is

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very promising. It's clear to me that in making the decision I'm going to have to think carefully about our strengths and weaknesses, and where the company should go in the future.

Exhibit 1
Sales by Region, 1977

Sales Region	*Number of Dealers*	*Total Pairs (000s)*	*Total Sales ($000s)*
Northwest	32	7.2	$115.6
California (includes Hawaii)	196	56.7	911.1
Rockies	70	10.0	160.7
Wisconsin/Minnesota	100	16.3	261.8
Texas	104	29.0	466.0
Midwest	118	31.8	494.9
New England	185	32.7	525.4
Mid-Atlantic/New York City	172	35.6	572.0
New York/Western Pennsylvania	25	6.5	104.4
Southeast	150	22.0	353.5
Missouri/Kansas	45	7.2	115.6
Total	1,197	255.0	$4,081.0

Exhibit 2
Earnings Statement, 1973–1977

	1973	*1974*	*1975*	*1976*	*1977*
Sales	$221,583	$360,532	$577,491	$1,322,814	$4,658,308[a]
Cost of Goods Sold					
Inventory, January 1	40,752	51,983	63,879	74,436	143,290
Materials	40,403	82,680	138,227	372,962	1,346,164
Direct labor	51,048	67,975	97,433	241,068	805,093
Manufacturing overhead[b]	29,699	61,407	116,660	201,530	701,469
Less: Inventory, December 31	51,983	63,879	74,436	143,290	476,564
Cost of goods sold	109,919	200,166	341,763	746,706	2,519,452
Expenses					
Selling	34,534	78,111	117,495	227,806	715,913
Administrative	61,191	73,183	85,732	215,223	668,733
Earnings before taxes	$15,939	$9,072	$32,501	$133,079	$754,210

a. Revenues for 1977 included mail-order and international sales.
b. Included indirect labor, depreciation, insurance, light and power, maintenance, and employee benefits.

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Exhibit 3
Monthly Production, January 1976–December 1977

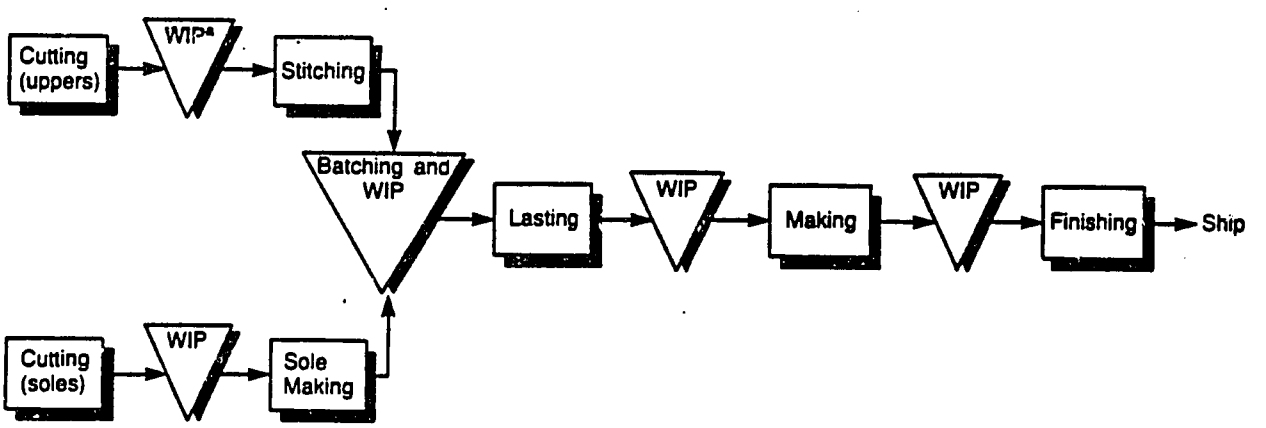
	Pairs Produced			
	1976 Total	Average Daily Rate[a]	1977 Total	Average Daily Rate
January	3,453	157	13,520	644
February	4,335	215	13,754	688
March	6,794	295	20,463	890
April	5,488	249	18,692	890
May	6,048	288	22,868	1,039
June	7,591	345	29,876	1,358
July[b]	3,863	176	17,214	820
August	6,977	317	24,986	1,086
September	9,600	436	36,432	1,656
October	9,682	461	29,826	1,420
November	10,092	459	33,124	1,506
December	11,903	518	35,815	1,628

Source: Company records

a. The average daily rate was based on actual days worked.
b. The annual 2-week vacation was scheduled in July.

Exhibit 4
Department Process Flow and Production Data, December 1977

Process Flow



a. Work in progress

Production Data

	Cutting		Sole Making	Stitching	Lasting	Making			Finishing
	Uppers	Soles				Application	Sole Laying	Grind	
1. Capacity (pairs/hour)	250	235	225	203	210	210	275	240	230
2. Production workers	10	3	15	57	16	7	8	7	19
3. Supervisors	1[a]	1[a]	1	3	1	1[b]	1[b]	1[b]	1
4. Average hourly earnings	$5.00	$5.00	$3.00	$3.35	$3.40	$3.50	$3.50	$3.50	$2.80

Source: company personnel

a. One person supervised all workers in the cutting department.
b. One person supervised all workers in the making department.

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Exhibit 5
Domestic Sales Forecast
Wholesale Units (thousands of pairs)

Model	1977 (actual)	1978	1979	1980	1981
Training					
220	1.5	–	–	–	–
305	4.0	–	–	–	–
320	243.0	400.0	340.0	150.0	–
320W	–	100.0	250.0	150.0	–
Trackster III	1.5	–	–	–	–
Trail	2.0	–	–	–	–
Trail 355[a]	–	140.0	150.0	105.0	131.0
Trail 355 W	–	40.0	50.0	60.0	56.0
New Trainer[b]	–	–	50.0	345.0	600.0
New Trainer W[b]	–	–	10.0	240.0	450.0
Racing					
Cross Country	0.5	20.0	30.0	–	–
Supercomp	2.0	30.0	30.0	–	–
New Racer[b]	–	–	60.0	135.0	146.0
New Racer W[b]	–	–	–	15.0	19.0
Total Pairs	255	730	970	1,200	1,402
Average Wholesale Price	$16.00	$18.00	$19.50	$21.50	$23.00

Note: Data for 1977 exclude mail-order and international sales. For planning purposes, New Balance assumed a level of international sales of 30,000 pairs for the years 1978–1981 (this amount is not included in the above totals). Of this amount, 14,700 were allocated to Europe, which was about 1% of the European market in 1978.

a. The Trail 355 was a studded-sole training shoe that embodied the basic design of the 320 and was scheduled to be introduced in 1978. It was designed to replace the original Trail model.

b. These are composite categories. The specific models to be introduced had not been developed at the time of the forecast; thus, the figures could include the sales of one or more models.

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*Case 15**

Ontario Packaging

"It looks to me that we are agreed. The process investment proposals before us are sound in principle providing we can increase throughput from present levels by some 40 percent, as indicated in the supporting details. I know this is no easy task, but all market segments are getting more difficult and, if we are to survive and maintain current performance levels, then this type of challenge will be illustrative of many future corporate decisions. From these initial discussions it appears that the extra volume is available, even though it places a greater emphasis on price. The new process will help, in part, to reduce costs, but higher volumes are essential if we are to maintain the group's payback requirements, and protect the above-average return on investment performance we have achieved in the past." Norm Phillips, Chief Executive Officer of Ontario Packaging, was summing up a meeting on manufacturing investment proposals, which was intended to be the initial phase of a modernization program within the company.

ACKGROUND

Ontario Packaging is part of Texet Industries, a large group of companies with diverse interests in food, cosmetics, engineering, and toys, besides a growing stake in retail holdings and other non-manufacturing businesses. Taken over in 1984, Ontario Packaging is now one of several packaging companies within the Group, but the first within the Province.

Having given the company time to settle down within the new corporate structure and allowed Norm Phillips to gain an understanding of the business since his transfer from within the Group, some twelve months

*This case study [illegible]

before, the Executive Group of Texet had recently asked the company to review its position. The review was to include an assessment of its current markets and to include any future process investment proposals it thought to be necessary with an indication of why they should take place, the anticipated impact on the business as a whole, and on the various return on investment measures used within the Group, in particular.

MANUFACTURING

Ontario Packaging produces a fairly wide range of cartons and other forms of packaging. Its manufacturing capability comprises various forms of printing, laminating, cutting, creasing, glueing, and other auxiliary processes, together with a whole range of in-house support functions.

The investment proposals under review concern replacing current laminating equipment with an up-to-date process which would provide the same capability (see Exhibit 1). The cartons which use this process account for some 30 percent of total production volumes (standard machine hours). At a cost of $2.5 million, the investment would give labor, material, and other savings to provide a payback of 6.5 years on current volumes. However, in order to meet the Texet investment payback norm of four years it would necessitate increasing current sales revenue for these cartons by some 40 percent. It is this higher level of volumes on which the investment proposals have been based.

Besides the basic gains accruing from increased throughput speed (a principal source of savings) and reduced material wastage, the new process would offer few additional technical advantages (setup times were marginally faster), other than those associated with the reduced performance on existing processes resulting from wear and tear with age.

While the utilization of the current process was less than 60 percent, the target set in the proposal for the new investment was 80-85 percent, based on higher volumes.

MARKETING

"Ontario Packaging has, over the years, increasingly positioned itself in the higher quality end of all its markets," explained Rod Shaw, the Marketing Director, who has been with the company for over 15 years. "The cartons under review are no exception. While the technical features of the final carton are slightly less demanding than many of the rest of the product range, there is the same demand for high, reliable quality. While the manufacturing process currently used is able to consistently provide the quality requirements of our products, no doubt the new process will enable us to achieve these more easily.

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EXHIBIT 1
Details of the Investment Proposal under Review

As part of a strategy to upgrade its processes (as well as increase its process, capability where appropriate) Ontario Packaging was proposing to invest in a state-of-the-art laminating process, which would replace the existing process capacity. Currently, some 30 percent of the total production volumes (standard machine hours) were laminated.

The new laminator would offer significant savings in direct labor (through reduced manning), lower material costs within the laminating process, and a reduced maintenance bill (with, however, a corresponding increase in depreciation costs).

However, in order to achieve the group payback norm of four years, the company would need to increase its sales of laminated products by about 40 percent on current levels.

While setup (or make-ready) times for the new process were similar to the existing equipment, throughput speeds were more than twice as fast. The order quantities currently processed averaged about seven hours and ranged from 2.0 to 60.0 hours.

Current sales were split roughly half and half between those which were not price-sensitive and those where price was an order-winning criterion at some level. However, the latter orders varied in their degree of price sensitivity, with two thirds of this segment where price was given a weighting of 20 points or less.

It was recognized that the proposed increase in sales of laminated products of about 40 percent of current levels would be achieved in segments where price would increasingly be the important order winner. The company, although recognizing that this would require significant sales effort, has identified the segments and customers that are available and consider the achievement of these higher volumes to be a realistic target within the required timescales.

Notes:
1. Laminations consist of sheets of material (varying with individual specifications) that are glued together.
2. Due to space restrictions and to maintain the current, sensible flow of materials through the manufacturing process, the proposed new process will be installed where the existing equipment is positioned.
3. The current equipment comprises two machines and is run on a two-shift basis. It is also proposed to run the single replacement process on a two-shift basis.

"A recent marketing survey on the relative importance of different purchasing criteria to carton users revealed that in the segment to which this investment proposal relates, providing prompt quotations and samples, together with high delivery reliability and a willingness to meet schedule changes, are critical features and ones which our company has proved to be better at providing than our competitors. This represents the view our customers expressed in the survey.

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"While price is not an important factor in winning current orders for these products, it would increasingly be so for the new orders we would need to secure to achieve the additional volume called for by the output levels underpinning the process investment proposals being considered. However, to compensate we would be moving into higher volume orders, which would reinforce the gains inherent in the new process in terms of the cost savings available, while obviously providing the overall volume levels associated with the whole proposal. I know we can get these additional orders, providing the price is right and we maintain all the other features of the product and necessary levels of customers service. It's a tall order, so to speak, but I know we can do it."

LOGISTICS MODULE

April 30 - May 2, 1992
Prague, Czechoslovakia

Session	Day 1 - April 30	Day 2 - May 1	Day 3 - May 2
8:30-10:00		Distribution Channels	Case Study
Break			
10:15-11:45		Transportation	Logistics Integration
Lunch			
1:30-3:00	Strategic Logistics	Inventory	Organization/ Administration
Break			
3:15-4:45	Customer Service	Logistics Operations	Case Study

LOGISTICS
PRAGUE, CZECHOSLOVAKIA

Strategic Logistics
- Evolution of logistics
- Events stimulating sophisticated logistics
- Logistics management value-added process
- Logistics/manufacturing interface
- Global logistics

Customer Service
- Relationship of marketing and logistics
- Service objectives
- Customer expectations
- Models of customer satisfaction

Distribution Channels
- Definitions
- Channel role and development
- Structure
- Channel alliances
- Design considerations

Transportation
- Economic characteristics
- Model service characteristics
- Intermodal characteristics
- Transportation and economic impacts
- Transportation and policy impacts

Inventory
- Inventory information flow
- Inventory dynamics
- Inventory management components
- Implementing integrated inventory management

Logistics Operations
- Order cycle management
- Demand management
- Postponement
- Consolidation
- Value-added service

Case Study

Logistics Integration

- Systems analysis and integration
- Transportation integration
- Inventory integration
- Total cost - customer service integration
- Sensitivity analysis - cost/revenue

Organization/Administration

- Logistics organization types
- Organizational change
- Logistics organizational issues
- Logistics responsibilities
- Key characteristics

Case Study

Session 1
STRATEGIC LOGISTICS

01/27/92

I. Introduction

II. Logistical development and future

- A. Dynamic political/legal environment
- B. Technology explosion
- C. Industry - business structural change
- D. Boundary spanning - internal, supply chain, global

III. Logistics process management

- A. Customer focus marketing
- B. Time based competition
- C. Competitive benchmarking
- D. Supply chain integration
- E. Performance evaluation

IV. Supply chain management

- A. The concept
  1. The planning and execution of internal and external logistics activities as a single process focused on customer success

2. Supply chain management is a comprehensive concept capturing objectives of functional integration and strategic deployment as a single managerial process

B. The vision

1. Information requirement flow

2. Value-added flow

C. Operating objectives

1. Maximum response

2. Minimum variance

3. Minimum inventory

4. Maximum consolidation

5. Quality

6. Life cycle support

D. Barriers to supply chain management

1. Traditional command and control functional organization

2. Inventory ownership

3. Information and financial system focus

4. Knowledge transfer

V. Launching logistics as a strategic resource

A. Focused service to customer segments

B. Emphasis on flexibility

C. Leveraging through alliances

VI. Summary

Session 2

DISCUSSION NOTES
Channels of Distribution and Logistics

I. Introduction

II. Definition of channel of distribution

A. Who is involved? (consumer channel)

1. Manufacturing enterprises
2. Wholesaler enterprises
3. Retailer enterprises
4. Transport enterprises
5. Consumers

B. Industrial channel

1. Manufacturing enterprises
2. Brokers
3. Manufacturers agents

C. What is interdependence?

D. What functions are involved?

E. What are channel outputs?

1. Price/product offering
2. Spatial convenience
3. Lot size

4. Delivery time (waiting)

5. Product variety

III. What is the economic justification of channels of distribution?

A. Direct and indirect distribution

B. Economic advantage of middlemen

1. Breaking bulk

2. Assorting

3. Routine transactions

4. Minimize search costs

C. Strategic aspects

1. Market access

2. Market acceptance

IV. Channel management, focus on the strategic placement of inventories

A. One direction flows

B. Principle of postponement

C. Benefits of channel alliances

1. Minimize transaction costs

2. Just in time concepts

3. Increased customer service

V. Summary

Session 3
CUSTOMER SERVICE

I. Introduction

II. What is customer service?

- A. A complaint department
- B. A performance expectation
- C. A corporate philosophy
- D. Customer service is a process for providing significant value-added benefits to the supply chain in a cost-effective way

III. Relationship of marketing and logistics

- A. Where does logistics fit?
  1. The right arm of marketing
  2. As part of the product offering
  3. As part of place/distribution
- B. How marketing decisions can effect logistics
- C. How logistics decisions can effect marketing
- D. Customer-driven rather than production-driven

IV. Service objectives

- A. Customer service elements
  1. Product availability
  2. Order cycle time

3. Ability to handle the special or unusual

4. Logistics system information

5. Post-sale support

B. The firm's capabilities to deliver

V. Customer Expectations

A. External customers

B. Internal customers

C. Local vs. global expectations

VI. Setting customer service policy

A. Who are the customers?

B. Which factors are relevant to each group?

C. Which factors are critical to the relationship?

D. How does the firm rate itself on these factors?

E. How does the customer rate the firm on these factors?

F. How does the customer rate the competition on these factors?

VII. Summary

A. Trends in customer service

B. Some guidelines

Session 4
TRANSPORTATION

01/27/92

I. Introduction

II. Economic characteristics

- A. Participants
- B. Cost structures
- C. Transportation pricing
  - 1. Cost based
  - 2. Demand based

III. Modal characteristics

- A. Modes
  - 1. Rail
  - 2. Motor
  - 3. Intermodal
  - 4. Package
- B. Economic
- C. Selection criteria
  - 1. Cost
  - 2. Time

3. Reliability

4. Capability

5. Accessibility

6. Dependability

7. Security

IV. Transportation strategy development

A. Market requirements

B. Alternatives

1. Private

2. Public

3. Alliance

C. Evaluation and selection

V. Summary

Session 5
INVENTORY DYNAMICS

I. Introduction

II. Inventory cost and its strategy impact

- A. Carrying cost
- B. Inventory responsibility
  - 1. Levels and turns
  - 2. Impact on profit and loss
- C. Inventory influences on strategy
  - 1. Inventory-transportation trade-offs
  - 2. Stocking policy and locations

III. Inventory trade-offs

- A. Service objectives
- B. Uncertainty
  - 1. Demand and forecast
  - 2. Communication
  - 3. Cycle time
- C. Lot quantity
  - 1. Order quantity
  - 2. Replenishment mode

D. Stocking policy

1. Locations

2. Target levels

IV. Service refinements

A. Define relevant measures

B. Set targets by segment

V. Information refinements

A. Model for refinements

B. Refinement examples

VI. Operations refinements

A. Production/order quantities

B. Transport modes

C. Cycle times

VII. Stocking policy refinements

A. Inventory centralization

B. Safety stock targets

VIII. Implementing an inventory strategy

A. Product classification (ABC)

B. Strategy definition

IX. Summary

Session 6

CASE EXERCISE
Logistics Management
Eastern Europe

Background: The intent is to have the class identify current and real world logistics problems from individuals in the class, work them into a typical "definition o the problem" format, and have the class develop recommended solutions.

Process: After the first day of instruction, students will be asked to identify representative problems related to logistics which they have recently encountered. These can range from unreliable sources of supply, transport problems, communication issues, or anything within the realm of logistics. Students could also identify issues which represent opportunities such as alternatives for investment in logistics facilities or potential changes in the various logistics decisions of the firm.

Format: Problems should be identified in the following format:

How the problem or opportunity is perceived by the decision maker.

Any available background information on the nature of the enterprise, such as what its objectives are, who its customers are, how its success is measured, and whether it has been successful according to those measures.

What are the perceived costs and benefits of the problem or opportunity from the perspective of the decision maker?

Who else may be involved in this problem or opportunity? For example, does any other interest need to cooperate with the decision maker in order for this to be successful?

Process: Faculty will review the material submitted by the class and select those situations that represent the greatest promise for classroom discussion. The class will be asked to define the nature of the problem and identify all available alternatives. Following this, the class will be asked to evaluate alternatives and arrive at some recommended action.

Session 7
LOGISTICS OPERATIONS

I. Introduction

II. Order cycle management

A. Elements of order cycle time

1. Order taking

2. Order processing

3. Order fulfillment

4. Transit time

5. Import/export operations

B. Reducing order cycle time

III. Demand management

A. Smooth vs. variable demand

B. Work with customers to smooth demand variation

1. Spread delivery schedules

2. Get customer forecasts or production schedules

IV. Postponement

A. Delay commitment to latest possible time

B. Savings in finished goods investment and value added

V. Substitution

A. Why send something other than what was ordered?

B. Prior agreements with customers on possible substitutes

VI. Consolidation

A. For transportation savings

B. For storage savings

C. Kinds of consolidation

1. Temporal

2. Spatial

3. Product

D. Effects on transit time and cost

VII. Value-added services

A. Functional shiftability

B. Specialized services

C. Which ones performed where?

D. Information technology

VIII. Summary

Session 8
LOGISTICS INTEGRATION

01/27/92

I. Introduction

II. Systems analysis

A. Concept definition

B. Basic components

C. Principles of analysis

1. Total system performance is singularly important

2. Components or parts of system need not have optimum construction

3. A functional relationship exists between components call trade offs which may enhance or hinder system performance

4. Components linked together in a balanced system will produce greater end results than the sum of individual components

D. Key trade offs

1. Cost to cost

2. Cost to service

III. Transportation cost integration (spatial)

- A. Activity based costs
- B. Basic economies
  - 1. Economy of size
  - 2. Economy of distance
- C. Generalized relationship

IV. Inventory cost integrations (temporal)

- A. Activity based costs
- B. Basic economies
  - 1. Single location
  - 2. Multiple location
- C. Generalized relationship

V. Total cost - service integration

- A. Minimum total cost assignment
- B. Threshold service capability
- C. Cost revenue impact strategies
- D. Performance improvement short cuts

VI. Summary

Session 9
ORGANIZATION/ADMINISTRATION

I. Introduction

II. Logistics activities

- A. Production planning
  - 1. As a separate function
- B. Functions performed outside the firm (outsourcing)
  - 1. Reasons for outsourcing
  - 2. Managing third party relationships

III. Logistics responsibilities

- A. Inside the firm
  - 1. Relating to other functions within the firm
  - 2. Supporting other functions
- B. To suppliers
  - 1. Help with transportation schedules and costs
  - 2. Help determine economic order quantities based on discounts and freight rates
- C. To customers
  - 1. Often closest to the customer on a day-to-day basis
  - 2. Coordinate delivery to customers
  - 3. Manage the information interface

IV. Key characteristics of future organizations

A. Lean and agile

B. Customer-focused

C. Asset management

D. Closely linked to supply chain

E. Gaining competitive advantage through logistics

V. Summary

EAST RIVER PAPER MANUFACTURING CO.[1]

On October 2, 1985, a customer was complaining to Mr. Jack Mitchell, the Vice President of Sales for the East River Paper Manufacturing Co. (ERPM). The customer, Mr. Samuel Carpenter of the Ritz Paper Company said the following:

> Jack, I do not want any more excuses. I gave you my order three weeks ago. Nothing happened until 10 days ago when I was notified that the order was going to be manufactured September 23 and shipped the next day. If you had shipped it on September 24 we would have received it by now! It is now October 2 and we have no shipment and no notice of where the shipment is or if we will ever get it. Last year we purchased over $4,500,000 from your company and we have been a long time customer. But this is the third straight order which has been seriously delayed. If your service does not get better we will have to do business with someone else.

Mr. Mitchell's response was to apologize and asked for some time to investigate the cause of the problem. After he hung up the telephone he realized that the call from Ritz Paper had been the

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[1] This case originally appeared as East River Pulp and Paper Corp. (A), Gen. Mgt. Case 113, copyright 1966 by the President and Fellows of Harvard College. It was subsequently rewritten by Frederick J. Beier, Carlson School of Management, University of Minnesota, in January of 1992 for an experimental program of teaching logistics to Eastern European students. Although relationships have been maintained figures and dates have been altered so that the case material does not bear any similarity to the actual industry.

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8th call in two weeks from big customers who were complaining about service. Ritz Paper was a major wholesaler of kraft paper and purchased approximately 25% of all sales which ERPM made to wholesalers.

Mr. Mitchell called Scott Wilson, who was the Sales Service Manager responsible for managing service to customers such as Ritz. He explained the call from Ritz and asked Wilson to find out why the order had not been shipped. Both Mr. Mitchell and Mr. Wilson were in ERPM's headquarters building in New York City.

Mr. Wilson immediately called the Production Planning and Scheduling Department at East River's largest factory in Waycross Georgia (approximately 800 miles southeast of New York). After some additional inquiry at the factory it was determined that the order had been actually manufactured on September 26 and 27 and was shipped on September 28. This information was communicated to Mr. Mitchell. By the time Mr. Mitchell was able to explain the situation to Sam Carpenter it was October 3.

<u>East River Paper Manufacturing Co.</u>

The East River Paper Manufacturing Co. was one of the smaller integrated paper making companies in the United States. While the stock of ERPM was publicly traded over 50% of the shares were still held by the founding family. It competed in two primary

market segments of the paper industry. Industrial products, also called kraft paper, included three groups of products: "Merchants" which were gummed tape for packaging, grocery bags, specialty bags, and a variety of wrapping papers; "Multiwall" which were multiple layers of kraft paper for packaging flour, feed, chemicals, cement, and similar products; and "Bulk" products which consisted of large rolls of kraft and tissue by-products. Consumer products consisted of facial and bathroom tissue on the one hand and, paper napkins and towels which were sold under both the company's own advertised label and private brand labels. Of total sales in 1984, Merchant's Products accounted for approximately 37%, Multiwall Products 8%, Bulk Products 15%, and Consumer Products the remaining 40%. Total sales in 1984 were 65.7 million, an increase from $59.8 million the year before. Operating and financial data are given in Exhibit 1.

The Paper Industry

The paper industry consists of a large number of companies engaged in several related and overlapping lines of business. The larger firms were vertically integrated which meant that they controlled the assets involved in owning and harvesting the woodlands, making pulp, producing paper, and converting large rolls of paper into manufactured paper products. In general there were six market segments identified for paper products: 1)

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pulp, 2) newsprint, 3) printing and fine papers, 4) coarse and industrial papers, 5) tissue and sanitary papers, and 6) paperboard. East River competed in the fourth (course and industrial paper) and fifth (tissue and sanitary paper) segments.

A list of the thirty largest integrated manufacturers in the United States, as of the beginning of 1985 is presented in Exhibit 2. This same list indicates the 1984 tonnages produced and the lines of business in which each company had any significant volume.

In addition to the large integrated firms there were also smaller enterprises who competed in each of the market segments. This was especially true in East River's markets. Small converting plants purchased large rolls of kraft or tissue paper from which they manufactured bags and tissue products. These small converting plants were opportunistic and frequently competed on the basis of a lower price because they were able to avoid expenses associated with a sales force or advertising.

Paper making is technologically complex and requires heavy capital investments. A paper machine costs between $20 and $30 million and requires 18 months to build. Because of this large investment paper companies attempted to run their machines 24 hours a day every day of the year regardless of the variations in demand. For example, if sales of paper declined companies would

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continue to make paper for inventory and wait for sales to increase. However, at the same time if sales declined companies would stimulate demand by reducing prices. The consequence was that the industry was subject to wide price fluctuations in periods of declining demand. See Figure 1.

Another factor which contributed to price fluctuations was the tendency of most firms to increase capacity at the same time. This situation occurred in the period between 1979 and 1981. During this period demand had increased beyond capacity causing prices and profits to increase. Paper manufacturers attempted to increase their capacity and by 1982 industry capacity had increased by 22% over what it was in 1978. The increased capacity led to greater production and lower prices. Since then demand has increased but at a more modest level and prices have continued to decline.

In the fall of 1985 East River was experiencing a sudden increase in orders. These were partly in response to lower price levels and in anticipation of industry-wide price increases which were supposed to take effect after the first of the year. ERPM served about 600 customers with industrial products. Approximately 30 of these were grocery supermarket chains and large paper wholesalers (such as Ritz), and these represented approximately 80% of the sales volume of industrial products. East River's sales philosophy was described as "anything the customer wants."

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Because price discounts were matched by all competitors the primary competitive element was rapid delivery. As a result all salesmen, including those from ERPM, would try to promise delivery as early as possible and put pressure on the manufacturing people to honor those promises.

Order Processing

Customers were encouraged to send their orders directly to the Sales Service Department in New York. The intent was to eliminate the need for ERPM sales people to write up orders and allow them more time selling. The "customer service representatives" within this department were technical sales people who were also supposed to provide a communication link between the customers and the factory. They also handled complaints from the customer. It was estimated that the Sales Service Department processed approximately 30-40 orders per day under normal conditions and two or three times that amount when customers expected prices to increase as was the case now. In general orders were processed in the following sequence;

1. customer orders were received by mail or telephone or FAX and reviewed by the Manager of the Sales Service Department, Mr. Scott Wilson. This enabled him to maintain a sense of the volume of business and the general delivery requirements. After he reviewed the

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incoming orders he directed them to the Customer Service Representatives.

2. the Customer Service Representatives entered the customer's order into a personal computer which was networked with the company's sales information data base which contained the customer's sales history. The complete order was transcribed into the data base including the customer's requested shipping, delivery date and prices. Customer Service Representatives were instructed to telephone the customer if there was some question about the items or quantity which were being ordered. At this point a hard copy of the order was created which was formatted to fit on a standard East River order form.

When Customer Service Representatives were not processing orders they were responsible for tracing other shipments or otherwise handling complaints. The general rule was that Customer Service Representatives processed orders on a first come first served basis.

3. The hard copy of the order was then sent to the accounting department, located in the New York office, in order to verify credit standing and the accuracy of quoted prices. The orders were then returned to the

Customer Service Representative.

4. If there were errors a Service Representative was responsible for contacting the customer and correcting the problem. Once all errors had been eliminated from the orders they were transmitted electronically to the factory in Georgia via telephone lines. The New York office transmitted orders twice every working day and also sent hard copies of the orders to the factory by overnight courier for verification. At this step an acknowledgement was sent out to the customer in the form of a hard copy of the order on East River's standard order form.

5. At the factory the electronic transmission was printed out on forms that were used by Production Planning and Scheduling so that the new orders could be scheduled onto the machines.

The normal order processing time, between receipt of the order and transmission to the mill, was 3 days. However, during busy periods it could easily take 5 days. It was during these periods that orders could be overlooked and not processed for as long as two weeks.

<u>Planning and Scheduling Large Orders</u>

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The problems of scheduling production also increased during busy periods. It was not unusual to receive a large order from an important customer with a promised delivery date only 2 or 3 days in the future. In these situations the production schedule would have to be changed so the new order could be inserted and other orders rescheduled.[2] Each schedule change required 30 minutes, and the company was currently making approximately 50 changes per week in order to schedule all of the necessary products and respond to complaining customers. Machines produced an average of 22 tons per hour and the company estimate the average revenue for kraft paper at $145 per ton.

[2]The production schedule was normally set on Thursday for the following week (Monday through Sunday). The company estimated that it cost $1,000 per hour to fully staff and run a paper machine.

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Exhibit 1

East River Paper Manufacturing

Operating and Financial Statistics, Year Ended August 31

INCOME (000)	1985*	1984	1983	1982	1981
Net Sales	$64,243	$65,706	$59,806	$53,359	$54,790
Cost of Goods Sold	$47,034	$46,950	$43,031	$40,068	$37,956
Selling/distribution general & admin	$14,112	$13,751	$11,796	$10,987	$13,112
Net Income B4 Tax	$2,329	$4,654	$4,388	$1,629	$3,666
Federal Taxes	$997	$2,165	$2,106	$711	$1,643
Net Income	$1,349	$2,506	$2,299	$935	$2,039
PRODUCTION (000 of Tons)					
Total Tons	309	286	275	246	256
FINANCIAL (000)					
Total Assets	$60,948	$61,616	$60,177	$59,587	$57,697
Fixed Assets	$74,591	$72,663	$69,504	$58,063	$60,098
Reserves for depreciation	$35,161	$33,038	$29,891	$18,173	$20,917
Fixed Assets less Reserves	$39,447	$39,641	$39,630	$39,906	$39,198
Current Assets	$20,643	$20,864	$19,286	$19,197	$17,802
Current Liabilities	$4,863	$6,780	$8,622	$6,929	$5,132
Working Capital	$15,797	$14,101	$10,681	$12,293	$12,688
Funded Debt	$12,568	$11,674	$9,190	$12,674	$11,291
Preferred Stock	$11,163	$11,587	$12,035	$13,389	$13,163
Com. Stock&Surplus	$29,386	$29,360	$28,237	$26,107	$27,090
Preferred Dividend	$660	$684	$709	$620	$760
Common Dividend	$684	$686	$687	$684	$684

* Estimate

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Exhibit 2

East River Paper Manufacturing

Top 30 Participants in the Complex Paper Industry

Company	Tons Produced	Market Segment* 1	2	3	4	5	6
International Paper	4,690,721	X	X	X	X		X
Crown Zellerbach	1,983,630		X	X	X	X	X
St. Regis Paper	1,780,305	X		X	X		X
Kimberly Clark	1,382,400		X	X	X	X	
Weyerhauser	1,330,000	X		X	X		X
West Virginia P & P	1,265,000			X	X		X
Mead	1,247,140			X	X		X
Continental Can	1,200,000				X		X
Union Bag-Camp	1,200,000			X	X		X
Container Corp.	1,066,000						X
Scott Paper	1,058,135	X		X	X	X	
Georgia Pacific	805,857		X	X	X	X	X
Owens-Illinois	729,119						X
Champion Papers	677,400			X	X		X
Packaging Corp	617,876						X
Great Northern	570,000		X	X			
American Can	520,000			X	X	X	X
Fibreboard Paper	460,000						X
Riegel Paper	398,403	X			X		X
Inland Container	388,219						X
Whippany Paper Board	387,709						X
Federal paper Board	375,000						X
Mn. Ontario Paper	371,996		X	X	X		
Consolidated Papers	345,374			X			
KVP Sutherland	328,050			X	X		X
Sonoco Products	312,000						X
Oxford paper	310,686			X			
East River Paper Co.	309,000				X	X	
Olin Mathieson	300,000			X	X		X
Consolidate Packaging	298,461						X

* See page 4 of text for definition of market segments

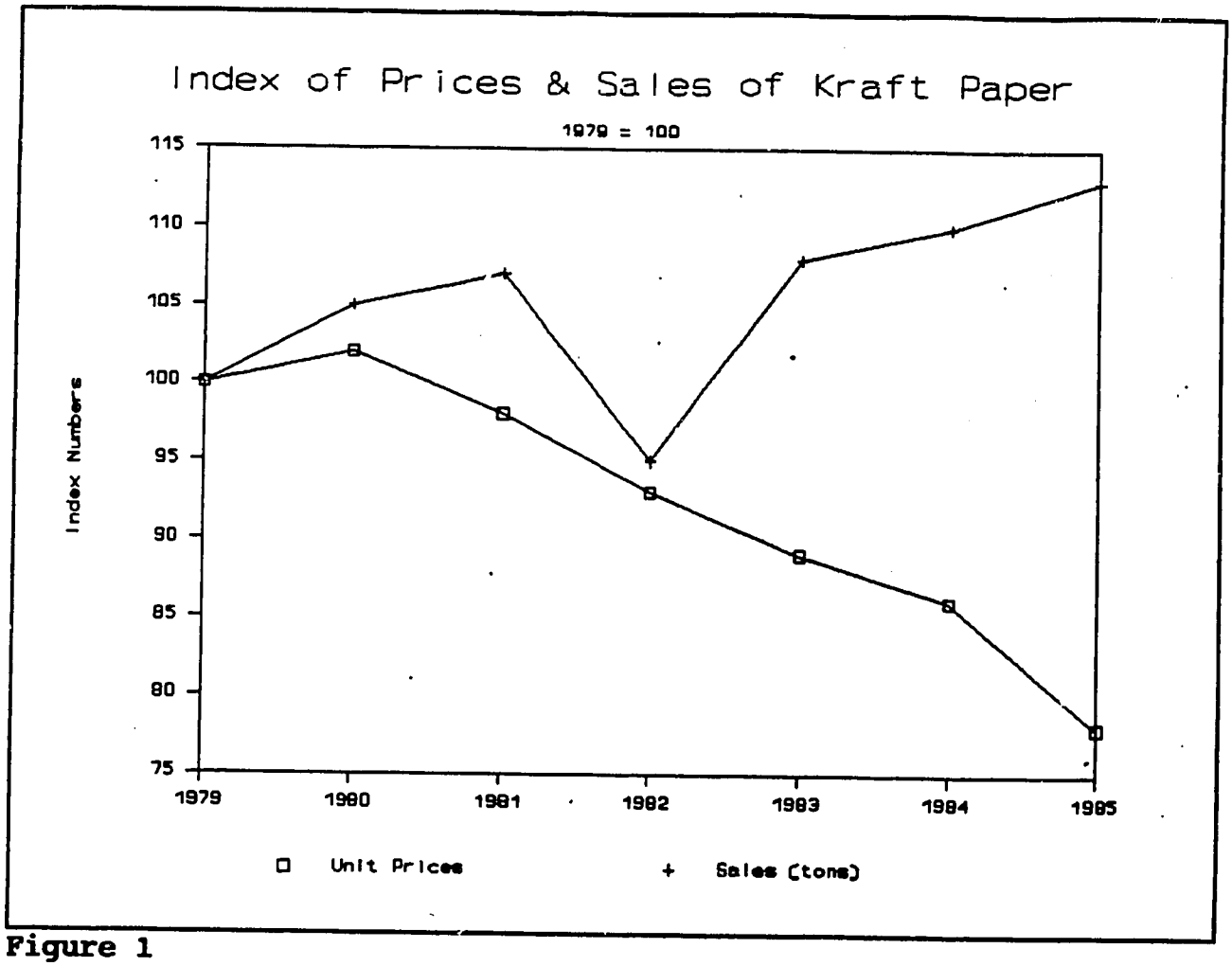
Index of Prices & Sales of Kraft Paper
1979 = 100
115
110
105
100
95
90
85
80
75
Index Numbers
1979
1980
1981
1982
1983
1984
1985
Unit Prices
Sales (tons)

Figure 1

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ACCOUNTING MODULE

May 11-13, 1992
Prague, Czechoslovakia

Session	Day 1 - May 11	Day 2 - May 12	Day 3 - May 13
8:30-10:00	The Function of Accounting in a Market Economy	Preparing Cash-Flow Statements	Usefulness of Management Accounting for Decision-Making
Break			
10:15-11:45	Format and Contents of Published Financial Statements	Developing Ratios from Financial Statements	New Developments in Cost Accounting
Lunch			
1:30-3:00	Reading and Understanding Financial Statements	The Function of Auditors in a Market Economy	
Break			
3:15-4:45	Reading and Understanding Financial Statements	The Function of Management Accounting	

ACCOUNTING
PRAGUE, CZECHOSLOVAKIA

I. FINANCIAL ACCOUNTING

1. The Function of Accounting in a Market Economy
   a. Overall Purpose and General Cocnepts
      (American conceptual statements and basic accounting principles)
   b. Private Sector Rules in the USA
      FASB, GASB, SEC, AICPA
   c. Legislated Rules in the EC
      EC Directives #4, 7, and 8
      Legislation in Individual Countries
      (Corporation Laws and Accounting Laws, The Role of Tax Authorities)

2. Format and Contents of Published Financial Statements
   a. American Statements
      Balance Sheet, Income Statement, Cash Flow Statement (Discussion of major items and rules; e.g., valuation, depreciation, consolidation, leased assets, deferred taxes, etc.)
   b. Domestic Financial Statements

LEARNING GOAL OF SESSIONS 1 AND 2 ON FINANCIAL ACCOUNTING: To understand the objectives of financial statements, their contents, and the rules which have to be followed to put together reliable information.

3. Reading and Understanding Financial Statements: Discussion of balance sheet and footnotes; special emphasis on the equity section; an American annual report from the Quaker Oats Company will be used.

4. Reading and Understanding Financial Statements: Discussion of Income Statement and Footnotes; special emphasis on cost of goods sold, unusual and extraordinary items, discontinued operations, segment reporting, related parties Quaker Oats Company annual report.

LEARNING GOAL OF SESSIONS 3 AND 4 ON FINANCIAL ACCOUNTING: To acquire the ability to read and understand the contents of the annual report of a major corporation.

5. Preparing Cash-Flow Statements
   Preparation of a Cash-Flow Statement from Balance Sheet and Income Statement Date; Different Formats of Cash-Flow Statements

6. Developing Ratios from Financial Statements Procedures for Calculating Ratios (only basic procedures will be discussed - impact of valuation on ratios - analytic use of ratios will be discussed in detail in the Finance Module)

7. Exercise: Calculate some basic ratios from your own financial statements.

LEARNING GOAL OF SESSIONS 5, 6, AND 7 ON FINANCIAL ACCOUNTING: Understanding the procedures which will be used inside and outside the company to develop data for performance evaluation and how such ratios may be changed by different accounting procedures, which can be selected by the company.

II. AUDITING

1. The Function of Auditors in a Market Economy
2. The Auditing Profession
3. Professional Qualifications
4. The Annual Auditing: Purpose and Scope
5. Auditing Standards Applicable to Routine Audits
6. Special Audits

LEARNING GOAL OF SESSIONS 1 THROUGH 6 ON AUDITING: To understand the function of auditors in a market economy; to better understand the rules of auditing and the reliability of audited financial statements.

III. MANAGERIAL ACCOUNTING

1. The Function of Management Accounting
   a. Purpose and Organization of Managerial Accounting
   b. Differences between Financial and Managerial Accounting
   c. Cost Behavior and Break Even Point Analysis

LEARNING GOAL OF SESSION 1 ON MANAGERIAL ACCOUNTING: To understand the need for and the usefulness of cost data for a company in a market environment; to appreciate the necessity of developing a management accounting system for decision making.

2. Usefulness of Management Accounting for Decision-Making
   a. Absorption Costing and Direct Costing - the two most important approaches to arrange cost data
   b. Using relevant cost for special decision (e.g., equipment replacement, make or buy)

3. New Developments in Cost Accounting
   a. Activity Costing and its role in highly competitive markets
   b. The fixed cost problem and its importance for the company (development of new costing approaches such as life cycle costing and strategic costing)

LEARNING GOAL OF SESSIONS 2 AND 3 ON MANAGERIAL ACCOUNTING: To understand various approaches to select appropriate cost for decision making and to understand how changes in technology and market forces will influence cost selection for long and short-term decisions.

Instructors: Professor Byron Ross, CPA, University of Iowa
Dr. Hanns Martin Schoenfeld, University of Illinois
Doc. Dr. Richard Drechsler, University of Economics, Prague

The instructors will act as a team; one or two instructors will be lecturing in each session; the other(s) will be cooperating with additional comments and will be available for questions.

III Neues Recht im Vergleich zu US-amerikanischen GAAP

Nachfolgend wird in Form einer Übersicht versucht, wesentliche Grundsätze und Vorschriften des geltenden neuen deutschen Bilanzierungsrechts den amerikanischen GAAP gegenüberzustellen, um so auf Auffassungsdifferenzen zwischen beiden Rechtskreisen aufmerksam zu machen. Dabei sollen grundsätzliche Unterschiede verdeutlicht werden; auf Hinweise auf die einzelnen Vorschriften und Rechtsquellen wurde in diesem Kapitel bewußt verzichtet.

HGB und GoB	*US-GAAP*
Rechtliche Grundlagen	
Gesetz (HGB, AktG usw.)	SEC - Bestimmungen
GoB (teilweise kodifiziert durch HGB, BFH Urteile, usw.)	APB und FASB-Gutachten
Auslegung ist an dem im Verkehr Erforderlichen orientiert	Auslegung ist mehr an dem im Verkehr Üblichen orientiert
Bestandteile des Jahresabschlusses:	
Bilanz	Bilanz und Eigenkapitalentwicklung
GuV	GuV
Anhang	Anhang (notes)
-	Kapitalflußrechnung
mit Vorjahresvergleich	mit Vergleich der vorausgegangenen zwei Jahre (ausgenommen die Bilanz)
Allgemeine Bilanzierungsgrundsätze	
Gläubigerschutz orientierter Jahresabschluß mit Betonung des Vorsichtsprinzips (mit Imparitäts- und Realisationsprinzip)	Aktionärsorientierter Jahresabschluß mit Betonung des Periodenergebnisses (strenge Periodenabgrenzung)
Maßgeblichkeitsprinzip der Handels- für die Steuerbilanz	
Vollständigkeit und Wesentlichkeit	Wesentlichkeit (stärker betont) und Vollständigkeit
Vergleichbarkeit - Bilanzidentität Bewertungsstetigkeit	Vergleichbarkeit Bewertungsstetigkeit wird als Grunderfordernis der Bilanzierung gesehen - Durchbrechung der Bilanzidentität ist begründet offenzulegen
Wirtschaftliche Betrachtungsweise vor formaljuristischer Form	Wirtschaftliche Betrachtungsweise (in der Anwendung stärker betont)

III New Accounting Law in Comparison with US GAAP

In the following we provide in tabular form a summary of the more important principles and regulations in the new German accounting law contrasted with US GAAP in order to crystalize the main differences between the two sets of conventions. The aim is to emphasise basic differences; a detailed analysis of regulations and legal sources was deliberately avoided within the framework of this introduction.

HGB and GoB	*US GAAP*
Legal Bases	
Laws (HGB, AktG, etc.)	SEC rules.
Required accounting principles (partly codified in HGB, Supreme Tax Court decisions, etc.)	APB opinions, FASB statements
Interpretation is based on required practice	Interpretation is based more on consensus and authoritative support
Components of Financial Statements	
Balance sheet.	Balance sheet Statement of retained earnings.
Profit and loss account. Notes.	Profit and loss account. Notes. Statement of changes in financial position/cash flow statement.
Comparative figures required	Comparatives for two years (only one year's comparatives in balance sheet)
General Accounting Principles	
Financial statements oriented towards protection of creditors with emphasis on the prudence concept (imparity and realisation principles)	Capital market orientation with emphasis on consistent disclosure of results (exact periodic income measurement)
Authoritative position of the financial statements for tax return purposes	
Completeness and materiality	Completeness and materiality (with greater emphasis on materiality)
Comparability - formal balance sheet continuity - consistency in valuation	Comparability - reclassifications permitted in justified cases and to be disclosed consistency in valuation is a basic requirement of accounting
Economic substance over legal form	Principle of substance over form given greater emphasis

HGB and GoB	US GAAP
Bilanz	
Immaterielle Vermögensgegenstände	
Entgeltlich erworben, generell	
Aktivierungspflicht	Aktivierungspflicht
Selbst erstellt	
Nicht aktivierungsfähig	Aktivierungswahlrecht
Aufwendungen für die Ingangsetzung und Erweiterung	
Aktivierungswahlrecht mit Ausschüttungssperre	Nicht aktivierungsfähig (Gründungskosten ausnahmsweise aktivierungspflichtig)
Sachanlagen	
Anschaffungs- bzw. Herstellungskosten	
abzüglich planmäßiger ggfs. außerplanmäßiger Abschreibungen (mit Beibehaltungswahlrecht i. Z. m. dem Maßgeblichkeitsprinzip)	abzüglich planmäßiger Abschreibungen. Außerplanmäßige Abschreibungen sind nur eingeschränkt möglich; eine Beibehaltung des niedrigeren Wertes entfällt.
Leasing	
erläuterungspflichtig im Anhang	eindeutig entsprechend wirtschaftlicher Betrachtungsweise bilanzierungspflichtig
Finanzanlagen	
Anteile und Wertpapiere Anschaffungskosten abzüglich	
ggfs. außerplanmäßiger Abschreibung (mit Beibehaltungswahlrecht i. Z. m. dem Maßgeblichkeitsprinzip)	ggfs. nur eingeschränkt mögliche außerplanmäßiger Abschreibung (ohne Wertaufholungsmöglichkeit)
Beteiligungen	
Bei Beteiligung (ab 20%) mit maßgeblichem Einfluß erfolgt die Bewertung zu Equity	Bei Beteiligung mit wesentlichem Einfluß (widerlegbare Vermutung ab 20%) erfolgt die Bewertung zu Equity
Vorräte	
Bilanzierung zu Anschaffungs- oder Herstellungskosten, d. h. zu	
Istkosten	Ist- oder Standardkosten
Untergrenze der Herstellungskosten	
Einzelkosten	Einzelkosten Angemessene Material- und Fertigungsgemeinkosten

HGB and GoB	US GAAP
Balance Sheet	
Intangible assets	
Purchased for a consideration, generally	
Must be capitalized	Must be capitalized
Self-generated	
Cannot be capitalized	Option on capitalization in defined situations
Start-up and Business Expansion Expenses	
Option to capitalize with restriction on distributions	Cannot be capitalized (exception for formation expenses)
Tangible Assets	
at purchase or manufacturing cost	
Less: Systematic and as appropriate extraordinary depreciation (with right to retain lower values if prerequisite for tax recognition)	Less: Systematic depreciation. Extraordinary lower depreciation only restrictively permitted; retention of lower value not applicable
Leasing	
Contracts to be disclosed in the notes	Capitalized by economic owner based on a series of tests
Financial assets	
Shares and investments at purchase cost	
Less: if applicable, extraordinary write-downs (with right to retain lower values if prerequisite for tax recognition)	Less: extraordinary write-downs in specially defined circumstances (no reinstatement of original values permitted)
Participations	
Holdings giving significant influence (20% or more) accounted for under the equity method	Holdings giving a material influence (refutable assumption from 20% upwards) accounted for under the equity method
Inventories	
at purchase or manufacturing cost	
Actual cost	Actual or standard cost
Lower limit for manufacturing cost	
Direct costs	Direct (marginal) cost. Appropriate materials and labour overheads.

HGB und GoB	US-GAAP
	Angemessene Abschreibungen Eingeschränkte Abwertungsmöglichkeiten
Langfristige Fertigung	
Gewinnrealisierung erfolgt grundsätzlich erst bei Teilabrechnungen	Gewinnrealisierung möglichst periodengerecht, anteilmäßig nach Leistungsfortschritt
Wertpapiere	
Bilanzierung zu Anschaffungskosten	
es sei denn, der Kurswert der entsprechenden Wertpapierkategorie ist niedriger	es sei denn, der Kurswert des gesamten Portefeuilles ist niedriger
Rückstellungen	
Pensionsrückstellungen	
Bilanziell nicht vergleichbar, weil	
Rückstellungsbildung	Abführung an rechtliche selbständige Pensionsfonds
GuV-mäßig grundsätzlich vergleichbar	
Änderung der Pensionszusage führt zur Belastung des entsprechenden Jahres	Änderungen werden auf restliche Dienstjahre verteilt (Periodenabgrenzung)
Sonstige Rückstellungen	
müssen ursächlich vergangenheitsbezogen sein; der Eintritt muß	
möglich und vertretbar sein	wahrscheinlich und abschätzbar sein
Aufwandsrückstellungen sind möglich	Es muß stets eine Verpflichtung gegenüber Dritten bestehen
Latente Steuern	
passivisch · Bilanzierungspflicht aktivisch · Bilanzierungswahlrecht mit Ausschüttungssperre	generell · Bilanzierungspflicht
Bemessungsgrundlage: zukünftige Steuerminderung/-erhöhung	Bemessungsgrundlage: Steuererhöhung/-verminderung im Jahr der Entstehung
Gewinn und Verlustrechnung	
Gesamtkostenverfahren oder Umsatzkostenverfahren	Umsatzkostenverfahren
Konzernabschluß	
Währungsumrechnung	
Keine vorgeschriebene Methode, in jedem Fall erläuterungspflichtig	Stichtagskurse: Bilanz Durchschnittskurse: GuV

HGB and GoB	US GAAP
	Appropriate portion of depreciation Limited ability to make write downs
Long-term construction-type contracts	
Completed contract method (total contract or previously agreed sections)	Percentage of completion method
Securities	
at cost	
Unless quoted/market value of the individual security is lower	Unless quoted/market value of whole portfolio is lower
Accruals	
Pension accruals	
Balance sheet treatment not comparable because	
Costs are accrued in the balance sheet	Costs are funded in independent pension funds
Profit and loss treatment basically similar	
Change in pension benefits charged in full in the year of change	Effect of changed assumptions and plan benefits are spread over active years of service (matching principle)
Other accruals	
Cause must lie in a past event; charge must be	
possible and reasonable	probable and estimable
Expense anticipation accruals are permitted in certain cases	There must exist a commitment to a third party
Deferred Taxes	
Liabilities must be accrued	Generally: Comprehensive tax allocation must be reflected in the financial statements
Optional recording of prepaid taxes	
Liability method	Deferral method
Profit and Loss Account	
Type of expenditure or Cost of sales format	Cost of sales/operational format
Consolidated Financial Statements	
Foreign Currency Translation	
No prescribed method; Must be described in notes	Balance sheet at year-end rates; Profit and loss account at average rates

International Accounting Standards

IAS 1 DISCLOSURE OF ACCOUNTING POLICIES.
(Effective Jan. 1, 75)

Certain assumptions and principles underlie the preparation of financial statements. The enterprise is viewed as continuing in existence without intent of liquidation (going concern). Financial statements shall express substance over legal form; utilize of the accrual method of recognizing revenues when earned and costs where incurred and have to be consistent among entities and time periods. The financial statements must be clear and understandable, disclosing significant information in order for users (e.g., shareholders, creditors) to make informed decisions.

IAS 2 VALUATION AND PRESENTATION OF INVENTORIES IN THE CONTEXT OF THE HISTORICAL COST SYSTEM. (Effective Jan. 1, 76)

Inventories include items of tangible property (a) held for sale in the ordinary course of business, (b) in process of production for such sale, or (c) to be consumed in the production of goods or services. Inventory is recorded at cost including purchase price and other expenditures incurred directly or indirectly to bring an item to its present location and condition. When values or selling price decline, historical cost are to be replaced by net realizable value. Production overhead costs should be systematically allocated to inventories, other overhead should be included only if they relate to putting inventories in their present location and condition.

IAS 3 CONSOLIDATED FINANCIAL STATEMENTS.
(Effective Jan. 1. 1977)

When a corporation owns more than 50% of the voting stock of another corporation, a parent-subsidiary relationship exists necessitating the preparation of combined or consolidated financial statements. If control by the parent is temporary or nominal or if presentation of the subsidiary's statements may confuse the readers, separate financial statements should be prepared. Only transactions with outside parties should be included in the financial statements, intercompany relationships must be eliminated. The parent's investment in the subsidiary can be carried at the cost or equity method which affects the handling of profit, loss, and dividends distributions from the subsidiary. Adequate disclosure is necessary to provide users of the financial statements with pertinent consolidation information.

IAS 4 DEPRECIATION ACCOUNTING. (Effective Jan. 1, 1977)

Depreciation accounting is a method of allocating the cost of an asset over its limited useful life in a systematic and rational manner. The actual depreciation method chosen should realistically measure the expiration of the asset to make appropriate depreciation charges against income for each period. Disclosures concerning depreciation should include depreciation expense for the period, appropriate class divisions of depreciable assets, accumulated depreciation to date by class of assets, and the basic method chosen to compute the depreciation by major class of asset.

IAS 5 INFORMATION TO BE DISCLOSED IN FINANCIAL STATEMENTS. (Effective Jan. 1,77)

"All material information should be disclosed that is necessary to make the financial statements clear and understandable." This would include the name and description of the firm along with the associated currency. This standard does not propose a format for the financial statements, yet information should be categorized into the proper accounts on the balance sheet and income statement along with any information useful for making informed financial decisions.

IAS 6 ACCOUNTING RESPONSES TO CHANGING PRICES. (Superseded by IAS 15)

IAS 7 STATEMENT OF SOURCE AND APPLICATION OF FUNDS. (Effective Jan. 1, 1978)

The Funds statement (Statement of Changes in Financial Position) is designed to present information on the financing and investing activities of a business enterprise. The format chosen to reflect the changes in working capital of the enterprise is that which provides the most information to users. Other benefits provided by the funds statement include assessing future cash flows and financial flexibility and liquidity of the firm. If consolidated balance sheets and income statements are presented, the funds statement should also be prepared on a consolidated basis.

IAS 8 UNUSUAL AND PRIOR PERIOD ITEMS AND CHANGES IN ACCOUNTING POLICIES. (Effective Jan. 1, 79)

Extraordinary items are transactions or events both unusual in nature and infrequent in occurrence. They should be presented on the face of the income statement or adequately disclosed in notes. Prior period items include correction of errors in the financial statements of prior periods through an adjustment to the

beginning retained earnings balance or in the net income computation.

Changes in accounting policies are made only by adoption of a new accounting policy or a change in existing policy to a more appropriate one. Examples include shifting from LIFO to FIFO cost flows assumptions for inventory or a change in the method of depreciating previous recorded assets. Estimate changes include revising the uncollectible receivable balance. The all inclusive method of recording transactions is proposed along with adequate disclosure of material items.

IAS 9 ACCOUNTING FOR RESEARCH AND DEVELOPMENT ACTIVITIES. (Effective Jan. 1, 1980)

Research and development costs should normally be expensed when incurred except when directly recoverable from future revenues. Research is planned search or critical investigation aimed at discovery of new knowledge to be used in developing a new product or new process. Development is the translation of research findings and other knowledge into the design of a new product or into significant improvements to an existing products or processes. Proper disclosure should be made of the amounts expensed or the balance of the unamortized deferred development costs.

IAS 10 CONTINGENCIES AND EVENTS OCCURRING AFTER THE BALANCE SHEET DATE. (Effective on Jan. 1, 80)

Contingency is "a condition or situation, the ultimate outcome of which, gain or loss, will be confirmed only on the occurrence, or non-occurrence, of one or more uncertain future events." Events after the balance sheet date are those that occur before the financial statements are issued. The conditions for these events may have existed before the balance sheet date or arose afterwards. Loss contingencies should be accrued by a charge on the income statement if it is probable an asset has been ia:paired or a liability incurred at the balance sheet date. Contingent gains are not accrued but may be disclosed if the existence of the gain is probable. When events occurring after the balance sheet date existed at the balance sheet date, the asset and liability accounts should be adjusted, otherwise adequate disclosure should be made. Disclosure procedures are further defined in the statement.

IAS 11 ACCOUNTING FOR CONSTRUCTION CONTRACTS. (Effective Jan. 1, 80)

Long term construction contracts are accounted for by the completed contract method end the percentage of completion method. Under the completed contract method, recognition of profit occurs at completion. All costs are deferred to completion and then

matched to revenues. The percentage of completion method recognizes contract profit during construction based on expected total profit and estimated progress in the current period. Total expected losses are recognized as soon as they are estimated for both contract methods. The percentage of completion method is recommended when estimates of cost to complete and the estimate of progress toward completion are dependable; otherwise the completed contract method should be used.

IAS 12 ACCOUNTING FOR TAXES ON INCOME. (Effective Jan. 1, 81)

The differences between book income and taxable income relate to timing differences which may be either permanent or revise themselves within 3 years. Permanent differences include (depending on each country) life insurance proceeds and political campaign contributions. Temporary timing differences include depreciation charges and installment sales. The tax effects of timing differences should be accounted for by the deferred or liability method. Taxes recovered through a carryback of an operating loss should be included in the loss years net income. Tax refunds identified with loss carry forwards may be recognized in the current period if future realization of income is assured.

IAS 13 PRESENTATION OF CURRENT ASSETS AND CURRENT LIABILITIES. (Effective Jan. 1, 1981)

Current assets encompass cash and other assets or resources expected to be realized in cash or sold or consumed during the normal operating cycle. (e.g., cash, marketable securities, inventories, etc.). Any limitation placed on the withdrawal of cash may result in another designation. Current liabilities designate obligations expected to be satisfied through the expenditures of cash or creation of other current liabilities. If the enterprise intends to refinance the obligations on a long term basis and its intent is supportable, these obligations should be reclassified. Current liabilities include accounts and notes payable.

IAS 14 REPORTING FINANCIAL INFORMATION BY SEGMENT. (Effective Jan. 1, 83)

Enterprises whose securities are publicly traded should report financial information on two main kinds of segment actively: 1) segments defined along industry or business lines, and 2) segments defined according to geographical location. A series of 10 percent tests are sometimes utilized to delineate the actual number of segments to be reported. Financial information for each segment should include 1) revenue information, 2) operating profit or loss, 3) assets used by the segment, and 4) any other related disclosures. Users of financial information have found that

segment information enables them to predict earnings capacity more satisfactorily than consolidation information.

IAS 15 INFORMATION REFLECTING THE EFFECTS OF CHANGING PRICES. (Effective Jan. 1, 1982)

Prices change due to specific supply and demand functions or from general and social forces at work within the economy. General price changes affect the purchasing power of money.

Financial statements are usually prepared on a historical cost basis which does not reflect general and specific price changes, except for the extent that inventory and fixed assets may be revalued. There are currently two approaches available to modify financial statements for changes in price levels: 1) General purchasing power approach - restates some or all the items in the financial statements for changes in general price levels and 2) Current Cost Approach - utilizes replacement cost as the primary measurement basis.

Companies currently utilizing the historical cost basis to present financial statements should also provide supplementary information on the effects of price changes on key accounts or on the statements as a whole. The extent of the changes will correspond to a cost-benefit analysis between more meaningful data and the cost to general this data. Companies are encouraged to disclose as much as possible and experiment with different methods.

IAS 16 ACCOUNTING FOR PROPERTY, PLANT, AND EQUIPMENT. (Effective Jan. 1, 1983)

Property, plant, and equipment (land, building structures, and equipment) are acquired for use in operations and not for resale. They possess physical substance and are long-term in nature. Property, plant, and equipment is usually valued on the balance sheet at the cost to obtain the asset and bring it to the location and condition necessary for its intended use. The cost of self-constructed assets is measured by the direct labor and materials required for construction along with a pro rata portion of overhead.

IAS 17 ACCOUNTING FOR LEASES. (Effective Jan. 1, 1984)

The major issue in accounting for leases is the questions of who bears the risks and rewards incident to ownership of the leased asset. A lease is classified as a <u>finance lease</u> if the risks and benefits have transferred to the lessee. Otherwise, it is accounted for as a rental agreement (operating lease).

The accounting treatment of sales-type (finance) leases in the lessor's (manufacturer or dealer) financial statements separates: (1) sales revenue recorded at the sum of the present values of the minimum lease payments plus the unguaranteed residual value; (2) cost of sales (the carrying value or cost of the leased asset, and (3) the difference between the sales revenue and cost of sales, which represents the profit element. The lease is carried as a receivable. Direct financing leases are recorded by the lessor as sales-types leases yet exclude the manufacturer's profit. A lease receivable account is charged with the total payments to be received by the lessor. An asset account is credited for its cost and the difference represents interest income to be earned over the life of the asset.

The lessee accounts for a financing lease by debiting an asset account for the Present value of both the lease payments and guaranteed residual with an offsetting credit to a liability account. The asset shall be amortized over the life of the lease or the useful life of the asset which ever is shorter.

For an operating lease, the lessor records rental income and the lessee rental expense. The asset appears only on the books of the lessor

Basically, all terms of the leasing arrangement have to be disclosed. Lessees should record the total amount of assets classified as finance leases and the related liabilities. Lessors should record the gross investments in finance leases along with any related unearned income and unguaranteed residual values.

IAS 18 REVENUE RECOGNITION. (Effective Jan. 1, 84)

Revenue is recognized when the revenue: 1) is certain to occur, 2) is measurable, and 3) is earned (or significant activities remain to be performed). Most revenue recognition occurs at the point of sale, but it can also occur at the time the product or service is produced or at the time cash is collected for the product or service. The statement mentions the transfer of risks from buyer to seller as the time of revenue recognition for the sale of goods. In the rendering of services, the completed contract and percentage completion methods are acceptable.

IAS 19 ACCOUNTING FOR RETIREMENT BENEFITS IN THE FINANCIAL STATEMENTS OF EMPLOYERS. (Effective Jan. 1, 84)

A defined-benefit plan (private pension plan) is an arrangement whereby a company makes estimated payments to a funding agency or insurance company to provide for its retired employees. The accrual basis of accounting for pension costs is required instead of the cash basis which was previously used (e.g., pay as you go or terminal funding). Pension costs are actuarially

determined and are classified on a basis which distinguishes between service credits earned by an employee in the current year and credits for years of service prior to the adoption of the pension plan . The description of the plan, the company,s accounting and funding policies, and the actual provision for pension cost should be included in the financial statements along with other disclosures (listed in this statement).

IAS 20 ACCOUNTING FOR GOVERNMENT GRANTS AND DISCLOSURE OF GOVERNMENT ASSISTANCE. (Effective Jan. 1, 84)

The accounting treatment of government grants can be handled by the capital approach (grant credited to shareholders' interests) or the income approach (grant is included in income over one or more periods on a systematic and rational basis.) The income approach is the preferred method. Government grants are not recognized in the income statement unless there is reasonable assurance that the company will abide by the conditions attached to them. If a government grant relates to an asset, the company may present the grant in the financial statements as deferred income or reduce the carrying value of the asset. The accounting policy followed, nature, and conditions surrounding the grants should be disclosed along with other pertinent information.

IAS 21 ACCOUNTING FOR THE EFFECTS OF CHANGES IN FOREIGN EXCHANGE RATES. (Effective Jan. 1, 1985)

Financial statements are to be translated at the closing rate; differences arising from exchange rate fluctuations are to be charged to shareholder's interest. Operations which are an integral part of the parent are to be translated using the temporal method. For all settlements the current period gains/losses are to be charged to income. Also all gains/losses in connection with forward transactions and monetary items are to be charged to income.

Exchange differences from severe devaluation or depreciation of foreign currencies may be included (subtracted) from the carrying amount of related assets.

Statements subject to high inflation should either be adjusted or carried at the temporal method.

The method of translation and the amounts carried to shareholder's interest or income during the period should be disclosed.

IAS 22 ACCOUNTING FOR BUSINESS COMBINATIONS. (Effective Jan. 1, 1985)

There are two main methods of accounting for business combinations: 1) the purchase method, and 2) the pooling of interests method. Under the purchase method, the business combination is recorded at cost which is based on the fair value of the property given up or received, whichever is more clearly evident. The purchase price is assigned to specific assets (tangible and intangible) with the remainder recorded as goodwill. The pooling of interests method accounts for the business combination as a merger without recognition of goodwill upon acquisitions. The combined assets and liabilities are recorded at their book or carrying values.

Immediately following the combination, the following disclosures should be made: a) names and descriptions of the combining enterprises, b) effective date of the combination for accounting purposes, c) the method of accounting used to reflect the combination. Other required disclosures are listed in the statement.

IAS 23 CAPITALIZATION OF BORROWING COSTS. (Effective Jan. 1, 1986)

Interest costs incurred during the period of time an asset is being prepared for its intended use should be capitalized as part of the acquisition cost. The interest cost capitalization period begins with the first expenditure for the asset and continues until the asset is substantially complete. The amount of interest cost which may be capitalized cannot exceed the actual interest costs incurred for the period. An accumulation of weighted-average expenditures based upon time is applied to a weighted-average interest rate to determine the amount to be capitalized for the period. Borrowings which can be matched with specific interest rates should not be included within the weighed-average interest rate calculations.

The total amount of interest costs incurred during the period should be disclosed and separated into expensed and capitalized amounts.

IAS 24 RELATED PARTY DISCLOSURES. (Effective Jan. 1, 1988)

Related parties include the reporting enterprise, its affiliates, key management personnel, principal owners, and other entities or individuals which have significant influence over another entity. Transactions between related parties should be based upon substance unless the parties involved have not dealt at arm's length.

All related party transactions which are not eliminated within consolidated financial statements should be disclosed; this does not include related party compensation arrangements. The following

disclosures should be: 1) the nature of the related party relationship, 2) a description of the related party transaction, and 3) the amounts of transactions among the related parties along with any changes from previous periods.

IAS 25 ACCOUNTING FOR INVESTMENTS. (Effective Jan. 1, 1987)

Investment should be classified, at least for measurement purposes, as either current assets or long-term assets. Current investments should be carried in the balance sheet at either market value or the lower of cost and market value either on as aggregate portfolio basis or an individual investment basis. Long-term investments should be classified in the balance sheet at either cost or revalued amounts, or the lower of cost and market value determined on a portfolio basis.

An increase in carrying amount arising from the revaluation of long-term investments should be credited either 1) to owners' equity as a revaluation surplus or 2) to income to the extent that it offsets the previously recorded decrease. A decrease in carrying amount should be charged either to income or against the revaluation surplus to the extent that it offsets the previously recorded increase. In creases or decreases in carrying amount carried at market value should be included in income or be accounted for in accordance with the same procedures as for long-term investments.

On disposal of an investment the difference between net disposal proceeds and the carrying amount should be charged or credited to income. For long-term investments re-classified as current investments, transfers should be made at the lower of cost and carrying amount. Disclosure procedures are further defined in the statements.

IAS 26 ACCOUNTING AND REPORTING BY RETIREMENT BENEFIT PLANS. (Effective Jan. 1, 1988)

This statement deals with the contents of reports by retirement benefit plans where such reports are prepared. It regards a retirement benefit plan as a reporting entity separate from the employers of the participants in the plan. All other IAS apply to the reports of retirement benefit plans to the extent that they are not superseded by this Statement.

This statement deals with accounting and reporting by the plan to all participants as a group. It complements IAS 19, Accounting for Retirement Benefits in the Financial Statements of Employers. It does not deal with reports to individual participants about their retirement benefit rights.

Retirement benefit plans may be defined contribution plans or defined benefit plans. Many require the creation of separate funds, which may or may not have separate legal identity and may or may not have trustees, to which contributions are made and from which retirement benefits are paid. This statement applies regardless of whether such a fund is created and regardless of whether there are trustees.

Retirement benefit plans with assets invested with insurance companies are subject to the same accounting and funding requirements as privately invested arrangements. Accordingly, they are within the scope of this statement unless the contract with the insurance company is in the name of a specified participant or a group of participants and the retirement benefit obligation is solely the responsibility of the insurance company.

This statement does not deal with other forms of employment benefits such as employment termination indemnities, deferred compensation arrangements, long-service leave benefits, special early retirement or redundancy plans, health and welfare plans or bonus plans. Government social security type arrangements are also excluded from the scope of this statement.

IAS 27 CONSOLIDATED FINANCIAL STATEMENTS AND ACCOUNTING FOR INVESTMENTS IN SUBSIDIARIES. (Effective Jan. 1, 1990)

This statement supersedes IAS 3 except in so far as that statement deals with accounting for investments in associates. A parent, other than a parent mentioned in paragraph 27, should present consolidated financial statements which include all foreign and domestic subsidiaries, other than those referred to in paragraph 29. Intragroup balances and intragroup transactions and resulting unrealized profits and losses (unless cost cannot be recovered) should be eliminated in full. Investments in subsidiaries that are included in the consolidated financial statements should be either accounted for using the equity method, or carried at cost or revalued amount. Adequate disclosure is required to users with pertinent consolidation information.

IAS 28 ACCOUNTING FOR INVESTMENTS IN ASSOCIATES. (Effective Jan. 1, 1990)

This statement supersedes IAS 3 in so far as that statement deals with accounting for investments in associates. An associate is an enterprise in which the investor has significant influence and which is neither a subsidiary nor a joint venture of the investor.

In consolidated financial statements, an investment in an associate should be accounted for under the equity method except when the investment is intended to be disposed in the near future

in which case it should be accounted for under the cost method. In separate financial statements, an investment in an associate should be either (a) accounted for using the equity method or the cost method; or (b) carried at cost or revalued amounts. Disclosures concerning investments in a associates should include an appropriate listing and description of significant associates, and the methods used to accounting for such investments.

IAS 29 FINANCIAL REPORTING IN HYPERINFLATIONARY ECONOMIES. (Effective Jan. 1, 1990)

This statement applies to the primary financial statements, including the consolidated financial statements, of any enterprise that reports in the currency of a hyperinflationary economy.

In a hyperinflationary economy, reporting of operating results and financial position in the local currency without restatement is not useful. Money loses purchasing power at such a rate that comparison of amounts from transactions and other events that have occurred at different times, even within the same accounting period, is misleading.

This statement does not establish an absolute rate at which hyperinflation is deemed to arise. It is a matter of judgement when restatement of financial statements in accordance with this statement becomes necessary. Hyperinflation is indicated by characteristics of the economic environment of a country which include, but are not limited to, the following:

(a) the general population prefers to keep its wealth in nonmonetary assets or in a relatively stable foreign currency. Amounts of local currency held are immediately invested to maintain purchasing power;
(b) the general population regards monetary amounts not in terms of the local currency but in terms of a relatively stable foreign currency. Prices may be quoted in that currency;
(c) sales and purchases on credit take place at prices that compensate for the expected loss of purchasing power during the credit period, even if the period is short;
(d) interest rates, wages and prices are linked to a price index; and
(e) the cumulative inflation rate over three years is approaching or exceeds, 100%.

It is preferable that all enterprises that report in the currency of the same hyperinflationary economy apply this statement from the same date. Nevertheless, this statement applies to the financial statements of any enterprise from the beginning of the

reporting period in which it identifies the existence of hyperinflation in the country in whose currency it reports.

IAS 30 DISCLOSURES IN THE FINANCIAL STATEMENTS OF BANKS AND SIMILAR FINANCIAL INSTITUTIONS (Effective, Jan.1, 1991)

This Statement deals with disclosures in the financial statements of banks and similar financial institutions (subsequently referred to as banks). It discusses specific disclosures pertinent to banking such as contingencies and commitments including off-balance-sheet Items, maturities of assets and liabilities, concentrations of assets, liabilities, and off-balance-sheet items, and losses on loans and advances. It also encourages the presentation of a commentary on the financial statements which deals with such matters as the management and control of liquidity and risk.

For the purposes of this Statement, the term "bank" includes all financial institutions one of whose principal activities is to take deposits and borrow with the objective of lending and investing and which are within the scope of banking or similar legislation. The Statement is relevant to such enterprises whether or not they have the word "bank" in their name.

Banks represent a significant and influential sector of business worldwide. Most individuals and organizations make use of banks, either as depositors or borrowers. Banks play a major role in maintaining confidence in the monetary system through their close relationship with regulatory authorities and governments and the regulations imposed on them by those governments. Hence there is considerable and widespread interest in the well-being of banks, and in particular their solvency and liquidity and the relative degree of risk that attaches to the different types of their business. The operations, and thus the accounting and reporting requirements, of banks are different from those of other commercial enterprise. This Statement recognizes their special needs.

This Statement supplements other International Accounting Standards which also apply to banks unless they are specifically exempted in a Statement.

This Statement applies to the separate financial statements and the consolidated financial statements of a bank. Where a group undertakes banking operations, this Statement is applicable in respect of those operations on a consolidated basis.

IAS 31 FINANCIAL REPORTING OF INTERESTS IN JOINT VENTURES (Effective Jan. 1, 1992)

This statement deals with accounting for interests in joint ventures and the reporting of joint venture assets, liabilities,

income and expenses in the financial statements of venturers and investors, regardless of the structures or forms under which the joint venture activities take place.

All joint ventures have two common characteristics:

(a) two or more venturers are bound by a contractual arrangement; and
(b) the contractual arrangement establishes joint control.

After these prerequisites have been met, joint ventures are divided into three broad types.

Jointly Controlled Operations involves the use of each venturers' assets and other resources without an establishment of a corporation, partnership or other entity, or a financial structure that is separate from the venturers themselves. Each venturer uses its own property, plant and equipment and carries its own inventories. It also incurs its own expenses and liabilities and raises its own finance, which represent its own obligations. This differs from **Jointly Controlled Assets** in that this type involves joint control, and often the joint ownership, by the venturers of one or more assets contributed to, or acquired for the purpose of, the joint venture and dedicated to the purposes of the joint venture. The assets are used to obtain benefits for the venturers. **Jointly Controlled Entities** are joint ventures which involves the establishment of a corporation, partnership or other entity in which each venturer has an interest. The contractual relationship determine each venturer's rights and obligations in all of the three types.

This Statement also provides guidance on reporting requirements for interests in Jointly Controlled Entities in the consolidated financial statements of a venturer, application of proportionate consolidation in the consolidated financial statements of a venturer, interests in jointly controlled entities in the separate financial statements of a venturer, transactions between a venturer and a joint venture, interests in joint ventures in the financial statements of an investor and operators of joint ventures. Finally, disclosure is required in accordance with IAS 10, Contingencies and Events Occurring after the Balance Sheet Date, in aggregate amount, unless the probability of loss is remote, separately from the amount of other contingencies. It also requires disclosure in accordance with IAS 5, Information to be Disclosed in Financial Statements, in aggregate amount separately from the amount of other commitments.

FASB Statement No. 1 Disclosure of Foreign Currency Information (superseded by FASB-8), Effective 11/30/73

FASB Statement No. 2 Accounting for Research and Development Costs (R&D), Effective 1/1/75

Research is the planned effort of a company to discover new information that will help create a new product or process or greatly improve an existing one. Development uses the research findings to formulate a plan to accomplish the desired result. Most Research and Development (R&D) costs are expensed when incurred except R&D materials, equipment, and facilities which may have alternate uses, then they are capitalized. Depreciation on these capitalized items are expended in the income statement. The amount of R&D charged to expense should be disclosed in the financial statements of each period for which an income statement is presented.

FASB Statement No. 3 Reporting Accounting Changes in Interim Financial Statements, supersedes APB-28 paragraph 2] and amends APB-28 para 31, Effective 12/31/74

This statement amends APB #8 on the way cumulative effect-type accounting changes are handled in interim financial statements. "If a cumulative effect-type accounting change is made during the first interim period of an enterprise's fiscal year, the cumulative effect of the change on retained earnings at the beginning of that fiscal year shall be included in net income of the first interim period ..." If the change is made in other than the first interim period of the fiscal year, no cumulative effect is included in net income, instead, the prechange interim periods of the fiscal year are to be restated by applying the newly adopted accounting principle. The cumulative effect on retained earnings must be shown in the first period of the fiscal year.

Specific disclosure information is presented in the financial statements concerning the nature and reason for the change, the effect of the change, and EPS data surrounding the change. In determining the materiality of a change as to whether it should be reported in the financial statements or not, consideration should be given to the estimated income for the fiscal year and the effect of the change on the trend of earnings.

Legend of Abbreviations Used Throughout This Article

APB = Accounting Principles Board
GAAP = Generally Accepted Accounting Principles
ARB = Accounting Research Bulletin
EPS = Earnings per Share
FASB = Financial Accounting Standards Board
AICPA = American Institute of Certified Public Accountants

FASB Statement No. 4

Reporting Gains and Losses from Extinguishment of Debt, amends APB-30. (amended by FASB-64), Effective 3/31/75

Debt is considered to be extinguished when the debtor pays the creditor or the debtor is legally released from the debt and therefore relieved of his obligation. An early extinguishment of debt occurs when the obligation is satisfied before the scheduled maturity date of the debt security. The gain or loss is calculated as the difference between the reacquisition price and the net carrying amount of the debt on the date of extinguishment.

Gains and losses from the extinguishment of debt that are included in the determination of net income are to aggregated and, if material, classified as an extraordinary event (net of the related tax effect).

1. Under the provisions of FASB-64, gains or losses from the extinguishment of debt made within one year to satisfy current or future sinking-fund requirements are to be included in income from continuing operations.

Sufficient disclosure should be made in the statements or notes to enable users to evaluate the significance of the gains or losses. This would include a description of the transaction and the source of funds to extinguish the debt, the related income tax effect, and per share amount of the gain or loss (net of tax).

FASB Statement No. 5

Accounting for Contingencies (Supersedes Ch. 6, ARB-43 and ARB-50), Effective 7/1/75

Contingency is defined in the statement as "an existing condition, situation, or set of circumstances involving uncertainty as to possible gain (gain contingency) or loss (loss contingency) to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur."

The likelihood that an event will occur can fall within a certain range from probable to remote. The following definitions are given in this statement:

a. Probable - The future event is likely to occur.
b. Reasonably possible - The chance of the future event occurring is more than remote but less than likely.
c. Remote - The chance of the future event occurring is slight.

Loss Contingencies

Examples of loss contingencies might include:

a. Collectibility of receivables.
b. Obligations related to product warranties and product defects.
c. Threat of expropriation of assets.
d. Pending or threatened litigation.

An estimated loss from a loss contingency shall be accrued by a charge to income if both of the following conditions are met:

a. It is probable at the balance sheet date that an asset has been impaired or a liability incurred.
b. The amount of the loss can be reasonably estimated.

Loss Contingency Disclosures

1. The nature and the amount of the contingency should be disclosed if material.
2. For loss contingencies which are not to be accrued yet a reasonable possibility of loss exists:
   a. Disclose the nature of the contingency.
   b. Estimate the possible range of loss.
3. If a loss contingency develops after the balance sheet date, but before the statements are issued, disclosure of the nature and the amount of the contingency may be necessary.
4. Certain loss contingencies are to disclosed even if the possibility of loss is remote:
   a. Guarantee's of others' debts.
   b. Standby letters of credit by banks.
   c. Guarantees to repurchase receivables.

General or unspecified business risks do not meet the requirements for accrual, therefore no accrual for loss should be made. The statement also addresses appropriations of retained earnings which are not to be shown outside of shareholders' equity. An appropriation of retained earnings

is a reclassification of retained earnings for a specified purpose; management wishes to keep a portion of retained earnings from being distributed as dividends. Some enterprises have classified a portion of retained earnings as appropriated for loss contingencies which is allowed when shown within the stockholders' equity section of the balance sheet. No costs or losses can be charged to an appropriation account nor may any appropriation be transferred to income.

In accounting for a loss contingency, a debit is made to a loss account (presented among other expenses in the income statement), and a corresponding credit to an estimated liability which is treated similar to a current liability.

Gain contingencies are not to be recognized in the accounts, yet they should be adequately disclosed with due care so as not to be misleading.

Other required disclosures per ARB and APB pronouncements remain in effect.

FASB Statement No. 6 Classification of Short-term Obligations Expected to be Refinanced, Effective 12/31/75

Short-term obligations should be classified as current liabilities ..less they are expected to be refinanced on a long-term basis. This expectation or intent should be supported by the actual issuance of a long-term obligation whole proceeds are to be used to retire the short-term obligation. The actual issuance of long-term debt is not necessary if prior to the issuance of the financial statements the company has entered into an agreement that enables it to refinance a short-term obligation on a long-term basis. The company cannot exclude from current liabilities any more than the actual proceeds used to retire the obligation or the amount provided for in the financing agreement. "Short-term obligations that are repaid after the balance sheet date but before funds are obtained from long-term financing are to be classified as current liabilities at the balance sheet date ... in that current assets were used to satisfy the liabilities."

FASB Statement No. 7 Accounting and Reporting by Development Stage Companies, Effective 1/1/76

A company is a development-stage company if current efforts are utilized to establish the organization or if principle operations have not generated significant revenues. The company's financial statement must be issued in accordance with generally accepted accounting principles which would govern, for instance, whether the company should expense, capitalize, or defer their operating costs. It is possible that an item may be expensed on the subsidiary's financial statements and capitalized on the parent's.

Development-stage company financial statements include:

1. A balance sheet with cumulative net losses termed "deficit accumulated during development stage".
2. An income statement with revenues and expenses for each period being presented.
   --disclose cumulative expenses and revenues from the inception of the development stage.
3. A statement of changes in financial position including disclosure of a cumulative total of the sources and uses of funds from inception.
4. Statement of owner's investment including:
   a. Dates of issuance and number of shares, warrants, etc.
   b. Dollar amounts must be assigned to each issuance an for noncash consideration.
   c. Dollar amounts received for each issuance or basis valuing non-cash consideration.
5. Identification of statements as those of development stage company.
6. When normal operations commence, disclose that company no longer in the development stage.

FASB Statement No. 8 — Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements (superseded by FASB-5), Effective 1/1/76

FASB Statement No. 9 — Accounting for Income Taxes - Oil and Gas Producing Companies (superseded by FASB-19, Effective 12/1/75

FASB Statement No. 10 — Extension of "Grandfather" Provisions for Business Combinations, amends para 99 of APB-16, Effective 1/1/75

Paragraph 99 of APB-16 states that if a company holds less than or equal to 50% of the common stock of another company and then conducts a plan of combination with that company, the resulting combination may be classified as a pooling of interests if the combination is completed within 5 years after 10/31/70. FASB-10 deletes the wording "if the combination is completed within five years after 10/31/70."

FASB Statement No. 11 Accounting for Contingencies Transition Method (supersedes para 20 of FASB-5), Effective 1/1/76

FASB Statement No. 12 Accounting for Certain Marketable Securities, Effective 12/31/75

This statement deals with marketable equity securities definer "any instrument that represents an ownership share or the right to acquire or sell an ownership share at a determinable price." This includes stock options, warrants, common, preferred, and other for capital stock. This statement establishes the accounting procedure all industries other than those following specialized practices.

Marketable securities should be classified as current or noncurrent with the total cost for each group carried at the lower of cost or market. Unrealized losses for the current group are deducted on the income statement in determining net income for the period where as unrealized losses for the noncurrent group are shown separately as a reduction of shareholder's equity. Unrealized gains are handled same manner, however, a group cannot be valued in excess of its origin cost. Realized gains and losses occurring through the actual sale of the securities are reported in the income statement of the period of sale.

Required disclosures for marketable equity securities:

1. As of the date of each balance sheet presented. Aggregate cost and market value (each segregated between current and noncurrent portfolios when a classified balance sheet is presented) with identification as to which is the carrying amount.
2. As of the date of the latest balance sheet date presented, the following, segregated between current and noncurrent portfolios when a classified balance sheet is presented:
   a. Gross unrealized gains (losses) representing the excess market value over cost (cost over market) for marketable equity securities.

3. For each period in which an income statement is presented:
   a. Net realized gain or loss included in the determination net income.
   b. The basis in which cost was determined in calculating the above.
   c. The change in valuation allowance account included in the equity section of the balance sheet during the period an when a classified balance sheet is presented, the amount of such change included in the determination of net income.

FASB Statement No. 13 Accounting for Leases, Effective 1/1/77

A lease is defined as "...an agreement conveying the right to use property, plant, and equipment (land and/or depreciable assets) usually for a stated period of time." Substance over form (hinging on whether substantially all the benefits and risks of ownership of the property have been transferred) determines how a lease should be accounted for on the balance sheet.

A lease shall be classified as a capital lease if one of the following criteria has been satisfied:

1. The lease transfers ownership of the property by the end of the lease term to the lessee.
2. The lease contains a bargain purchase option.
3. The length of the lease term is 75% or more of the estimated useful life of the leased property.
4. The present value of the minimum lease payments (minimum periodic rental payments, guarantee of the residual value by the lessee, penalty payments for failure to renew, etc at the inception of the lease is 90% or more of the fair market value of the leased property.

If at least one of the above criteria has been satisfied, the lessee follows capital lease accounting procedures that is he accounts for it as if he had acquired an asset and incurred a liability at the same time. The lessee classifies all other leases other than capital as operating leases. Under an operating lease, the lessor basically retains all the rights and obligations of ownership.

If a lease meets one of the four criteria mentioned above and both of the following criteria, it shall be classified (to the lessor) as sales-type lease or direct financing lease:

1. Collectibility of the minimum lease payments are reasonably predictable.
2. No important uncertainties exist regarding costs to be incurred by the lessor such as unusual guarantees of Performance.

The basic differentiation between sales-type leases and direct financing leases is the occurrence of manufacturer's or dealer's profit on the part of sales-type leases. To record a sales-type lease, following information is necessary:

1. Gross investment - the minimum lease payments plus the unguaranteed residual value accruing to the lessor at the end of the lease term.
2. Unearned interest revenue - the gross investment less the sum of the present value of the two components of gross investment.
   --to be amortized to income over the lease term.
3. Sales Price of the asset - the present value of the minimum lease payments. This amount is included in income in the period of the sale.
4. Cost of goods sold - the cost of the asset to the lessor less the present value of the unguaranteed residual value. This amount is charged against income in the period of the sale.

Another type of lease mentioned in this statement describes a situation in which an owner sells property to another and simultaneously leases it back from the new owner, this is called a sales-leaseback. The seller-lessee may deduct the lease payment for income tax purpose, which could exceed his previous depreciation deduction had title been retained. If the lease meets one of the four criteria mentioned above for capitalization, the seller-lessee accounts for the transaction as sale and the lease as a capital lease. If the lease meets one of the criteria above and both of the criteria specifically addressed to lessors. the purchaser-lessor records the transaction as a purchase ar the lease as a direct-financing lease.

FASB Statement No. 14 Financial Reporting for Segments of a Business Enterprise, Effective 12/16/76

All enterprises which issue a complete set of financial statements in accordance with GAAP are required to present annual segmental information about their (1) different industries, (2) foreign operation and export sales, and (3) major customers. Three steps are required to determine <u>reportable segments</u> (any part of a company for which segment information is required):

1. Identify the enterprise's products and services.
2. Group products and services into industry segments.
3. Select the industry segments significant to the enterprise.

The starting point for grouping the enterprise's products and services is to determine the firm's profit centers; then the significant industry segments are selected. This is carried out by applying the following series of 10% tests:

1. The particular industry segment's revenue is at least 10% of the combined revenue of all the industry's segments.
   --an industry segment is a part of a company that sells primarily to outsiders for profit.
2. Its operating profit or loss is 10% of the greater of:
   a. Combined profit of all centers with profit or
   b. Combined loss of all segments with loss.
3. Its identifiable assets exceed 10% or more of the combined identifiable assets of all segments.

The number of industry segments should not exceed 10. If a segment's revenue, profit or loss, and identifiable assets all exceed 90% of the combined totals of all segments, this segment is termed a <u>dominant segment</u> and detailed disclosures need not be made if no other segments meet any of the 10% tests.

The enterprise must report revenue, operating profit or loss, and identifiable asset information concerning each of its reportable segments. Intersegment transactions must be separated out from sales outsiders. If a company makes 10% or more of its revenue from sales to a single customer or government, this information should be reported. Further information on disclosure is given within the statement.

FASB Statement No. 15 — Accounting for Debtors and Creditors for Troubled Debt Restructurings, Effective 12/31/77

Troubled debt restructuring occurs when a creditor grants a debtor certain concessions in response to the debtor's financial difficulties with the objective of maximizing his investment recovery. FASB-15 applies in all troubled debt restructurings, <u>except</u> those instances in which the debtor restates most of his liabilities. A debtor common restates his liabilities with the approval of the court and most of it creditors in quasi-reorganization, corporate readjustment, and similar situations.

Troubled debt restructures include situations in which the creditor accepts a third-party receivable or an equity interest in lieu of his receivable or allows for modification of the terms of the debt. Restructuring is not "troubled" when the debtor satisfies the debt by giving assets of equal fair value or when the creditor reduces the interest rate in response to general market conditions.

The debtor's accounting treatment of the payable under a modification of terms is dependent upon whether the amount repaid is greater than (or less than) the carrying value of the debt. If the recorded amount of the debt exceeds the aggregate future principal and interest payments under the new terms, an extraordinary gain is recognized and the liability account is reduced by this same amount. If the total payments to be made are greater than the carrying value of the debt, no adjustment is made to the liability account.

When the debtor exchanges an asset or an equity account in satisfaction of the debt, the transfer is recorded at the fair value of the asset given up. Any gain recognized by the debtor is recorded as extraordinary.

FASB Statement No. 16

Prior Period Adjustments - (supersedes Paragraphs 23 & 24 of APB-9), Effective 10/16/77

All profit and loss items are to be included in the determination net income except for the following two items which are to be accounted for and reported as prior period adjustments:

a. Correction of an error in the financial statements of a prior period and
b. Adjustments that result from realization of income tax benefit of preacquisition operating loss carryforwards of purchased subsidiaries.

An exception is listed in the statement regarding certain adjustments that are related to prior interim periods of the current fiscal year. These are adjustments or settlements of litigation, renegotiation proceedings, or of utility revenue under rate-making processes. These adjustments must meet certain criteria:

a. Their effect is material in relation to income from continuing operations of the current fiscal year.

b. All or part of the adjustments can be specifically identified with and are directly related to business activities of prior interim periods of the current fiscal year.
c. These adjustments must not have been reasonably estimable prior to the current interim period (e.g. new retroactive tax legislation).

When an item of profit or loss occurs in other than the first interim period of the enterprise's fiscal year and all of part of the item is an adjustment related to prior interim periods of the current fiscal year, the item shall be reported as follows:

a. Any portion of the item that is related to the current interim period should be included in the net income of that period.
b. Restate prior interim periods to pick up portions related to the activities of the enterprise during those prior period.
c. Any portion of the adjustment related to prior fiscal years should be included in the determination of net income for the current first fiscal Period.

FASB Statement No. 17 Accounting for Leases -- Initial Direct N (Cost (Now in FASB-13)

FASB Statement No. 18 Financial Reporting for Segments of a Business Enterprise -- Interim Financial Statements, Effective 12/1/77

Paragraph 4 of FASB Statement No. 14 provides for the inclusion of segment information in interim financial statements. This statement eliminates this requirement. If interim segment information is presented, it should be per Statement No. 14.

FASB Statement No. 19 Financial Accounting and Reporting by Oil and Gas Producing Companies, Effective 12/15/78

FASB Statement No. 20 Accounting for Forward Exchange Contracts (superseded by FASB-52), Effective 1/1/78

FASB Statement No. 21 Suspension of the Reporting of Earnings per Share and Segment Information by Nonpublic Enterprises (An amendment of APB Opinion No. and FASB Statement No. 14), Effective 12/15/

This statement suspends any requirement to disclose the information specified by Opinion No. 15 and Statement No. 14 in a complete set of separately issued financial statements' of a subsidiary, corporate joint venture, or other investee that is a nonpublic enterprise.

--a nonpublic enterprise is an enterprise whose debt or equity securities are not traded in a public market on a foreign or domestic stock exchange or in the over-the-counter market. The are not required to file financial statements with the SEC.

Although not required, if nonpublic enterprises do present earnings per share data and/or segment information in their financial statement they must be per Statement No. 14 and Opinion No. 15.

FASB Statement No. 22 Changes in the Provisions of Lease Agreements Resulting from Refundings of Tax-Exempt Debt (Now in FASB-13)

FASB Statement No. 23 Inception of the Lease (Now in FASB-13)

FASB Statement No. 24 Reporting Segment Information in Financial Statements that are Presented in Another Enterprises's Financial Report (an amendment of FASB No. 14 - Effective 1/1/79 retroactive to fiscal years beginning after 12/15/76)

If consolidated financial statements are accompanied by a complete set of separate parent company or investee financial statements, this statement eliminates the requirement to disclose segment information in the separate financial statements of:

1. The consolidated parent or affiliated companies included in the consolidation.
2. Certain foreign investee companies.

3. Investee companies utilizing the cost or equity method, if the segment information is not material to the consolidated financial statements.

FASB Statement No. 25	Suspension of Certain Accounting Requirements for Oil and Gas Producing Companies, Effective 12/15/78
FASB Statement No. 26	Profit Recognition on Sales-Type Leases of Real Estate, Effective 8/1/79
FASB Statement No. 27	Classification of Renewals or Extensions of Existing Sales-Type or Direct Financing Leases, Effective 9/1/79
FASB Statement No. 28	Accounting for Sales with Leasebacks (now in FASB-13, codified through May 1980), Effective 9/1/79
FASB Statement No. 29	Determining Contingent Rentals (now in FASB-1 codified through May 1980) Effective 10/1/79
FASB Statement No. 30	Disclosure of Major Information about Major Customers, an amendment of FASB-14, Effective 12/16/79

Paragraph 39 of FASB Statement No. 14' "Financial Reporting for Segments of a Business Enterprise." requires disclosure of the amount revenue derived from sales to domestic governmental agencies or foreign governments in the aggregate when those revenues are 10% or more of the enterprise's revenues. This statement amends that paragraph to require disclosure of sales to an individual domestic government or foreign government when those revenues are 10% or more of the enterprise's revenues. Effectively each governmental unit is treated as a separate customer and disclosures are like sales made to any other customer.

FASB Statement No. 31 Accounting for Tax Benefits Related to U. K. Tax Legislation Concerning Stock Relief, Effective 7/26/79

FASB Statement No. 32 Specialized Accounting and Reporting Principle and Practices in AICPA Statements of Position Guides on Accounting and Auditing Matters, Effective 10/31/79

The Financial Accounting Standards Board (FASB) has specified that specialized accounting and reporting principles which appear in certain AICPA Statements of Position and Guides on accounting and auditing matters are "preferable accounting principles" for justifying a change in accounting principle per APB-20.

FASB Statement No. 33 Financial Reporting and Changing Prices, Effective 12/25/79

This statement applies to public enterprises (excluding investment companies) having either (1) inventories and property, plant. and equipment before depreciation amounting to $125 million or more or (2) total assets after deducting depreciation greater than $1 billion.

No changes are to be made to the primary financial statements: the information required by this statement is to be presented as supplementary information in the published annual reports.

An enterprise is required to disclose:

a. Information on income from continuing operations on a historical cost/constant dollar basis.
--constant dollar information neutralizes the effects of general purchasing power of the dollar.
--the index used to compute constant dollar information is the Consumer Price [index for All Urban Consumers.
--convert items into constant dollars by multiplying historical cost by the following ratio:
TO/FROM = Price index in year converting to / Price index in year converting from.

b. The purchasing power gain or loss on net monetary items for the current fiscal year (which is not included in income from continuing operations).

The following steps are necessary to compute purchasing power gain or loss:

1. Compute the total net monetary items at the beginning of the period.
   --monetary items are amounts by nature already stated in current dollars (e.g. cash, accounts receivable, accounts payable, etc.)
2. Restate monetary items in step 1 to end-of-year dollars.
   --current period monetary items are already state in end-of-year dollars.
3. Restate sources (revenues) and uses (purchases) to end-of-year dollars.
   --multiply amounts by (end-of-year index/avg. index.
4. Add total net monetary items from step 1 to sources monetary items, then subtract uses of monetary item to arrive at net monetary items at end-of-year.
5. Compare net monetary items on restated basis to net monetary items on historical basis to arrive at purchasing power gain or loss.
   --historical basis follows same addition and subtractions as step 4 except items are not restated.

An enterprise is also required to disclose:

a. Information on income from continuing operations for the current fiscal year on a current cost basis.
   --current cost income from continuing operations is the difference between sales revenues and the current costs of inputs.
b. The current cost amounts of inventory and property, plant, and equipment at the end of the current fiscal year.
   --the current cost of inventory is the current cost to either purchase the goods or acquire the resources to produce the goods.
   --the current cost of property, plant, and equipment is the current cost of "acquiring the same service potential as embodied by the asset owned".
c. Increases or decreases for the current fiscal year in the current cost amounts of inventory and property, plant, and equipment (net of inflation).
   --the amount calculated above is not to be included in income from continuing operations.

If there is no material difference in income from continuing operations on either the constant dollar or current cost basis, the current cost information need not be disclosed.

Whichever method is chosen to disclose information on income from continuing operations (on a historical cost/constant dollar basis or on current cost basis) should also include, unless immaterial, amount or adjustments to cost of goods sold, depreciation, depletion, and the case of the historical cost/constant dollar basis - reductions the amounts of inventory and property, plant, and equipment to lower recoverable amounts.

An enterprise shall disclose in the notes to the supplementary information the following:

a. The principal types of information used to determine the current cost of inventory, property, plant, and equipment, cost of goods sold, and depreciation, depletion, and amortization expense. --two types: indexation and direct pricing are given as examples in the statement. Indexation (application of price indices to original cost) are internally or externally generated by the class of goods. Direct pricing pertains to current invoices, vendor's price quotations, and other similar information.
b. Any differences between the depreciation methods, estimates of useful lives, and salvage values of assets reflected in the depreciation expense calculation as a result of applying historical cost/constant dollar, historical cost/nominal dollar or current cost methods.
c. The exclusion from the computations of supplementary information of any adjustments to or allocations of the amount of income tax expense in the primary financial statements.

An enterprise is required to disclose the following information each of its five most recent fiscal years:

a. Net Sales and Other Operating Revenues.
b. Historical Cost/Constant Dollar and Current Cost information
   (1) Income from continuing operations.
   (2) Income per common share from continuing operations.
   (3) Net assets at fiscal year-end.
   (4) Increases or decreases in the current cost amounts of inventory and property, plant, and equipment (net of inflation). (Line 4 applies to Current Cost information only)
c. Other Information
   (1) Purchasing power gain or loss on net monetary items.
   (2) Cash dividends declared per common share.
   (3) Market price per common share at fiscal year-end.

All enterprises shall report in a note to the five year summary, average or the end of the year level of the Consumer Price Index for each of the years.

FASB Statement No. 34 Capitalization of Interest Cost, amended by FASB-42 and FASB-58, Effective 12/16/79

Interest costs, when material, incurred in acquiring the following types of assets, shall be capitalized:

1. Assets that are constructed or otherwise produced for an enterprise's own use (including those produced by others requiring deposits or progress payments.
2. Assets intended for sale or lease that are constructed as discrete projects (e.g. ships).

However, interest costs shall not be capitalized on the following:

1. Inventories that are routinely produced in large quantities on a repetitive basis.
2. Assets that are in use or ready for their intended use.
3. Assets that are not being used and are not be readied for use.
4. Land that is not undergoing activities necessary to get ready for its intended use unless it is being developed.

The objectives of capitalizing interest costs are:

1. To obtain a measure of acquisition cost that more closely reflects the enterprise's total investment in the asset.
2. To charge a cost that relates to the acquisition of a resource that will benefit future periods against the revenues of the periods benefitted.

The amount of interest cost to be capitalized should be that portion of the interest cost incurred during the assets' acquisition period theoretically could have been avoided if the expenditures for the asset had not been made. The amount capitalized in an accounting period shall be determined by applying an interest rate (which may be a specific rest rate associated with a qualifying asset or based on total borrowing outstanding during the period) to the average amount of accumulated expenditures for the asset during the period. The total amount of interest cost capitalized in an accounting period shall not exceed total

amount of interest cost incurred by the enterprise during that period.

--the capitalization period begins when the expenditures for the asset have been made, activities to get the asset ready for its intended use are in progress, and an interest cost ha been incurred.

--the capitalization period ends when the asset is substantially complete.

Disclosures in Financial Statements or Notes:

1. For an accounting period in which no interest cost is capitalized, the amount of interest cost incurred and charge expense during that period.
2. For an accounting period in which some interest cost is capitalized, the total amount of interest cost incurred during the period and the amount thereof that has been capitalized.

FASB Statement No. 35 Accounting and Reporting by Defined Benefit Pension Plans, Para 30 amended by FASB-59, Effective 12/15/80.

This statement covers all defined benefit pension plans such as governmental, private, ERISA (Employee Retirement Income Security Act and non-ERISA plans). A defined benefit pension plan is a plan in which the company provides its employees with benefits upon retirement (ordinarily, monthly payments) that can be determined in advance by provisions of a document. This statement does not include terminate plans or governmental social security plans. The financial accounting standards in this statement are unique to defined benefit pension plans and other accounting principles not covered may be applicable.

The primary objective of any pension plan statement is to provide information to the financial statement user concerning the plan's ability to pay accumulated benefits to its participants. This requires information on:

1. The financial resources available to pay benefits and stewardship thereof.
2. The participant's accumulated benefits.
3. Results of the plan's financial transactions.
4. Any other factors that may be pertinent to the plan's ability to pay benefits.

The following information is included in pension plan financial statements:

1. Statement of Net Assets available for benefits.
   --this would include contributions receivable from employers and participants.
   --Fund investments are presented at their current value.
   --Operating assets are presented at cost less accumulated depreciation.
   --the accrual basis of accounting shall be used.

2. Statement of Changes in Net Assets available for benefits.

   Minimum disclosure would include:
   a. Net change in current value of investments held at year end.
   b. Contributions from employers, participants, and other sources.
   c. Benefits paid, administration expenses, and payments to insurance companies.
3. Information on the present value of accumulated benefits as of a benefit valuation date.
   --the present value of accumulated benefits are those attributable to employee service prior to the benefit valuation date which are expected to be paid to present, retired, or terminated employees or their beneficiaries.
4. Information on significant changes in actuarial present value of accumulated benefits.
   --any changes in actuarial assumptions are considered changes in estimates.
   --if significant, individually or in the aggregate, disclose factors affecting changes in actuarial present value, including:
   a. Plan amendments.
   b. Changes in the nature of the plan.
   c. Changes in actuarial assumptions.

Other required disclosures include:

1. Assumptions to determine investment current values.
2. Assumptions to determine accumulated benefit present value.
   --this includes information on the assumed rate of return of the ongoing plan, inflation rate, and retirement ages.
3. General description of the plan which would include vesting and benefit provisions.
4. Funding policy and compliance with ERISA if applicable and other specialized disclosure requirements included in the statement that may be necessary depending on the plan.

FASB Statement No. 36 Disclosure of Pension Information (amends para 46 of APB No. 8), Effective 12/15/79

To improve uniformity and comparability of pension plan information employers shall make the following disclosures about their defined benefit pension plans:

1. Actuarial present value of vested and non-vested accumulate plan benefits.
2. Net assets available for benefits.
3. The assumed rates of return used for the above.
4. The date as of which the benefit information was derived.

The disclosures shall be as of the most recent benefit information date. The data may be reported in total, separately, or in the most useful combination of the two. If the above data is not available, the employer shall disclose the excess, if any, of the vested benefits (present or actuarial value) over the sum of the pension fund and balance sheet pension accruals, less any pension prepayments.

FASB Statement No. 37 Balance Sheet Classification of Deferred Income Taxes (amends para 57 of APB No. 11), Effective 12/15/80

In paragraph 57 of APB No. 11. deferred income tax debits and credits are classified on the balance sheet as to the asset or liability to which they relate. There is no mention in paragraph 57 as to the procedure to follow should a timing difference arise that is not related to a particular asset or liability. This statement specifies that a deferred income tax charge or credit is related to a particular asset or liability if a decrease is expected in that asset or liability upon reversal of the timing difference. If there appears to be a relation, classification is the same as the related asset or liability. If there does not appear to be a relation, classification (current or noncurrent is determined by the date the timing difference is expected to reverse.

As mentioned in paragraph 57 of APB No. 11, the requirement of offsetting or netting current debits against current credits and noncurrent debits against noncurrent credits remains in effect.

FASB Statement No. 38 Accounting for Preacquisition Contingencies of Purchased Enterprises (amends para 88 of APB No 16), Effective 12/16/80

A preacquisition contingency is a contingency acquired from an enterprise in a business combination accounted for by the purchase method and that was in existence before the consummation of the combination (e.g. contingent asset' contingent liability, etc.).

A preacquisition contingency shall be included in the purchase allocation at its fair value if determinable during the allocation period (the period that is required to identify and quantify the assets acquired and liabilities assumed in combinations accounted for by the purchase method). If the fair value cannot be determined during the allocation period, a reasonable estimate should be made if it is probable that an asset has been impaired or a liability incurred as of information available before the end of the allocation period.

FASB Statement No. 39 Financial Reporting and Changing Prices: Specialized Assets - Mining and Oil and Gas (supplements FASB-33), Effective 12/25/80

FASB Statement No. 40 Financial Reporting and Changing Prices: Specialized Assets - Timberland and Growing Timber (supplements FASB-33), Effective 12/25/

FASB Statement No. 41 Financial Reporting and Changing Prices: Specialized Assets - Income-Producing Real Estate (supplements FASB-33), Effective 12/25/80

FASB Statement No. 42 Determining Materiality for Capitalization of Interest Cost (amends SFAS No. 34> - Effective 12/16/79 unless adoption of SFAS No. 34, then 10/16/80

When the benefits in terms of information about an enterprise's resources and earnings upon capitalization of interest do not justify the additional accounting and

administrative cost involved, interest shall not be capitalized.
--e.g. interest cost shall not be capitalized for inventories that are routinely manufactured or otherwise produced in large quantities on a repetitive basis because the informational benefit is outweighed by the cost.

FASB Statement No. 43 Accounting for Compensated Absences, Effective 12/15/80

FASB Statement No. 44 Accounting for Intangible Assets of Motor Carriers, Effective 12/19/80

FASB Statement No. 45 Accounting for Franchise Fee Revenue, Effective 6/15/81

Franchise fee revenue from individual sales shall be recognized when all material services or conditions relating to the sale have been substantially performed or satisfied by the franchisor.

--Franchisor - party who grants business rights.
--Substantially performed - Franchisor has no obligation to return money, substantially all initial services have been performed, and no other conditions or obligations exist.

If a large initial franchise fee is required and subsequent franchise fees are small in relation to future services, then a portion of the initial fee should be deferred and amortized over the life of the franchise. If the franchisee is allowed to make bargain purchases, then likewise a portion of the initial franchise fee is to be deferred and offset against the selling price of the purchases.

If a franchise fee includes a portion applicable to tangible assets that portion shall be based on fair market value and the fee may be recognized before or after the revenue from the initial services.

Continuing franchise fees are consideration for the ongoing rights of the franchise agreement and for any general or specific services that might occur during the duration of the agreement. The fees are recognized when earned and receivable from the franchisee. If an agency relationship is set up and a designated portion of the continuing franchise fee is for a specific purpose, that

segregated portion is to be recorded as a liability with any later costs incurred charged against that liability.

If a franchisor upon repossessing the franchise refunds the consideration previously paid, the franchisor shall reduce the sales of the current period by the refunded amount. If no refund is made, no adjustment is made to the previous recorded revenue although an adjustment may be necessary to the allowance for uncollectible account.

There should be disclosure of all significant commitments and obligations that have not been substantially performed. Notes to the financial statements should disclose whether the installment or cost recovery method is being utilized to recognize revenue. Initial franchise fees shall be segregated from other franchise fee revenue if significant.

FASB Statement No. 46 Financial Reporting and Changing Prices: Motion Picture Films, supplements SFAS No. 33, Effective 3/31/81

FASB Statement No. 47 Disclosure of Long-Term Obligations, Effective 6/16/81

Per APB No. 4, exchanges between enterprises or individuals are recorded when the actual transfer of resources, services, and/or obligations occur. An exception is made for unfulfilled purchase commitments as to the future transfer of resources;these exchanges are not recorded until the commitment is at least partially fulfilled.

This statement concentrates on <u>unconditional purchase obligations</u> which are defined as obligations whereby one party is required to transfer funds to another party in return for future delivery of specified quantities of goods or services at specified prices. Unconditional purchase obligations having a remaining term <= to one year are excluded from the provisions of this statement.
--an unconditional purchase obligation may be cancelable by a remote contingency, permission of other party, replacement agreement signed by both parties, or by provision of penalty and still be governed by this statement.

Disclosure of Unrecorded Unconditional Purchase Obligations

If these obligations are (1) substantially noncancelable, (2) related to the costs of specific goods or

services, and (3) for a remaining term in excess of one year, disclosure must be made by a footnote in the purchaser's financial statements. This would include:

1. A description of the nature and term of the obligation.
2. The total determinable amount of unrecorded unconditional purchase obligations as of the latest balance sheet date and for each of the five years after the latest balance sheet date.
3. A description of the nature of any variable component of the unrecorded unconditional purchase obligations.
4. Amounts purchased under the obligations for each year an income statement is presented.

This statement further encourages presenting the present value of the total determinable amounts of unrecorded unconditional purchase obligations for each of the five years after the latest balance sheet date. The discount rate to be used is usually the effective interest rate at the inception of the borrowings that financed the project or the rate associated with the obligations.

FASB-47 reaffirms the economic substance of a transaction should be recorded, rather than the legal form of the transaction. Furthermore, the following information should be disclosed for each of the next five years:

1. Aggregate amount of payments for unconditional purchase obligations that meet criteria for balance sheet recognition.
2. Combined aggregate amount of maturities and sinking fund requirements for all long-term borrowings.

FASB Statement No. 48 Revenue Recognition When Right of Return Exists, Effective 6/16/81

Specification is given in this statement as to the accounting for sales in which a product may be returned for refund, credit applied to amounts owed, or in exchange for other products. The following criteria are given for recognizing revenue when right of return exists:

1. If an enterprise sells its product but gives the buyer the right to return the product, revenue from the sales transaction shall be recognized at time of sale only if all of the following conditions are met:
   a. The seller's price is substantially fixed or determinable at the date of sale.

b. The buyer is obligated to pay the seller and the obligation is not contingent upon resale.
c. The buyer's obligation to the seller is not changed by theft or destruction of the product.
d. The sale was not made to a party solely for recognizing sales revenue.
e. The seller does not have any significant obligations for future performance concerning resale.
f. The amount of future returns can be estimated.

Sales revenue and cost of sales not recognized due to failing to meet the above conditions shall be recognized when the return privilege has substantially expired or upon meeting the above conditions, whichever occurs first. If the above conditions are met, record sale and cost of sales and (1) reduce sales revenue and cost of sales to reflect estimated returns (2) accrue expected costs or losses in accordance with FASB-5.

Certain factors may impede the ability to make a reasonable estimate of returns. The susceptibility of the product to external factors (: changes in demand), a long return privilege. or absence of experience with similar products are some of these factors.

FASB Statement No. 49 Accounting for Product Financing Arrangements, Effective 6/16/81

A product financing arrangement is defined in the statement as "a transaction in which an enterprise sells and agrees to repurchase inventory with the repurchase price equal to the original sale price plus carrying and financing costs, or other similar transactions."

The enterprise shall record a liability at the time the proceeds are received from the other enterprise to the extent the product is covered by the financing agreement. The selling party shall neither record sales revenue from the transaction nor remove the covered product from its balance sheet.

FASB Statement No. 50 Financial Reporting in the Record and Music Industry, Effective 12/16/81

FASB Statement No. 51 Financial Reporting by Cable Television Companies, Effective 12/16/81

FASB Statement No. 52 Foreign Currency Translation (Supersedes FASB-8 & FASB-20), Effective 12/15/82

This statement Provides "standards for foreign currency translation that are designed to (a) provide information that is generally compatible with the expected economic effects of a rate change on an enterprises's cash flows and equity and (b) reflect in consolidated statements the financial results and relationships as measured in the primary currency in which each entity conducts its business (referred as its functional currency)."
--functional currency = currency of the primary economic environment in which the entity operates.
--a currency in a highly inflationary environment (3-year inflation rate of 100% or more) is not considered stable enough to be used as the functional currency, therefore the more stable currency of the reporting parent should be used.

Objectives of Translation

Financial statements are intended to present information in financial terms about the performance, financial position, and cash flows of an enterprise. This explains consolidating the financial statements of separate entities with different economic and currency environments into one statement for measurement purposes. Through effective operation of an enterprise's constituent parts, the enterprise as a whole can achieve its goal. The following objectives should be when commencing the translation process:

a. Provide information that is generally compatible with the expected economic effects of a rate change on an enterprise's cash flows and equity.
b. Reflect in consolidated statements the financial results and relationships of the individual consolidated entities as measured in their functional currencies in conformity with U.S. generally accepted accounting principles.

For purposes of determining the functional currency of an entity self-contained foreign operations are segregated from those that are direct and integral component or extension of the parent company's operation. The functional currency of the former is its foreign currency while the latter its parent company's. If the parent company's currency was the U.S. dollar then the functional currency of the latter would this also.

The following guidelines are suggested to determine the function currency:

1. Cash flow indicators
   a. If the foreign operation's cash flows are mostly in a foreign currency, the functional currency is the foreign currency.
2. Sales price or market indicators
   a. If the foreign operation's sales price for its products primarily determined by local competition, or local government regulation, the functional currency is the foreign currency, otherwise, the parent's.
   b. A local sales market for the operation would also suggest that the functional currency should be that of the foreign operation.
3. Financing indicators
   a. If the financing for the foreign operation is in its local currency and the funds generated by operations are sufficient to service these debt obligations, the functional currency should be that of the foreign operation.
   b. Likewise, if the financing is provided by the parent company or in U.S. dollars, the functional currency should be that of the parent's.

If a foreign entity's bookkeeping is not done in the functional currency, remeasurement into the functional currency is required. That remeasurement is required before translation into the reporting currency.

The translation of foreign currency financial statements (those incorporated in the financial statements of a reporting enterprise by consolidation, combination or the equity method of accounting) should use a current exchange rate if the foreign currency is the functional currency.

1. Assets and liabilities - exchange rate at the balance sheet data is used to translate the functional currency to the reporting currency.
2. Revenues (expenses) and gains (losses) - exchange rates when the transactions were recorded shall be used to translate from the functional currency to the reporting currency.
3. Translation adjustments will result from the translation process if the functional currency is a foreign currency. These adjustments are not an element of net income of the reporting entity but are accumulated and reported as part of the reporting entity's owner's equity.
   --the accumulated adjustments remain part of the owner's equity until the reporting entity disposes of the foreign entity.

Foreign currency transactions are those which are denominated in other than the entity's functional currency.

As a general rule, gains and losses on foreign currency transactions are recognized in current net income. However, the following currency transactions may require different treatment:

1. Gain or loss resulting from a foreign transaction that is designated as an economic hedge of a net investment in foreign entity.
2. Forward exchange contracts are agreements to exchange different currencies at a specific future rate on a specified future date. FASB-52 specifies gain and loss treatment on two specific forward exchange contracts. A gain or loss on a hedge forward contract is computed by multiplying the foreign currency amount of the forward contract by the difference between the spot rate at the balance sheet date and the spot rate at the date of inception of the forward contract.
   --spot rate is the exchange rate for immediate delivery of currencies exchanged.

A gain or loss on a speculative forward contract is computed "multiplying the foreign currency amount of the forward contract by the difference between the forward rate available for the remaining maturity of the contract and the contracted forward rate."

Gains and losses on forward contracts are disclosed on the income statement during the period in which the spot rates (rates for immediate delivery of the currencies exchanged) change.

Financial statement disclosures required:

1. Aggregate transaction gain or loss that is included in entity's net income.
2. Analysis of changes in accumulated translation adjustments, which are reported as part of the entity's owner's equity.
3. Significant rate changes subsequent to the date of the financial statements including effects on unsettled foreign currency transactions.

FASB Statement No. 53 Financial Reporting by Producers and Distributors of Motion Picture Films, Effective 12/16/81

FASB Statement No. 54 Financial Reporting and Changing Prices: Investment Companies, amends FASB-33 -

Effective 1/27/82 retroactive to fiscal years ending after 12/25/79

FASB Statement No. 55 Determining Whether a Convertible Security Common Stock Equivalent - Effective for convertible securities issued after 2/28/82

APB No. 15 used the bank prime interest rate in the cash yield for determining common stock equivalents (CSE). Accordingly, a convertible security was a CSE if at the time of issuance based on its market price, it had a cash yield of less than 66 2/3 % of the bank interest rate.

Recent bank interest rates have been volatile and often higher long-term interest rates. Following the above classification would result in convertible securities becoming CSE's contrary to the int of APB No. 13. Therefore in the cash yield test, "bank prime inter rate" is replaced by "average Aa corporate bond yield".

FASB Statement No. 56 Designation of AICPA Guide and Statement of Position (SOP) 81-1 on Contractor Accounting a, SOP 81-2 Concerning Hospital-Related Organizations as Preferable for Purposes of APPlying APB Opinion No. 20. amends FASB-32, Effective 1/1/82

FASB Statement No. 57 Related Party Disclosures, Effective 6/15/82

In general, a related party is one which can exercise control or significant influence over the management or operating policies of another party, which may inhibit the other party from pursuing its separate interests. Related parties include the reporting entity, its affiliates, principal owners, management' and members of their immediate families.

Statement on Auditing Standards No. 6 (SAS-6) requires that significant related party transactions be disclosed. The disclosures should include:

1. The nature of the related party relationship.

2. A description or summary of the related party transaction, including amounts and other pertinent information.
3. The effects of any changes in terms between the related parties from the terms used in prior periods and the dollar amounts of the transactions <u>for each period in which an income statement is presented</u>.
4. If not apparent in the financial statements, the terms, manner of settlement, and amounts due to and from other parties from related party transactions.
5. <u>When a control relationship exists, disclose such relationship even though no transactions have occurred.</u>

(The underlined Portions reflect modifications to reflect FASB-57)

FASB-57 requires that material related party transactions which are not eliminated in consolidated financial statements be disclosed in the financial statements of the reporting entity (this does not include related party transactions involving compensation arrangements, expense allowances, etc. incurred in the ordinary course of business).

FASB Statement No. 58 Capitalization of Interest Cost in Financial Statements that Include Investments Accounted for by the Equity Method, amends Para 9,10,&20 of FASB-34, Effective 7/1/82

Interest costs shall be capitalized for investments (equity, loans and advances) accounted for by the equity method while the investee has activities in progress necessary to commence its planned principal operations (provided that the investee's activities include the use of funds to acquire qualifying assets for its operations). Interest costs shall not be capitalized for investments in regulated investees that capitalizing both the cost of debt and equity capital.

For parent company and subsidiaries, only the qualifying assets appearing in the consolidated balance sheet shall be eligible for that interest capitalization. If the investee which was not consolidated the past is consolidated, do not restate capitalized interest costs.

FASB Statement No. 59 Deferral of the Effective Date of Certain Accounting Requirements for

Pension Plans of State and Local Governmental Units, amends FASB-35 - Effective 4/82 retroactive for fisc years after 12/15/80

FASB Statement No. 60 Accounting and Reporting by Insurance EnterPrises, Effective 12/16/82

FASB Statement No. 61 Accounting for Title Plant, Effective 12/16/82

FASB-61 stipulates the accounting principles and practices to for title plants. A title plant is a collection of records that displace the chain of ownership of a parcel of real estate. A title insurance company will utilize a title plant to research a particular parcel of real estate for any liens or defects that may hinder the subsequent purchase or sale of the real estate.

All direct costs incurred up until the time the title plant is full operational shall be capitalized. Subsequent costs to modernize or otherwise modify the title plant shall be expensed or deferred.

FASB Statement No. 62 Capitalization of Interest Cost in Situation Involving Certain Tax-Exempt Borrowings and Certain Gifts and Grants, amends Para 10, 13 17 of FASB-34, Effective 9/1/82

Interest earned shall not be offset against interest cost in determining either capitalization rates or limitations on the amount of interest cost to be capitalized except in situations involving acquisition of qualifying assets financed with the proceeds of tax-exempt borrowings.

--the proceeds must be externally restricted to finance acquisition of specified qualifying assets or to service rhe related debt.

"The amount of interest cost capitalized on qualifying assets acquired from the proceeds of tax-exempt borrowings...shall be all interest cost of the borrowing less any interest earned on related interest-bearing investments acquired with proceeds of the related tax-exempt borrowings from the date of the borrowing until the date assets are ready for their intended use."

This statement does not permit capitalization of interest cost on assets acquired with gifts and grants whose use is restricted by the donor or grantor.

FASB Statement No. 63 Financial Reporting by Broadcasters, Effective 12/16/82

FASB Statement No. 64 Extinguishment of Debt Made to Satisfy Sinking-Fund Requirements, amends Para 8 of FASB-4, Effective 10/1/82

Under FASB-64, gains or losses from the extinguishment of debt made within one year to meet sinking-fund requirements shall not be classified as extraordinary items, but shall be included in income from continuing operations. However, gains or losses from the maturation serialized debt are classified as extraordinary items.

FASB Statement No. 65 Accounting for Certain Mortgage Banking Activities, Effective 1/1/83

FASB Statement No. 66 Accounting for Sales of Real Estate, Effective 12/31/82

Real Estate Sales (not including Retail Land Sales)

FASB-66 requires that in order for a seller to report the total profit on a sale of real estate by the full accrual method, the transaction must meet the following criteria:

1. A sale must be completed.
2. The initial and continuing payments by the buyer must be adequate.
3. Seller's receivable shall not be subject to future subordination.
4. All the benefits and risks of ownership in the property must be substantially transferred to the buyer by the seller.
5. The seller must not have a substantial continued involvement with the property after the sale.

When all the above criteria are not met, the profit on the sale must be recognized by either (a) the deposit

method, (b) the installment sales method (3) the cost recovery method, or (4) the reduced profit method.

Under the deposit method, the seller neither recognizes profit nor records a note receivable from the sale. The seller continues to report the property and any related debt in its financial statements, then discloses that the property and related debt are subject to a sales contract. Cash received from the buyer is accounted for as a deposit.

Under the installment method, the seller apportions each cash receipt from debt assumed by the buyer (to purchase the property) between recovery of cost and profit in the same ratio as total cost and total profit bear to the sales value. On the income statement of the seller; sales value, unrecognized gross profit, and the total cost of the sale is disclosed.

No profit is recognized under the cost recovery method until cash payments by the buyer exceed the seller's cost of the proPerty sold. The income statement for the period of the sale includes the sales value, unrecognized gross profit from the sale, and the total cost of the sale Unrecognized gross profit is offset against the related receivable on the balance sheet. The remaining gross profit not previously recognize is recorded as a separate item on the income statement when earned.

The reduced-sales method utilizes present value concepts to determine the seller's profit.

FASB-66 requires that the profit on retail land sales be recognized by either the (a) full accrual method, (b) % of completion method, (c) the installment sales method, or the (d) deposit method.

FASB Statement No. 67 Accounting for Costs and Initial Rental Operations of Real Estate Projects, Effective 1/1/83

FASB Statement No. 68 Research and Development Arrangements, Effective 1/1/83

In Research & Development (R&D) arrangements that are partially or completed funded by third parties, the nature of the obligation an enterprise incurs has an effect on the accounting and reporting of R&D costs. If the enterprise is required to repay any of the funds provide to them by third parties, the enterprise shall estimate and recognize a

liability with an offsetting charge to an expense account. If the enterprise substantially transfers the financial risks involved with the R&D arrangements to a third party, a liability need not be recognized.

To the extent that the financial risk associated with the R&D has been transferred because repayment of any of the funds Provided by the third parties is dependent on having future economic benefit, no liability is recorded.

A loan or advance made by the enterprise to other parties should be expensed if repayment depends solely on R&D results having future economic benefits. It should be classified as R&D expense unless related to some other function (e.g. marketing or advertising), in which case should be accounted for in accordance with the other function.

An enterprise that accounts for its obligation under R&D arrangements as a contract to perform R&D for others should disclose the following:

a. The terms of significant agreements under the R&D arrangement (inc. royalty arrangements, purchase provisions, license arrangements, etc.) as of the balance sheet presented.
b. The amount of the compensation earned and the costs incurred under such contracts for each period for which income statement is presented.

FASB Statement No. 69 Disclosures About Oil and Gas Producing Activities, amends and supersedes FASB-19, pa: 48_59; FASB-25, Paras 4-9; FASB-33, Paras 51-53, Effective 12/16/82

FASB Statement No. 70 Financial Reporting and Changing Prices: Foreign Currency Translation' amends FASB-33. Effective for fiscal years ending after 12/15. when enterprise applied FASB-52

If the U.S. dollar is the functional currency for all of the entity's significant operations, reporting of supplementary information concerning changing prices remains per FASB-33.

If the U.S. dollar is not the functional currency for all of the entity's significant operations:

1. The entity is not required to report historical cost information measured in units of constant purchasing power for either current or prior years, if current cost information is disclosed for those years.
2. Entities having insignificant amounts of inventory, and property, plant, and equipment may continue to use constant dollar information as a substitute for current cost information.

When an operation has a functional currency other than the U.S. dollar they should first measure current costs amounts and increases decreases and then translate these into U.S. dollar equivalents. Effects of general inflation on the current cost amounts shall be measured either by the "translate-restate method" or by the "restate-translate method". The method used should be disclosed in the current cost supplementary information.
--in the translate-restate method, the effects of general inflation on the current costs amounts are measured after translation based on the U.S. CPI(U).
--in the restate-translate method, the effects of general inflation on the current costs amounts are measured before translation. based on a reasonably reliable functional currency general price-level index.

If significant portions of an enterprises's operations are measured in one or more functional currencies other than the U.S. dollar, the enterprise shall disclose the chosen index to reflect general inflation the current cost amounts.

FASB Statement No. 71 Accounting for the Effects of Certain Types of Regulation, Effective 12/16/83

FASB-71 supersedes the Addendum to APB-2 (Accounting Principles for Regulated Industries), and amends APB-30 (Reporting the Results of Operations) to provide new promulgated GAAP for regulated enterprises that is enterprises in which a regulator approves the rates that an enterprise can charge to its customers for services or products. The approved rates (those which are reasonable and likely to be recovered allow the enterprise to recover specific costs of products or service supplied.

Regulated industries must comply with current or future accounting pronouncements unless they conflict with FASB-71, in which case FASB shall apply. FASB-71 applies to financial statements issued for external purposes (not those submitted to regulatory agencies).

FASB Statement No. 72 Accounting for Certain Acquisitions of Banking or Thrift Institutions, amends APB-17 and FASB-InterPretation 9, Effective 10/1/82

FASB Statement No. 73 Reporting a Change in Accounting for Railroad Track Structures, amends APB-20, para 20, Effective 7/1/83

FASB Statement No. 74 Accounting for Special Termination Benefits Paid to Employees, amends APB-8, Effective 7/1/83

An employer may offer for a short period of time special benefits its employees in connection with their termination of employment. The special termination benefits can take the form of a lump-sum payment of periodic future payments to a employee who for instance reached an early retirement age.

The employer should recognize a liability and an expense when the employees accept the offer and the amount can be reasonably estimated. The amount recognized should include any lump-sum payments and the present value of any future payments.

The termination of employees under a special termination benefit arrangement may effect the estimated costs of other employee benefits, .ie. pension benefits, because of differences between past assumptions and actual experience. These effects, if reliable, should be included in measuring termination expense.

FASB Statement No. 75 Deferral of the Effective Date of Certain Accounting Requirements for Pension Plans of State and Local Governmental Entities, supersedes FASB-59, Effective 11/83 retroactive for fiscal years beginning after 12/15/80

FASB Statement No. 76 Extinguishment of Debt, amends APB-26, Effective 1/1/84

A debtor shall consider his debt to be extinguished for financial reporting purposes when:

a. The debtor pays the creditor and is relieved of all its obligations with respect to the debt.
b. The debtor is legally released from being the primary obligor either judicially or by the creditor's assent and it is probable that the debtor will not be required to make any further payments with respect to that debt.
c. The debtor irrevocably places cash or other assets in a trust to be used solely for satisfying scheduled payments of both interest and principal of the debt and it is a remote possibility that the debtor will make any further payments. Further conditions surrounding the trust include:

    1. The trust shall be restricted to holding only risk-free monetary assets and they shall be denominated in the currency in which the debt is payable (e.g. direct obligations of the U.S. government or guaranteed by the U.S. government).
    2. The monetary assets held by the trust shall provide cash flows that coincide with the scheduled interest and principal payments of the debt being extinguished. It is also assumed that they will cover and trust management fees, it not, the debtor shall accrue a liability for those probable future payment. In the period that the debt is recognized as being extinguished.

If the debt is to be considered extinguished by placing the assets in a trust as described above (in-substance defeasance), a general description of the transaction and the amount of debt that is considered extinguished at the end of the period shall be disclosed so long as that debt remains outstanding.

FASB Statement No. 77 Reporting by Transferors for Transfers of Receivables with Recourse, amends FASB-13 & FASB-32, Effective 1/1/84

The transfer of receivables with recourse shall be recognized as sale if all the following conditions are met:

a. The transferor surrenders control of the future economic benefits inherent in the receivables.
b. The transferor's obligation under the recourse provision can be reasonably estimated.

c. The transferee cannot require the transferor to repurchase the receivables except pursuant to the recourse agreement.

If the transfer qualifies to be recognized as a sale, all probable adjustments in connection with the recourse obligations to the transferor shall be accrued in accordance with FASB-5 (Contingencies) The difference between the sales price (adj. for the accrual for probable adjustments) and the net receivables shall be recognized as gain or loss on the sale of receivables.

If any of the above conditions are not met' the amounts of the proceeds from the transfer of receivables shall be reported as a liability.

For transfer of receivables with recourse reported as a sale, the transferor shall disclose:

1. Proceeds received during each period for which an income statement is presented.
2. Balance of receivables transferred that remain uncollected at date of each balance sheet presented.

FASB Statement No. 78 Classification of Obligations that are Callable by the Creditor, amends ARB-43 yet does not modify FASB-6 or FASB-47, Effective date 12/1.

The current liability classification is also to include:

1. Obligations due on demand or will be due on demand with one year (or operating cycle if longer) from the balance sheet date, even though the actual liquidation may not be expected within that period.
2. Long-term obligations that are or will be callable by the creditor either because
   a. the debtor's violation of the debt agreement provision at the balance sheet date makes the obligation reliable or
   b. a violation that if not cured within the grace period will make the obligation callable.

Callable obligations should be classified as current unless one of the following conditions is met:

1. Creditor has waived or subsequently lost his right to demand repayment for more than one year (or operating cycle if longer) from the date of the balance sheet date.

2. For long-term obligations containing a grace period within which the debtor may cure the violation, it is probable that the violation will be cured within that period (this should be disclosed).

FASB Statement No. 79 Elimination of Certain Disclosures for Business Combinations by Non-Public Enterprises, amend: APB-16, Para 96, Effective 12/16/83

Nonpublic enterprises are no longer required to disclose pro forma results of operations when engaged in business combinations utilizing the purchase method.

FASB Statement No. 80 Accounting for Futures Contracts, Effective 1/1/85

FASB-80 establishes the standards of accounting for exchange-traded futures contracts, it does not cover contracts for foreign currencies. A futures contract is a legal agreement between a buyer or seller and the clearinghouse of a futures exchange.

The change in the market value of an open futures contract shall be recognized as a gain (loss) in the period of change unless the contract qualifies as a hedge of certain exposures to price or interest rate risk. Immediate gain (loss) recognition is also required if the item (an asset to be acquired or liability to be incurred) hedged by the futures contract is reported at FMV (e.g. futures contracts used as a hedge by investment companies, pension plans, and broker-dealers).

If the contract qualifies as a hedge, a change in the market value of the contract is either reported as an adjustment of carrying amount of the hedged item or included in the measurement of a related subsequent transaction. "Enterprises are required to cease accounting for a contract as a hedge if high correlation of changes in the mark value of the futures contract and the effects of price or interest rate changes on the hedged item has not occurred."

FASB Statement No. 81 Disclosure of Postretirement Health Care and Life Insurance Benefits Effective for period after 12/15/84

The statement establishes the required disclosures for health care and life insurance benefits when provided by individual employers to retirees, the retiree's dependents, or survivors of the retiree. Health care benefits encompass all health-related aid (ie. dental, hearing, vision benefits).

This statement does not apply to death benefits that are present being accrued and disclosed as part of pension costs' benefits provided by multiemployer sponsored plans, and government-required employer contributions to a national health plan.

The following disclosures are required by the statement:

1. Description of benefits provided and the employee group covered.
2. Description of accounting and funding policies followed those benefits.
3. The costs for the benefits recognized for the period unless it is not reasonably possible to separate out benefits between active employees and retirees or the costs cannot be approximated.
   --disclosure of methods to determine costs is encouraged
   --if the costs cannot be separated between active and inactive employees, disclosure of cost of providing total benefits and the number of employees covered each plan is required.
4. Any significant matters that might effect comparisons of costs between periods.

FASB Statement No. 82

Financial Reporting and Changing Prices: Elimination of Certain Disclosures, amends FASB-33, Paras 29(a) and 35(b). Effective on or after 12/15/84

This statement eliminates the requirement of FASB-33 for historical cost/constant dollar information for enterprises disclosing current cost/constant purchasing power information.

This statement does not change the acceptability of adjusting historical cost using an index of general purchasing power to provide substitutes of the following specialized assets:

1. Timberlands and growing timber.
2. Income-producing real estate.
3. Motion picture films.

4. Oil and gas mineral resource assets.

A firm may substitute historical cost/constant dollar purchasing power information for current cost/constant dollar purchasing power information if there are no material differences between the amount of income from continuing operations that would be disclosed by the two methods.

FASB Statement No. 83 Designation of AICPA Guides and Statement of Position on Accounting by Brokers and Dealers in Securities by Employee Benefit Plans, and by Banks as Preferable for Purposes of Applying APB Opinion 20, Effective 3/31/85

FASB Statement No. 84 Induced Conversions of Convertible Debt, amends APB-26, para 2., Effective 3/31/85

FASB Statement No. 85 Yield Test for Determining Whether a Convertible Security is a Common Stock Equivalent, amends APB-15, Para 33., Effective 4/1/85

FASB-85 replaces the "cash-yield test" with the "effective-yield test" for determining whether convertible securities are common stock equivalents in the primary earnings per share computation (effective for securities issued on April 1, 1985 or later).

For an example. if a company issues a $1000 bond (par $100) at 102 that pays 10% interest, the cash yield is:

$$\frac{\text{Interest expense (10\%)}}{\text{Market price of bond (102)}} \quad \frac{\$\ 100}{\$\ 1020} = 9.804\ \%$$

The effective-yield calculation not only takes into consideration the stated interest rate (refer to above example) but also any discount or premium. The cash or effective-yield (depending on whether the security in question is issued before or after 4/1/85) will be compared with 2/3 of the average Aa corporate bond to determine whether the security in substance is a common stock equivalent (CSE).

FASB Statement No. 86 Accounting for the Costs of Computer Software to be Sold, Leased, or Otherwise Marketed, Effective 12/16/85

FASB-86 specifies the accounting for the costs of computer software to be sold, leased, or otherwise marketed as a separate product. It applies to internally developed and externally purchased software.

Costs incurred to internally develop software shall be charged to expense when incurred as research and development "until technological feasibility is established upon completion of a detail program design or, in its absence, completion of a working model." Thereafter, all computer software production costs shall be capitalized (amortization based on current and future revenue with an annual minimum equal to straight-line amortization) and reported at the lower of unamortized cost or net realizable value.

FASB Statement No. 87 Employers Accounting for Pensions, Effective 12/15/86

This statement supersedes all prior GAAP. The Board cites significant changes in interest rates and the passage of ERISA among the reasons to issue this statement.

Recognition of net periodic pension cost shall include:

1. Service cost-actuarial present value of benefits.
2. Interest cost-increase in projected benefit obligation due to passage of time.
3. Actual return of plan assets, if any-fair value change adjusted for contributions and benefit payments.
4. Amortization of unrecognized prior service cost, if any-based on future benefits of employees active at amendment (including initiation) date.
5. Gain or loss recognition-may be immediate or spread over up to five years if done on a systematic basis consistently applied.
6. Amortization of the unrecognized net obligation of net asset existing at date of initial application of this statement.

The statement specifies disclosure including:

1. Plan description including funding policy.
2. Net periodic pension cost showing service cost, interest cost, actual return, and the balance.
3. Reconciliation of funded statement to amount on balance sheet showing:
   a. fair value of plan assets.

b. projected benefit obligation identifying the accumulated benefit obligation and the vested benefit obligation.
c. amount of unrecognized prior service cost.
d. amount of unrecognized net gain or loss.
e. amount of any remaining unrecognized net obligation or asset existing at initial application of statement.
f. amount of additional liability pursuant to paragraph 36.
g. amount of net pension assets or liability on balance sheet resulting from a) through f).

4. Weighted-average assumed discount rate and rate of corporate increase used.
5. Amounts and type of employer securities in plan assets.

FASB Statement No. 88 Employers' Accounting for Settlements and Curtailments of Defined Benefit Pension Plans and for Termination Benefits (supersedes FASB-74, Effective 12/15/88)

FASB Statement No. 89 Financial Reporting and Changing Prices (supersedes FASB-33 and amendments, Effective 12/2/86)

This statement removes the requirement that supplementary information be provided and gives guidance for those electing to disclose. The suggested disclosure is for a five year summary of selected financial data adjusted using either a) average-for-the year or end-of-year units or constant purchasing power or b) the Consumer Price Index for All Urban Consumers (CPI-U).

FASB Statement No. 90 Regulated Enterprises-Accounting for Abandonments and Disallowances of Plant Costs (amends FASB-71, Effective 12/15/87)

Due to public utility problems, immediate recognition of loss is required for assets disallowed into rate base (partial disallowances at NPV).

FASB Statement No. 91 Accounting for Nonrefundable Fees and Costs Associated with Originating or

Acquiring Loans and Initial Direct Costs of Leases (amends FASB-13, 60, 65 and rescinds FASB-17, Effective 12/15/87)

This statement requires originator of loans to recognize the fees over the life of the loan/lease and permits certain expenses to be similarly recognized.

FASB Statement No. 92 Regulated Enterprises - Accounting for Phase-in Plans, Effective 12/15/87

This statement specifies the way in which utility companies should account for costs deferred by regulators under "phase-in" plans. These plans spread increases in utility rates related to expensive new plants, which, in effect, delays charging utility customers for the cost of electricity produced by those plants.

In the past, when a new plant was built, regulators would establish new rates that the utility company could charge its customers, allowing a return on the utility's investment and recovery of the costs of the plant. Historically, rates sometimes were lowered because the new plants were more efficient. The recent higher costs of building new plants, particularly nuclear plants, have resulted in higher rates. To avoid dramatic increases in customer billings in a single year, these new rates have often been phased in over a period of years.

Utilities may capitalize costs deferred by regulators under a phase-in plan if the following restrictions are met:

1. The regulator must have approved the plan.
2. The plan specifies when recovery of the costs deferred under the plan will occur.
3. Recovery should not take more than 10 years from the time the utility started deferring the costs.
4. Each year, the rate increases must not be higher than the percentage increase in the previous year.

FASB Statement No. 93 Recognition of Depreciation by Not For-Profit Organizations, Effective May 15, 1988

FASB Statement No. 94 Consolidation of All Majority-owned Subsidiaries (amends ARB-18, 43 (Chapter. 12), Effective 12/15/88

This statement requires consolidation of all majority owned subsidiaries unless control is temporary or does not rest with majority owner. This requirement applies to "non homogeneous" operations, ones with a large minority interest, and foreign locations. Statements of subsidiaries now consolidated must also continue to be issued separately.

FASB Statement No. 95 Statement of Cash Flows (supersedes APB 19), Effective 7/15/88

This requires a statement of cash flows as part of a full set of financial statements for all business enterprises in place of a statement of changes in financial position. A statement of cash flows should classify cash receipts and payments according to whether they stem from operating, investing, or financing activities. Cash flows from operating activities is reported by employing either "the direct method" or "the indirect or reconciliation method."

A statement of cash flows should report the reporting currency equivalent of foreign currency cash flows, using the current exchange rate at the time of the cash flows. Information about investing and financing activities not resulting in cash receipts or payment in the period should be provided separately.

FASB Statement No. 96 Accounting for Income Taxes (supersedes or amends APB 11 and other pronouncement), Effective 12/15/88

This statement requires an asset and liability approach for financial accounting and reporting for income taxes. The following major changes have been made:

1. Adopts balance sheet oriented liability method.
2. Replaces income statement oriented deferred method under which deferred taxes were measured by rates in effect in your temporary differences arose.
3. Prohibits presenting deferred tax benefits beyond certain limitations.

FASB Statement No. 97 Accounting and Reporting by Insurance Enterprises for Certain Long-Duration Contracts and for Realized Gains and Losses from the Sale of Investments

(supersedes APB 30 footnote 8 and FASB 60 paragraph 15), Effective 12/15/88

This statement establishes standards of accounting for certain long-duration contracts issued by insurance enterprises, referred to in this Statement as universal life-type contracts, that were not addressed by FASB Statement No. 60, Accounting and Reporting by Insurance Enterprises. This also establishes standards of accounting for limited-payment long-duration insurance contracts and investment contracts amends Statement 60 to change the reporting of realized gains and losses on investments.

The retrospective deposit method should be used to account for universal life-type contracts. Premium receipts are not reported as revenues when the retrospective method is used. Capitalized acquisition costs associated with universal life-type should be amortized based on a constant percentage of the present value of estimated gross profit amounts from the operation of a book of those contracts. Any gain or loss resulting from a policyholder's replacement of life insurance contracts with universal life-type contracts is recognized in income of the period in which the replacement occurs. Revenues and income from limited-payment contracts should be recognized over the period that benefits are provided rather than on collection of premiums.

FASB Statement No. 98 Accounting for Leases (amends SFAS 13, 66 and 91), Effective, 6/30/88

This statement specifies the accounting by a seller-lessee for a sale-leaseback transaction involving real estate, including real estate with equipment. Lease term is redefined as the term include all period during which loan from lessee to lessor is outstanding. Definition of penalty, as referred to under lease term, is added: that is, any requirement that can be imposed on lessee that would cause lessee to forego economic benefit or suffer economic detriment.

FASB Statement No. 99 Deferral of the Effective Date of Recognition of Depreciation by Non-for-Profit Organizations

This Statement amends FASB No. 93, Recognition of Depreciation by Not-for-Profit Organizations. It defers the effective date of Statement 93 to fiscal years beginning on or after January 1, 1990.

FASB Statement No. 100 Accounting for Income Taxes - Deferral of the Effective Date of FASB Statement No. 96, an amendment of FASB Statement No. 96

This Statement amends FASB Statement No. 96, Accounting for Income Taxes, to defer the effective date of that Statement to fiscal years beginning after December 15, 1989.

FASB Statement No. 101 Regulated Enterprises - Accounting for Discontinuation of Application of FASB Statement No. 71

This Statement specifies how an enterprise that ceases to meet the criteria for application of FASB Statement No. 71, Accounting for the Effects of Certain Types of Regulation, to all or part of its operations should report that event in its general-purpose external financial statements.

Effective for discontinuous of application of Statement 71 occurring in fiscal years ending after December 15, 1988, but its adoption may be delayed until the issuance of annual financial statements for the fiscal year that includes December 15, 1989. Retroactive application prior to fiscal years ending after December 15, 1988.

FASB Statement No. 102 Statement of Cash Flows - Exemption of Certain Enterprises and Classification of Cash Flows from Certain Securities Acquired for Resale an amendment of FASB Statement No. 95

This Statement amends FASB Statement No. 95, Statement of Cash Flows, to exempt from the requirement to provide a statement of cash flows (a) defined benefit pension plans covered by FASB Statement No. 35, Accounting and Reporting by Defined Benefit Pension Plans, and certain other employee benefit plans and (b) highly liquid investment companies that meet specified conditions.

Effective for financial statements issued after February 28, 1989, with earlier application encouraged.

FASB Statement No. 103 Accounting for Income Taxes - Deferral of the Effective Date of FASB Statement No. 96, an amendment of FASB Statement No. 96

This Statement amends FASB Statement No. 96, Accounting for Income Taxes, to defer the effective date of that Statement to fiscal years beginning after December 15, 1991.

FASB Statement No. 104 Statement of Cash Flows - Net Reporting of Certain Cash Receipts and Cash Payments and Classification of Cash Flows from Hedging Transactions, an amendment of FASB Statement No. 95

This Statement amends FASB Statement No. 95, Statement of Cash Flows, to permit banks, savings institutions, and credit unions to report in a statement of cash flows certain net cash receipts and cash payments for (a) deposits placed with other financial institutions and withdrawals of deposits, (b) time deposits accepted and repayments of deposits, and (c) loans made to customers and principal collections of loans.

This Statement also amends Statement 95 to permit cash flows resulting from futures contracts, forward contracts, option contracts, or swap contracts that are accounted for as hedges of identifiable transactions or events to be classified in the same category as the cash flows from the items being hedged provided that accounting policy disclosed.

Effective for fiscal years after June 15, 1990, with earlier application permitted.*

FASB Statement No. 105 Disclosure of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments with Concentrations of Credit Risk

This Statement establishes requirements for all entities to disclose information principally about financial instruments with off-balance-sheet risk of accounting loss. It is the product of the first phase on disclosure of information about financial instruments. This first phase focuses on information about the extent, nature, and terms of financial instruments with off-balance-sheet credit or market risk and about concentrations of credit risk for all financial instruments. Subsequent phases will consider

disclosure of other information about financial instruments. The disclosure phases are interim steps in the Board's project on financial instruments and off-balance-sheet financing. Recognition and measurement issues are currently being considered in other phases of the project.

This Statement extends present disclosure practices of some entities for some financial instruments by requiring all entities to disclose the following information about financial instruments with off-balance-sheet risk of accounting loss:

--The face, contract, or notional principal amount
--The nature and terms of the instruments and a discussion of their credit and market risk, cash requirement, and related accounting policies
--The "accounting loss" the entity would incur if any party to the financial instrument failed completely to perform according to the terms of the contract and the collateral or other security, if any, for the amount due proved to be of no value to the entity
--The entity's policy for requiring collateral or other security on financial instruments it accepts and a description of collateral on instruments presently held.

This Statement also requires disclosure of information about significant concentrations of credit risk from an individual counterparty or groups of counterparties for all financial instruments.

Effective for financial statements issued for fiscal years ending June 15, 1990.*

FASB Statement No. 106 Employers' Accounting for Postretirement Benefits Other Than Pensions

FASB 106 establishes financial accounting and reporting standards for employers that offer postretirement benefits other than pensions (postretirement benefits). Most employers have accounted for postretirement benefits on a pay-as-you-go basis. The FASB considers such plans to be deferred compensation arrangements whereby an employer promises to exchange future benefits for employees' current services, and believes that the cost of providing postretirement benefits should be recognized over those employee service periods. The objectives of FASB 106 are to improve employer's financial reporting benefits in the following manner:

a. To enhance the relevance and representational faithfulness of the employer's reported results of

operations by recognizing net periodic postretirement benefit cost as employees render the services necessary to earn their postretirement benefits.

b. To enhance the relevance and representational faithfulness of the employer's statement of financial position by including a measure of the obligation to provide postretirement benefits based on the terms of the underlying plan.

c. To enhance the ability of users of the employer's financial statements to understand the extent and effects of the employer's undertaking to provide postretirement benefits to its employees by disclosing relevant information about the obligation and cost of the postretirement benefit plan and how those amounts are measured.

d. To improve the understandability and comparability of amounts reported by requiring employers with similar plans to use the same method to measure their accumulated postretirement benefit obligations and the related costs of the postretirment benefits.

Effective for fiscal years beginning after December 15, 1992, except that for plans outside the US and certain small, nonpublic employers it is effective for fiscal years beginning after December 15, 1994.

Summary taken from Grant Thornton's New Developments Summary.

* Summaries taken from publications of FASB Statements.

STATEMENTS ON AUDITING STANDARDS GAAS

This summary is based on the AICPA Professional Standards as of June 1, 1988 except for SAS62 which is based on the Jan., 1990 issue of Journal of Accountancy.

1: Nov. 1972 CODIFICATION OF AUDITING STANDARDS AND PROCEDURES

'Procedures' relate to acts to be performed, whereas 'standards' deal with measures of the quality of the performance of those acts and the objectives to be attained by the use of the procedures undertaken. Auditing standards refer to the auditor's performance of the examination and in the report. This statement identifies the three General Standards, the three Standards of Field Work, and the four Standards of Reporting.

The three General Standards are:

(1) The person performing the audit must have adequate technical training and proficiency as an auditor.

(2) Independence of mental attitude must be maintained by all persons on the audit.

(3) Due professional care must be exercised throughout the engagement [before, during and after the work]

The three Standards of Field Work are:

(1) The planning and supervision of the audit is thorough.

(2) The internal accounting controls are properly studied and evaluated.

(3) Sufficient competent evidential matter is to be obtained.

The four Standards of Reporting are:

(1) The financial statements must follow GAAP--Generally Accepted Accounting Principles.

(2) These principles must be consistently observed in the current period.

(3) Informative disclosures are considered to be reasonably adequate unless otherwise stated in the report.

(4) The auditor's report will contain an expression of an opinion on the financial statements or an explanation for no expression of opinion.

'Materiality' and 'relative risk' underlie the application of these standards. Materiality is the degree of relative importance of the client's likelihood of error in the fair representation of the client's financial position.

This training and proficiency of the independent auditor must enable the person to possess adequate technical expertise with some degree of proficiency.

The auditor must be and appear to be independent and therefore must not be associated financially with the client. Due care must be exercised in the performance of work which requires comprehensive supervision during the audit and adequate experience to assure appropriate judgment.

The auditor may take on an engagement after year-end, though early appointment is preferable for the planning of the engagement.

The study and evaluation of internal control is quite extensive. The second standard of field work requires establishing

a basis of reliance or no reliance for the internal controls.

Receivables and inventories must be confirmed in accordance to GAAP. GAAS must be applied to audit the long-term investments of a firm under the cost or equity methods. If procedures are not sufficient, the report opinion is qualified or disclaimed.

GAAP adherence refers to the policies and to the methods suggested to achieve GAAP, which must be consistently applied. Lack of conformity with GAAP usually results in a qualified or adverse opinion: Any lack of conformity should be reported.

The audit report should be dated as of the completion of field work. The statements should be adjusted for material subsequent events occurring after the completion of field work but before issuance of the report.

In cases where part of the examination is made by other independent auditors, this is acceptable depending on the circumstances.

Inadequate disclosure will usually result in a qualified or adverse opinion.

Internal controls for public warehouses and auditing procedures for goods held are important to assure reasonable accuracy.

2: Oct. 1974 **REPORTS ON AUDITED FINANCIAL STATEMENTS**

Effective Date: 1/1/75

This standard provides guidance for the issuance of appropriate auditors' reports for examinations of financial statements. However, it does not apply to any unaudited or any special presentation financial statements.

The opinion expressed is justified by its conformity with GAAS and audit findings. GAAS identify four standards of reporting. This standard describes how the auditor's report should relate to the fourth standard which can be summarized as follows: The report must contain an opinion expressed on the financial statements wholly or an explanation for not expressing an opinion. It should include clarification on what was done in the examination and what amount of responsibility the auditor is assuming. Note that the auditor is allowed to state different opinions on different financial statements in the same report if the situation calls for it.

The auditor's report should include at least two paragraphs. The scope paragraph is first and describes the nature of the examination while the opinion paragraph is last and contains the expression of the auditor's opinion. The report is addressed to the company audited, its board of directors, or its shareholders.

A departure from the auditor's standard report occurs when the financial statements do not accurately present the company's position or do not properly conform to GAAP. Any qualification or disclaimer of opinion should be described in the report.

The auditor's judgment determines the departure from the standard report. If the auditor is retained to report on part of the financial statements, the report objectives will be considered limited, not the scope of the engagement. If the opinion is based in part by another auditor, the division of responsibility, not the scope will be affected.

Inadequate disclosure affecting the fair presentation of the financial statements will result in a qualified or adverse opinion. The auditor should explain any departures from GAAP and issue a qualified or adverse opinion unless this departure is necessary for a more accurate presentation. In such an event, this should be explained in a separate paragraph of the auditor's report.

Emphasizing matters without qualifying the report are permitted and should be expressed in a separate paragraph. These various items affecting the auditor's report were described through example.

3: Dec. 1974 (Superseded by SAS 48)

4: Dec. 1974 (Superseded by SAS 25)

5: July 1975 **THE MEANING OF "PRESENT FAIRLY IN CONFORMITY WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES" IN THE INDEPENDENT AUDITOR'S REPORT**

The independent auditor should apply GAAP to achieve an objective conclusion as to the 'fairness' of the overall financial statement preparation. The final determination is based on the auditor's judgment within the GAAP framework. This conclusion is based on [1] if the accounting principles applied follow GAAP; and [2] are appropriate for application; [3] The financial statements and notes must be useful in content; [4] This data must be appropriately summarized, and [5] The financial position is presented with an acceptable degree of error. Note--if the auditor seeks a pronouncement on a topic which has not been addressed, other accounting literature may be sought.

The auditor should be assured that the substance of the transaction is properly represented in its form. In the auditor's application of GAAP, the accounting principles should be chosen to assure the financial statements taken as a whole are not misleading.

6: July 1975 (Superseded by SAS 45)

7: Oct. 1975 **COMMUNICATIONS BETWEEN PREDECESSOR AND SUCCESSOR AUDITORS**

Effective Date: After 11/30/75

The successor auditor is responsible for initiating either oral or written communications with his/her predecessor before and/or after accepting the engagement. The information obtained is confidential. It should initially be authorized by management. The auditor should assure that accounting principles have been consistently applied and a reasonable basis exists for expression of an opinion. Matters of continuing accounting significance should also be reviewed. The goal is to identify the integrity level of management. If management refuses to allow the predecessor and successor to communicate, the successor auditor should consider whether to accept the engagement.

8: Dec. 1975 **OTHER INFORMATION IN DOCUMENTS CONTAINING AUDITED FINANCIAL STATEMENTS**

Other information in documents containing audited financial statements is the responsibility of auditors only to the extent of the financial material of the other information. This is identified in the audit report. The obligation of auditors is to determine if material inconsistencies exist with the financial statement data. Inconsistencies should be eliminated or explained in a financial statement revision and/or a revision of the auditor's report. Any material misstatements should be discussed with the client. The auditor should seek legal counsel about the matter, particularly if the misstatement is not corrected. The auditor should notify the client in writing of his/her views and should encourage the client to seek its legal counsel for advice.

9: Dec. 1975 **THE EFFECT OF AN INTERNAL AUDIT FUNCTION ON THE SCOPE OF THE INDEPENDENT AUDITOR'S EXAMINATION**

In an examination made in accordance with GAAS, the internal auditor's work cannot be substituted for the work of the independent auditor. This standard relates to the study and evaluation of internal control because this is commonly reviewed by internal auditors. The extent of this and other work done by internal auditors will influence the nature, timing, and extent of the independent auditor's procedures. Thus, if it is found that the internal auditor's work will affect the independent auditor, the internal auditor's competence and objectivity should be evaluated. This would involve finding out the internal auditors' qualifications, the client's managing practices of the internal auditors with respect to their hiring, training, and supervision, and to whom the internal auditors report.

In evaluating internal auditors' work, it is appropriate to test some of their results and compare their findings to the independent auditors' findings.

The internal auditor may provide direct assistance to the independent auditors in substantive tests and tests of compliance, granted that their work will be tested to the extent deemed appropriate.

The independent auditor must make the judgments on matters affecting the auditors' report on the financial statements such as the effectiveness of the tests performed and the structure of the internal accounting controls and the transactions.

10: Dec. 1975 (Superseded by SAS 24.)

11: Dec. 1975 **USING THE WORK OF A SPECIALIST**

This standard provides guidance on using the work of a specialist, an expert in a field other than accounting or auditing. Often this expertise will be needed to assure the fair presentation of the financial statements. Competent evidential matter gathering may include the work of a specialist according to GAAS.

Selecting a specialist requires assurance of the competency and objectivity of the individual[s]. Thus, qualifications should be reviewed. If the client and the specialist know each other, additional tests may be warranted to assure that the specialist is

not biased.

The auditor must determine if the specialist's conclusions support the conclusions related to the specialist's work in the financial statements. The auditor may decide to apply additional procedures and subsequently, may hire another specialist. A qualified opinion or disclaimer of opinion may be necessary. If GAAP is considered to not be followed, a qualified or adverse opinion will result. The work of the specialist will be used if it appears reasonable. No reference to the specialist is made in the audit report unless the report was a qualification or disclaimer or other modification.

12: Jan. 1976 **INQUIRY OF A CLIENT'S LAWYER CONCERNING LITIGATION, CLAIM, AND ASSESSMENTS**

This standard holds management responsible for recognizing, analyzing, and accounting for any litigation, claims, and assessments. It is the auditor's responsibility to obtain evidential matter on any possible losses from such actions. The auditor must inquire of management, examine documents, descriptions and evaluations of litigation, claims, and assessments, and obtain assurance that management has told them everything affecting the financial statements. The client's legal counsel should be consulted.

The inquiry of a client's lawyer should be in writing and contain a list prepared by management with respect to pending and unasserted claims. Evidential matter on the period in which the cause for legal action occurred, the degree of probability of an unfavorable outcome, and the range or potential loss should be obtained. Management is the primary source of contingency information. Other audit procedures which may reveal pending or possible contingencies include reading the Board of Directors' meeting minutes, contracts, leases, correspondence, and other similar documents. Guarantees of indebtedness on bank confirmations and other documents should be inspected.

13: May 1976 (Superseded by SAS 24)

14: Dec. 1976 (Superseded by SAS 62)

15: Dec. 1976 **REPORTS ON COMPARATIVE FINANCIAL STATEMENTS**

Effective Date: For periods ending after 6/30/77.

This standard provides guidance to the auditor when preparing comparative financial statements. All financial statements prepared for the current period should be available from prior periods. The report should be dated as of the completion date of the most recent audit work. Prior period adjustments on the prior period financial statements should be considered when updating the report. Examples were provided on Auditor's Reports whose opinions differed from year to year.

In some cases, the prior period audit[s] may have been performed by a different auditor. In the issuing of comparative financial statements, the predecessor auditor may agree to reissue the report--once the appropriateness of such action is considered. Prior period events or transactions should be considered. The date

of the auditor's previous report should be used. If the report has been revised, a dual-date should be given for the report.

If the previous report of the predecessor auditor will not be presented, the successor auditor should state the situation in the scope paragraph.

16: Jan. 1977 THE INDEPENDENT AUDITOR'S RESPONSIBILITY FOR THE DETECTION OF ERRORS OR IRREGULARITIES

The relationship of independent audits to other business controls is described. The purpose of these controls is to provide reasonable assurance that no errors or irregularities exist that would materially misstate the financial statements. The auditor's responsibility and the possibility of errors or irregularities are described.

The auditor must examine the financial statements in accordance with GAAS in order to form an accurate opinion on them. The auditor must search for material errors and irregularities. The auditor's report implicitly indicates his/her belief that the statements are not materially affected by errors and/or irregularities. This is assured by conducting the audit with an attitude of professional skepticism.

Internal accounting controls can affect the degree of substantive tests necessary to gain assurance in the financial statements depending on the integrity of management despite the inherent limitations of an audit. Internal accounting control is management's responsibility. If management is devious, it is more difficult to detect the problem. The auditor should assume management has not been deceitful and overridden control procedures. Note that the auditing process is subject to inherent limitations such as cost and collusion. The auditor conducts the examination in accordance with GAAS and thus fulfills his/her professional responsibility, which is <u>not</u> to be an insurer or guarantor.

Procedures appropriate when the examination indicates that errors or irregularities may exist was described: The matter should be discussed with the appropriate level of management--at least one level above those involved. The board of directors and/or its audit committee may also be contacted and sufficient supporting evidential matter should be obtained. Legal counsels may be consulted by client and auditor at this point.

The opinion should be qualified or disclaimed when the auditor is unsure of the materiality of the errors or irregularities. If the problem is immaterial, the matter should be referred to management at least one level higher than the level of management involved in the discrepancy.

17: Jan. 1977 ILLEGAL ACTS BY CLIENTS

Examinations in accordance with GAAS are not meant to provide assurance that illegal acts will be detected. Procedures that may identify illegal acts were presented to assist in the evaluation of the materiality of an illegal act. Tests of transactions and balances and the study and evaluation of internal accounting control were mentioned to bring out some illegal acts, as would some inquiries of management. Legal counsel should be consulted

for advice on consulting management about the problem. The effects on the Auditor's Report vary depending on the extent and degree of the illegal act[s].

The materiality of the illegal act should be evaluated. The effects on the financial statements are of most importance. Often, loss contingencies and the adequacy of disclosure are involved. The act should be reported at a high enough level of management that appropriate action can be taken.

It may be difficult to discern the scope of the act's effect on the financial statements. Thus, a qualified or disclaimer of opinion should be issued due to the scope limitation. In some cases, an adverse opinion would be appropriate. If the client will not accept the report, the auditor should withdraw from the engagement and write an explanation to the board of directors. In addition, the auditor should use his/her professional judgment on whether to contact his/her legal counsel.

If the act is immaterial, but does not get appropriate attention, the auditor should consider withdrawing from the engagement and/or dissociating from any further client involvement, depending on what the auditor deems appropriate. The auditor is under no obligation to notify anyone.

18: May 1977 (Withdrawn by Auditing Standards Board)

19: June 1977 **CLIENT REPRESENTATIONS**

Effective Date: Periods ending on or after 9/30/77.

Management must furnish the auditor with written representations of management in order to comply with GAAS. Written representations should be addressed to auditors dated as of the date of the auditor's report and signed by chief operating and chief financial officers. This provides written confirmation of management's intent.

This representation by management should acknowledge their responsibility for the fair presentation of their financial statements and therefore their purported financial position. It also represents the assumption of responsibility for the supporting documentation and availability of that documentation. Thus, assurance is provided on that fair presentation that there are no known illegal acts, errors, and/or irregularities of a material nature. Anything having a material affect on the financial statements is claimed to be included.

Management's refusal to cooperate in furnishing such assurances is a scope limitation and precludes an unqualified opinion. The opinion should then be qualified or disclaimed.

20: August 1977 **REQUIRED COMMUNICATION OF MATERIAL WEAKNESSES IN INTERNAL ACCOUNTING CONTROL**

Effective Date: For Periods ending after 12/24/77.

For examinations of the financial statements made in accordance with GAAS, material weaknesses in internal accounting control which the auditor becomes aware of must be communicated to senior management, and the board of directors or its audit committee.

Material weaknesses of internal accounting control influence the nature, timing, and extent of audit tests. GAAS does not require every material weakness to be identified or every control to be evaluated. Internal accounting control is management's responsibility.

Material weaknesses should be reported. Once reported, they need not be repeated in later reports. The auditor may decide to report that no material weaknesses were discovered. Only how weaknesses affect the study and evaluation of internal accounting control is the auditor's concern. The form of communication is optional, and the corrective action may be suggested to the client.

21: Dec. 1977 **SEGMENT INFORMATION**

SFAS 14 require the disclosure of segment information. That is, data on operations in different industries, foreign operations and export sales, and major customers should be included. It is used not for comparison between firms in one industry, but as a tool to analyze and interpret an entity's financial statements and financial position in the past and speculated future.

Segment audit procedures are described which include inquiry of management and analytical review. The auditor must consider materiality in determining the nature, timing, and extent of auditing procedures. Inquiry should be made on the sales and transfers between industry segments. The audit should also test the generation of segment information by examining the percentages used and analytical review procedures utilized. The comparability to last year's calculations and budget projections should also be considered. Basically, the segment information should be scrutinized for reliability or "believability," i.e. the likelihood of a fair presentation should be proven.

Reporting on segment data was also outlined: Consistency is very important with segment information. Unless the segment has a misstatement or omission, it is not referred to in the report. The segment's importance depends on its impact on the entity as a whole. If the entity has segments and does not provide information on them, a scope limitation occurs and the opinion should be qualified. If segment information is reported separately, materiality should relate only to the segment. Whether presentation of segment information is voluntary or required, conformity with GAAP should be noted.

22: Mar. 1978 **PLANNING AND SUPERVISION**

Effective Date: Beginning after 8/31/84

This standard provides guidance for auditors following GAAS in their planning and supervision of an audit. Planning for an audit is a game plan overseeing the forecasted conduct and extent of the examination. Planning requires careful consideration of the firm's operating structure.

The auditor should be aware of the firm's accounting policies, procedures, and internal controls, as well as being aware of the industry in which the firm operates. The auditor, in planning the audit, must estimate risk levels and materiality concerns in order to forecast what type of report will be issued. Therefore, s/he will review files, inquire of personnel, and read interim financial

statements in order to grasp the big picture of the audit. In so doing, s/he can then establish the timing of the audit work and the staff requirements of the audit. This preliminary work can be sent to management in a memorandum if the auditor so chooses.

The goal in the planning state is to develop an audit program that will enable a sufficient knowledge of the business and the industry in which it operates to assure the auditor that all transactions and events significantly influencing the financial statements are presented fairly. This knowledge often comes from experience. If the services of a specialist are required, the auditor should retain the expert as needed.

Supervision involves overseeing the audit work of assistants and reviewing the work they complete.

23: Oct. 1978 **ANALYTICAL REVIEW PROCEDURES**

This standard concerns analytical review procedures, which are substantive tests used to analyze relationships between data. Analyzing these relationships will generate evidential matter and indicate the need for any additional work.

Analytical procedures are used in the study and comparison of financial information. The degree and extent of testing are determined according to the auditor's judgment. These procedures also apply to the nature of the entity and the scope of the engagement as well as to the availability, reliability, and comparability of financial information.

Investigating significant fluctuations is also a result of analytical review procedures. The degree of fluctuation is important as is the reasonableness of what the tests concluded. The nature and extent of procedures depends on the objectives of the testing, the internal accounting controls, the results of other auditing procedures, the auditor's experience and the nature of the item.

24: Mar. 1979 (Superseded by SAS 36)

25: Nov. 1979 **THE RELATIONSHIP OF GENERALLY ACCEPTED AUDITING STANDARDS TO QUALITY CONTROL STANDARDS**

The auditor must comply with GAAS which will affect audit engagements s/he conducts. GAAS relates to audits on an individual basis. The firms it audits must also comply. Quality control standards should be established by the firm because it must adhere to GAAS. These standards relate to the audit program as a whole. The nature and extent of these standards vary depending on the size and needs of the firm. Such standards [for quality control] will help.

26: Nov. 1979 **ASSOCIATION WITH FINANCIAL STATEMENTS**

The fourth standard of reporting requires an expression of opinion or explanation for no opinion in the auditor's report. The purpose of this standard is to prevent misinterpretation of the level of responsibility the auditor assumes when his/her name is associated with the statements. When accountants are associated with anything that has not been audited, the presentation of the financial statements must clearly set forth that the statements are

unaudited or unreviewed on each page of the report. Note that in such a situation, the auditor has no responsibility beyond merely reading the statements and looking for obvious material errors.

The same rules apply for unaudited financial statements prepared on a comprehensive basis of accounting other than GAAP. The second general standard requires the auditor to be independent. Therefore, any bias for or against the client in substance or form is inappropriate and would preclude the expression of a valid and useful opinion.

If the unaudited financial statements are known to not adhere to GAAP and a disclaimer of opinion is expected, a modified disclaimer is permitted if disclosure is adequate and revision is agreed to by the client.

If the financial statements, audited or unaudited, are prepared in comparative form, it should clearly be identified which years were audited and which were not. A separate paragraph in the auditor's report should identify divisions of responsibility for the various years. The auditor is to provide negative assurance on the financial statements taken as a whole.

27: Dec. 1979 (Superseded by SAS 52)

28: June 1980 (Withdrawn by SAS 52)

29: July 1980 **REPORTING ON INFORMATION ACCOMPANYING THE BASIC FINANCIAL STATEMENTS IN AUDITOR-SUBMITTED DOCUMENTS**

Effective Date: For periods on or after 12/31/80.

This standard regards information provided in addition to the financial statements. When the auditor submits a document containing audited financial statements, s/he has the responsibility to report on all information included in the client-prepared document.

The auditor's report is always a means to convey division of responsibility and an expression of opinion. This also applies to information accompanying the basic financial statements. The reporting of it requires the auditor to ascertain the level of materiality of the information on its influence/affect on the financial statements.

The auditor's report on information accompanying basic financial statements in auditor-submitted documents has the same objectives as the auditor's report on basic financial statements. The examination is done in order to form an opinion on the financial statements taken as a whole. The identified accompanying information should be presented for purposes of additional analysis and is not required. An opinion or disclaimer of an opinion should be included on the accompanying information.

Supplementary information required by FASB or GASB that the client must report on should be assessed by the auditor. The information should be analyzed and an opinion or a disclaimer of opinion expressed on it.

As for consolidated information, GAAP should be followed and an opinion or a disclaimer of an opinion expressed. Any coexisting financial statements must follow GAAP and be in accordance with each other. Adequate disclosure must be determined.

30: July 1980 **REPORTING ON INTERNAL ACCOUNTING CONTROL**

This standard identifies and describes the various reports from the different kinds of engagements that the auditor may utilize in the assessment of an entity's internal control structure. Different forms of accountant's reports were described which would be issued in connection with such engagements.

Internal accounting control can be reported on merely by auditors expressing an opinion or by a report on the system itself in conjunction with the reality of its functioning.

The purpose of the control review is to provide assurance, within reason, that the control system is in place and functioning properly. This will assure management that the accounting procedures are reasonably accurate and can be relied upon. The reliability thus established is for the sake of the owners. The system should be reviewed regularly due to the dynamic nature of business. Changing times requires changing controls structure to minimize the inherent limitations in the internal accounting controls. It is appropriate for such a review of the controls to be more extensive than the audit review of the controls.

This audit of internal accounting controls begins with planning the engagement's scope. This will involve acute observation and inquiry as well as an element of speculation. The design of the system should then be reviewed allowing the auditor to assess the efficiency of usefulness of and reliance on the system. Administrative and managerial elements of the control structure are also reviewed.

Third, compliance with prescribed procedures is tested to assure the auditor of the functioning of the system. Lastly, the results of the review of the system design and tests of compliance are evaluated. In this stage, weaknesses should be identified. This involves a risk assessment on the probability of errors and irregularities.

Management should usually be required to provide written representation to their acceptance of responsibility and cooperation with the auditors.

Auditors' experience will determine the extent of their working papers. The report itself should contain an expression of opinion, its conformity to GAAP, and a reporting of any material weaknesses, scope limitations, part of the report prepared by another accountant or subsequent information.

When the report is based on a study and evaluation made as part of an audit, the report should clearly identify what was reviewed in the work so as not to purport an in depth analysis. Other aspects of the report are basically the same as the study and evaluations conducted separately.

In the event of special purpose reports, the scope and nature of the auditor's examination should be described. The system as a whole has not been reviewed, and therefore a disclaimer of opinion on it is necessary. The conclusions of what was analyzed should be set forth and the limited distribution should be identified. Material weaknesses should be communicated to upper management, the board of directors, and the audit committee.

31: Aug. 1980 **EVIDENTIAL MATTER**

This standard expounds upon the third standard of field work and analyzes the decision process auditors follow in obtaining and evaluating evidence.

To assist the preparation of the audit procedures, five assertions were identified: [1] Presentation and disclosure of the financial statements must be appropriate, [2] Existence or occurrence of assets or liabilities must be investigated, [3] rights and obligations of the assets and liabilities of a firm should be considered, [4] Completeness of all transactions and accounts should be considered, and [5] Valuation or allocation with regard to whether financial statement elements are properly disclosed should be reviewed.

These assertions can assist the auditor in developing audit objectives and designing substantive tests. The specifics depend on the entity under review--the extent of reliance on the system of accounting and the relationship between the internal accounting controls and the risk of errors and/or irregularities. The nature, timing, and extent of the procedures is a result of professional judgment.

Evidential matter is the supporting documentation to the financial statements. It is gathered through analysis and review. The more objective and independent the source of evidential matter, the more it can be relied upon. The sufficiency of it depends on the auditor's experience and judgment to determine if the matter is persuasive enough to justify their conclusions, though it may not be convincing enough. The auditor must be aware of the costs and benefits of obtaining additional supporting documentation. In evaluating the evidential matter, the auditor will consider the level of objectivity of the evidence, the accordance to GAAP, and its correlation to the financial statement assertions drawn.

32: Oct. 1980 **ADEQUACY OF DISCLOSURE OF FINANCIAL STATEMENTS**

Adequate disclosure is required under GAAP. Disclosure is to be considered adequate unless otherwise stated in the auditor's report. This is in conformity to the third standard of reporting. If disclosure is inadequate due to management withholding information, the auditor will express a qualified or adverse opinion. In addition, the information left out by the client should be included in their audit report if the data is readily accessible or easily compiled.

The auditor must obtain information from the client in confidence so as to enable free disclosure of all matters. The accountant is allowed to not report something if it is permitted by GAAP.

33: Oct. 1980 (Superseded by SAS 45)

34: Mar. 1981 **THE AUDITOR'S CONSIDERATIONS WHEN A QUESTION ARISES ABOUT AN ENTITY'S CONTINUED EXISTENCE**

This standard provides the auditor with guidance when the inability of the entity to continue as a going concern is identified. Usually, this means the company has failed to meet its obligations as they become due in the ordinary course of

business. The ability of the firm to continue as a going concern is assumed unless information is found to negate this assumption. The auditor therefore assumes the longevity of the business in the generation of his/her opinion.

Contrary information is contradicting data discovered at any time through the date of the report. Usually, such data relate to the going concern of the company. Some factors mitigate the information's significance. This commonly relates to the flexibility of the client to assume a new course of action. The auditor must examine contrary information and mitigating factors to conclude the nature of the situation, i.e. the longevity of the situation, as well as any legal aspects to consider. Management's planned action is also important, when and if they plan on taking action on the situation.

The auditor should also analyze management's attitudes and plans with regard to forecasted information. The auditor should disclose the conditions which make the firm's ability to continue as a going concern a debatable issue. Substantive tests may be conducted to support any conclusions. The auditor must weigh the effects the auditor's report will have on the situation when determining what to disclose.

35: Apr. 1981 **SPECIAL REPORTS--APPLYING AGREED-UPON PROCEDURES TO SPECIFIED ELEMENTS, ACCOUNTS, OR ITEMS OF A FINANCIAL STATEMENT**

Auditors are allowed to accept limited scope engagements as long as both parties know and understand the extent of the procedures that will be applied, and both parties agree that the distribution of the report will be limited to named parties. Typically, the scope limitation will prevent the auditor from applying extensive audit procedures. Commonly, only a limited number of accounts or items will be audited.

This requires the auditor to satisfy him/herself that the parties involved know what is going to be included in the audit report. This is usually done through a meeting for all related parties. If this is not possible, the communication can be made through substitutes, i.e. legal counsel or a representative such as a trustee or a creditor's committee. The second and third standards of field work do not apply to engagements limited in scope like special reports. The accountant's report should identify the scope of the engagement, intended distribution, procedures used and the conclusions drawn, and disclaim an opinion on the financial statements taken as a whole.

36: Apr. 1981 **REVIEW OF INTERIM FINANCIAL INFORMATION**

The auditor's report should state that the procedures followed and the data provided are in accordance with AICPA standards in the event of interim financial information review. The auditors should also describe interim date audit procedures and identify the lesser scope of the examination. No opinion is expressed, and a statement assuring conformity with GAAP is provided. The date is as of the completion of the review. The audit report is usually not modified unless there is a departure from GAAP. In addition, every page is marked 'unaudited,' and the interim data required by the SEC is provided.

The accountant should only allow the use of his/her name if there are no restrictions on the scope of the review and the extent of the work done is clarified. A review report example was given. This review report should be modified if the financial information presentation departs from GAAP or there is inadequate disclosure. The client's representation concerning a review of interim financial information must accurately depict the nature of the auditor's report. If it in any way does not, the auditor's name should not be used.

37: Apr. 1981 **FILING UNDER THE FEDERAL SECURITIES STATUTE**

Accountants associated with a set of financial statements have the responsibility of presenting statements that are not misleading or wrong according to the Securities Act of 1933. As self-defense, the accountant should take care in the wording of their audit report so as not to infer greater responsibility than was actually assumed.

Subsequent events should be tested for through the audit procedures from the audit report date up to the effective date. Inquiries should be made and any appropriate tests should be conducted to assure fair presentation on prior period information. It may be appropriate for the auditor to withhold consent for the use of the report--This decision should be made with the advice of the auditor's attorney.

38: Apr. 1981 (Superseded by SAS 49)

39: June 1981 **AUDIT SAMPLING**

Effective Date: Periods on or after 6/25/83; SAS 43 made this effective retroactively to 6/25/82.

This standard provides guidance on the use of sampling in an audit of financial statements. Audit sampling is done in order to characterize an account or class of transactions. Nonstatistical and statistical sampling require that the auditor use his/her professional judgment in drawing conclusions on the financial statements being audited.

Sufficient competent evidential matter must be obtained. The competence of it is a matter of auditor judgment. Inherent uncertainty in audit sampling is known as audit risk. The auditor also has sampling risk--the risk of drawing the wrong conclusion either positively or negatively.

Sampling in substantive tests of details begins with planning samples in order to achieve the objectives of the audit. A sample must be selected and the performance and evaluation procedures should be established. The same definitional basis applies to internal accounting controls. It is acceptable for samples to have dual purposes.

The sampling approach selected should be the most efficient and effective means to identifying the situation the client is in. The costs and benefits of determining the extent of the sampling should be weighed.

40: Feb. 1982 (Superseded by SAS 52)

41: Apr. 1982 **WORKING PAPERS**

Effective Date: Engagements beginning after 5/31/82

Working papers are maintained and designed to verify that the objectives of the engagement are being met. The functions, nature, and content of working papers were defined.

The functions and nature are to provide support for the auditors' conclusions and to aid the direction and overseeing of the engagement. The nature of the work will affect the auditor's judgment on it. The content should be sufficient to verify the conclusions of the auditor and prove the comprehensiveness of the agreed upon report. The working papers are the property of the auditor, subject to ethical limitations relating to confidential client relationships.

42: Sep. 1982 **REPORTING ON CONDENSED FINANCIAL STATEMENTS AND SELECTED FINANCIAL DATA**

Effective Date: On or after 9/30/82

This standard provides guidance on reporting in a client prepared document which contains information derived from complete audited financial statements and are reported as [1] condensed financial statements, and [2] selected financial data. For the former, the complete financial statement report should be given in addition to the type of opinion expressed. The information should fairly present in all material respects the information from which it was derived. For the latter, the same rules apply. If a different auditor prepared some of the data, this should be stated and no expression of an opinion on that data should be made by the auditor.

43: Aug. 1982 **OMNIBUS STATEMENT ON AUDITING STANDARDS**

Effective Date: After 8/31/82; This statement made SAS 39 retroactively effective to 6/25/82.

Accounting control is within the scope of the study and evaluation of internal control contemplated by GAAS, while administrative control is not. The study for the evaluation of internal control should include both an understanding of the system and assurance that the system is being utilized. This will determine reliance on the system of internal controls. Internal controls of a public warehouse were also discussed.

The GAAS was cited because this standard amended that services other than examinations of financial statements be subject to GAAS.

Inventories held in public warehouses should be confirmed by [a] the custodian directly, [b] reviewed control procedures, [c] personal observance of the physical counts of goods.

This standard also identified control elements and auditing procedures for goods stored in public warehouses: Reasonable safeguards should be provided.

This standard went into depth on the study of internal control--its scope and procedures in system review. It also covered tests of compliance. The standard provided guidance on report considerations for uncertainties affecting the financial statements, which requires a separate paragraph for disclosure in the auditor's report.

44: Dec. 1982 SPECIAL-PURPOSE REPORTS ON INTERNAL ACCOUNTING CONTROL AT SERVICE ORGANIZATIONS

Effective Date: Periods beginning after 12/31/82.

This standard provides guidance on the independent auditor's use of special-purpose reports on certain aspects of internal control of organizations that provide the following services to an auditor's client: [1] Executing transactions and maintaining related accountability; [2] Recording transactions and processing related data; and [3] Various combinations of these services.

Service organizations that maintain controls that do or do not interact with client organization controls influence special purpose reports on internal control. Auditors must determine the adequacy of the controls to decide if there is a basis for reliance.

This service auditor's report was analyzed. Basically, the goals are basically the same as regular audit reports. Reports on the system were discussed through example.

45: Aug. 1983 OMNIBUS STATEMENT ON AUDITING STANDARDS--1983

Effective Date: Periods ended after 9/30/83.

This standard regards substantive tests prior to the balance sheet date and involves appropriate auditing procedures. This concerns audit testing at the interim dates and does increase that risk of errors at the balance sheet date will go undetected. The cost and benefits of the substantive tests are important. The auditor must consider existing conditions in the business and its industry as well. Substantive tests should be designed then to extend audit conclusions to the balance sheet date. The timing of the auditing procedures should be coordinated for related party transactions and testing of interrelated accounts and accounting cutoffs.

This standard also provides guidance on related party transactions. The auditor should consider related party transactions similarly to regular transactions when GAAS is followed. Some such transactions may not be detected. The auditor should be wary for conditions favorable to related party transactions--such as significant litigation, obsolescence dangers, a declining industry, optimistic [excessive] earnings forecasts, etc. Specific audit procedures can be applied to determine the existence and to identify transactions with related parties. It is not uncommon for related party transactions to not be detectable.

When it is material, the evidential matter should be reviewed. Professional judgment determines adequate disclosure.

46: Sep. 1983 CONSIDERATION OF OMITTED PROCEDURES AFTER THE REPORT DATE

Effective Date: 10/31/83.

This standard provides guidance on the auditor's responsibility when s/he realizes, subsequent to the date of the audit report, that one or more necessary procedures may have been omitted. In such an event, the auditor must assess the importance of the omission to determine the appropriate course of action. If the auditor is unable to perform the appropriate procedures, and

attorney should be consulted.

The auditor has no responsibility to retrospectively review the work. If the situation is that a procedure was omitted that is now important, the auditor should comply with the procedure in an attempt at supporting the original opinion.

47: Dec, 1983 **AUDIT RISK AND MATERIALITY IN CONDUCTING AN AUDIT**

Effective Date: For periods beginning after 6/30/84.

This standard gives guidance on [1] audit risk, and [2] materiality when planning and performing an audit. The components of audit risk were defined: [1] Inherent risk--Is the risk that there is an innate problem in the records and the problem is undetected; [2] Control risk--Is the risk that the auditor would not prevent or detect a material error in his/her audit; and [3] Detection risk--Is the risk that the management's system will fail to detect a material error.

Detection risk varies inversely with the inherent and control risks. It is not appropriate to rely completely on assessments of inherent risk and control risk. Substantive tests for material accounts are necessary. When total likely error is material, the auditor must either issue a qualified or an adverse opinion.

48: July 1984 **THE EFFECTS OF COMPUTER PROCESSING ON THE EXAMINATION OF FINANCIAL STATEMENTS**

Effective Date: For periods beginning after 8/31/84.

Audit objectives do not change whether accounting data is processed manually or by computer. The methods of gathering evidential matter will change. The auditor should consider how using the computer will affect the audit engagement. Analytical review procedures will also be affected. Internal accounting control procedures and segregation of duties will be affected and assessed differently. Some functions can be performed by a computer that would be incompatible if done manually. The auditor may require the assistance of specialized skills to conduct the audit on computer processing. This can be met from his/her own audit staff. Analytical review procedures are similar.

49: Sep. 1984 **LETTERS FOR UNDERWRITERS**

Effective Date: On or after 10/31/84.

When a CPA has audited the historical financial statements, s/he may give a comfort letter primarily through negative assurance of the reliability appropriate to be placed on the financial statements taken as a whole. This is only with regard to matters in which his/her professional competence is substantially relevant. The SEC usually accepts only unqualified reports, including those with explanatory languages on uncertainties. Basically, the same procedure applies for unaudited reports.

50: July 1986 **REPORTS ON THE APPLICATION OF ACCOUNTING PRINCIPLES**

This statement provides guidance on the development of accounting principles, often important when relating such procedures in connection with a proposal to obtain a new client. It applies to oral and written advice on the application of accounting principles. This does not apply to the accountant

reporting on financial statements or to accountants writing position papers.

Performance standards require comprehension of the form and substance of transactions and adherence to GAAP. Reporting standards require engagement and transaction descriptions. The applicable accounting principles supporting the opinion should be stated, along with both a statement on management being responsible for the financial statements and a statement that any changes in the data as presented could change the auditor's opinion.

51: July 1986 **REPORTING ON FINANCIAL STATEMENTS PREPARED FOR USE IN OTHER COUNTRIES**

Effective Date: Periods beginning after 7/31/86.

This standard provides guidance for an auditor practicing in the U.S. who is engaged to report on the financial statements of a U.S. entity that have been prepared in conformity with accounting principles of another country. The report issued for use outside of the U.S. may either be a [1] modified U.S. report. or [2] if appropriate, a report of another country.

If the report conforms to requirements of the other country, then the audit still must comply to GAAS with respect to the prescribed basis of accounting. The auditor should use the standard report form if the report will be used in the U.S.

52: Apr. 1988 **OMNIBUS STATEMENT ON AUDITING STANDARDS--1987**

When supplementary information is required by the FASB or GASB pronouncements, if it is presented outside the basic financial statements in an auditor-submitted document, the auditor should disclaim an opinion on this information unless engaged to do so. This standard provides the independent auditor with guidance on the nature of procedures to be applied to supplementary information required by the FASB or GASB, and described the circumstances that would require the auditor to report such information.

53: Apr. 1988 **THE AUDITOR'S RESPONSIBILITY TO DETECT AND REPORT ERRORS AND IRREGULARITIES**

Errors are unintentional mistakes. Irregularities are intentional deviations from fact. Due care and professional skepticism must be utilized in order to have a properly designed and executed audit which will not, though it may, miss a material irregularity, especially a misrepresentation involving fraud, such as collusion or forgery.

Factors were listed to assist the auditor's alertness to possible material misstatements. Evaluation of the audit test results must consider the level of materiality of errors or irregularities. The effect of irregularities on audit reports is requested revision. Errors or irregularities that are material must be communicated. Concealment is commonly involved in cases of irregularity.

54: Apr. 1988 **ILLEGAL ACTS BY CLIENTS**

Effective Date: Periods beginning on or after 1/1/89.

The auditor's responsibility for illegal acts having a direct and material effect on financial statements [except disclosure of

contingencies] is the same as for errors and irregularities. Audits normally do not include procedures designed to detect illegal acts, but other procedures could identify them. Consider contacting legal counsel after inquiring of management at least one level above those involved. The audit committee should be fully informed through either oral or written communication.

55: Apr. 1988 **CONSIDERATION OF THE INTERNAL CONTROL STRUCTURE IN A FINANCIAL STATEMENT AUDIT**

Effective Date: Beginning on or after 1/1/90.

An entity's internal control structure consists of the policies and procedures established to provide reasonable assurance that specific entity objectives will be achieved. Its ability to record, process, summarize and report financial data consistent with assertions in financial statements is important. The control environment and the accounting system were outlined along with control procedures and the effect of the internal control structure elements on assessments of risk components. The relationship of understanding the control structure to assessing control risk was considered with the degree of evidential matter considered sufficient to support the assessment of control risk.

In the assessing of control risk on the internal control structure, the financial statement assertions--presentation or disclosure, existence or occurrence, completeness, rights and obligations, valuation or allocation, and presentation and disclosure are elements the auditor should consider in the conducting of their audit. Evidential matter should be as objective as possible.

56: Apr. 1988 **ANALYTICAL PROCEDURES**

Effective Date: Periods beginning on or after 1/1/89.

Analytical procedures consist of evaluations of financial information made by a study of plausible relationships among financial and nonfinancial data. Analytical procedures in planning and substantive tests were outlined. The more independence from the entity with the data used to develop an expectation, the more reliability is placed on the conclusions from that data. In overall review, the conclusions reached are assessed and the overall financial statement presentation is evaluated.

57: Apr. 1988 **AUDITING ACCOUNTING ESTIMATES**

Effective Date: Periods beginning on or after 1/1/89.

This standard provides guidance on obtaining and evaluating evidential matter to support accounting estimates in historical financial statements. The accounting estimates in the financial statements are management's responsibility. They are developed on the basis of subjective and objective criteria.

The auditor's evaluation of accounting estimates should be developed through sufficient competent evidential matter, be reasonable on the basis to historical estimates, and should follow GAAP. The auditor should develop his/her own expectation for the estimate[s]. An adequate internal control structure will reduce the chance of material misstatements, which estimates attempt to approximate. To assure the evaluation, the auditor should review

subsequent events and transactions.

58: Apr. 1988 **REPORTS ON AUDITED FINANCIAL STATEMENTS**

Effective Date: Periods beginning on or after 1/1/89.

The auditor may issue a variety of reports on audited financial statements. His/her justification for the expression of opinion in the report is based on the entity's conformity with GAAS. The fourth standard of reporting must be adhered to: The report shall contain an expression of an opinion or an explanation for no opinion being expressed. The primary concern of the auditor in issuing the report is to fairly represent the financial position of the company. The auditor does not want to mislead or confuse the readers of the financial statements.

The auditor's standard report should include an address to the company, board of directors or shareholders. It should state that the financial statements present fairly, in all material respects, the entity's financial position, results of operations, and cash flows in conformity with GAAP.

There are five possibilities in issuing a report: [1] unqualified opinion, [2] explanatory language added to the auditor's standard report, [3] qualified opinion, [4] adverse opinion, and [5] disclaimer of opinion.

If the opinion is based on the work of another auditor, reference should be made to him/her in all three standard paragraphs. A departure from a promulgated accounting principle requires a separate paragraph of explanation. Uncertainties may require an explanatory paragraph, depending on the auditor's judgment. Most uncertainties relate to contingencies of the entity, however, they also can include problems of inadequate disclosure, materiality considerations, and departure from GAAP. Uncertainties are usually expected to be resolved in the future. Inconsistencies usually refer to changes in accounting principles. This situation should be set forth in an explanatory paragraph.

Qualified opinions are situations that state except for a particular event or circumstance, the financial statements are fairly presented. An example of such a circumstance is a lack of sufficient competent evidential matter, a scope limitation, or a departure from GAAP.

Adverse opinions represent situations where the financial statements do not fairly represent the financial statements of an entity. In the event of a disclaimer of an opinion, the auditor is not expressing any opinion on the financial statements.

In the event of comparative financial statements, the auditor must assure a fair presentation for the statements taken as a whole--for all the periods represented.

59: Apr. 1988 **THE AUDITOR'S CONSIDERTATION OF AN ENTITY'S ABILITY TO CONTINUE AS A GOING CONCERN**

Effective Date: Periods beginning on or after 1/1/89.

The standard provides guidance on evaluating whether there is substantial doubt about the entity's ability to continue as a going concern, which is assumed in absence of significant information to the contrary. The auditor's responsibility is to evaluate whether there is substantial doubt for a reasonable period of time, and

they are not responsible for predicting future conditions and events. When substantial doubt exists, modify the report to include an explanatory paragraph following the opinion paragraph.

60: Apr. 1988 **COMMUNICATION OF INTERNAL CONTROL STRUCTURE RELATED MATTERS NOTED IN AN AUDIT**

Effective Date: Periods beginning on or after 1/1/89.

This standard provides guidance in identifying and reporting conditions that relate to an entity's internal control structure that were observed during an audit. The audit committee will have any reportable conditions reported to them by the auditors. Reportable conditions are considered to be significant deficiencies in the design or operation of the internal control structure. The auditor is not responsible for searching out reportable conditions, however, over the course of the audit, s/he may become aware of such situations. In that event, these conditions should be reported.

These inadequacies could detrimentally affect the organization's ability to record, process, summarize and report financial data consistent with the assertions of management in the financial statements. In some cases, the condition may be so significant, that the matter is considered to be a material weakness in the internal control structure. Under such circumstances, reporting the matter separately is left to the auditor's discretion.

The auditor may also choose to communicate other matters. Usually, the client and the auditor will establish an agreed-upon criteria by which an ad hoc standard is set regarding what to report to the audit committee. This communication should be highlighted as specifically for the audit committee.

61: Apr. 1988 **COMMUNICATION WITH AUDIT COMMITTEES**

Effective Date: Periods beginning on or after 1/1/89.

This standard requires the auditor to communicate certain matters to those who have responsibility for oversight of the audit. Normally, this is the audit committee. This only applies to SEC engagements and other entities that have audit committees or equivalent oversight groups. Communication can be oral or written, and it is incidental to the audit. The report should be presented on a timely basis.

Matters which should be communicated include [1] the auditor's responsibility, [2] the significant accounting policies and accounting estimates of the entity, [3] the internal control structure of the entity, [4] the assurance that the financial statements are free of material misstatement, [4] consultation with other accountants, [5] any auditor disagreements with management, or [6] any other difficulties encountered in performing the audit. [7] The audit committee should receive additional information on the scope of the engagement.

62: June 1989 **SPECIAL REPORTS**

This statement prescribes a new special report form which parallels the form of the auditor's standard report in SAS #58. It requires a statement that the financial statements were prepared

in conformity with a comprehensive basis of accounting other than GAAP. There is no requirement to describe in the auditor's special report how the presentations differ from a presentation in conformity with GAAP. However, there are requirements for issuing a special-purpose report on special or incomplete presentations. The distribution of some reports is restricted [1] Reports with presentations that are either not in conformity or are incomplete in accordance with GAAP or another comprehensive basis of accounting; and [2] Reports on compliance with aspects of contractual agreements or regulatory requirements related to audited financial statements. [Journal of Accountancy, January 1990]

FINANCE MODULE

May 14-16, 1992
Prague, Czechoslovakia

Session	Day 1 - May 14	Day 2 - May 15	Day 3 - May 16
8:30-10:00	Introduction	Investment Opportunities	Financing Operations
Break			
10:15-11:45	The Financial Environment	Investment Opportunities	Conclusion
Lunch			
1:30-3:00	Financial Performance	Investment Opportunities	
Break			
3:15-4:45	Financial Performance	Financing Operations	

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FINANCE
PRAGUE, CZECHOSLOVAKIA

I. Introduction (Professor Karolyi)

The finance module is designed to teach managers about corporate financial decision making. We need to outline corporate objectives within the context of a firm operating in a market-based economy, primarily that of maximizing the value of the owner's stake in the firm. We also want to understand the role of finance within the corporate organization including budgeting, raising funds, evaluating investment projects and long-term planning of the future costs and financing needs for future operations.

A. Welcome and Introduction of Instructors
   1. Introduction of Instructors, Materials, etc.
   2. Review of Schedule

B. The Goals of Financial Management
   1. The Corporate Objective
   2. The Role of the Financial Manager

C. Overview of the Finance Module Organization

II. The Financial Environment in Czechoslovakia (Professor Viertl)

This module segment should provide an overview of the financial system in Czechoslovakia. A general introduction into the size and structure of state and private enterprises in the economy should be followed with an outline of the types of financial institutions and assets available and the means to create and transfer those financial assets. The focus should be on the banking system, both domestic and foreign, as well as the domestic stock exchange and foreign exchange markets. Some broad perspectives on the magnitude of foreign capital investment in Czechoslovakia through direct investments (acquisitions) and joint ventures should be discussed. Finally, a general discussion of the privatization process and the most recent reforms should conclude the session.

A. The Size, Structure and Nature of State and Private Enterprises
   1. Nature of State Enterprises - Size and Structure
   2. Nature of the Private Sector - Size and Structure
   3. The Shadow Economy

B. The Financial System
   1. The Domestic Banking System
   2. The Foreign Banks
   3. Domestic Foreign Exchange Market
   4. The Market for Share Capital and Vouchers

C. Foreign Capital Investment in Czechoslovakia
   1. Regulatory Governance of Foreign Capital
   2. Size and Form of Foreign Capital Investments

D. Privatization in Czechoslovakia
   1. Conversions to Joint-Stock Companies
   2. Liquidations and Bankruptcy Sell-offs
   3. Recent Reforms

III. Analyzing Corporate Financial Performance (Professor Longstaff)

The accounting module which precedes the finance module in the program will have introduced the basics of financial reporting. A review of the structure of the balance sheet, income statements and statement of changes in financial position report should, however, be included. The main objective is to introduce financial statement analysis which is the art of analyzing and interpreting financial statements to be able to assess corporate financial performance. Analysis will focus on financial ratios, their comparability with other companies and industries. (One idea here is to adapt the famous Harvard "Unidentified Industries" case from the Butters et al. textbook for a set of local companies). We also need special emphasis on understanding the impact of inflation on the assessment of performance. Finally, an introduction to financial forecasting for planning would be useful.

A. Review of Financial Statements
   1. The Balance
   2. The Income Statement
   3. The Cash Flow Statement - Source and Uses Statements

B. Evaluating Financial Statements
   1. Ratio Analysis
   2. Comparative Analysis of Ratios

C. Forecasting Future Financial Performance
   1. Business Planning - The *Pro Forma* Statement
   2. Simulation Techniques

IV. Evaluating Investment Opportunities (Professors Karolyi and Longstaff)

We examine how managers allocate scarce capital among different investment opportunities for the firm. In the process, we focus on the time value of money and discounting future cash flows, future uncertainty and accounting for risk and the process of ranking projects. A useful illustration would be in terms of the lease v. buy decision. Finally, we extrapolate our techniques to the valuation of a business.

A. Valuation I - Capital Budgeting
   1. Cost-Benefit Analysis of Proposed Investments
   2. Simple Valuation Methods - Benefit-Cost Ratios, Payback
   3. Timing and the Process of Discounting Cash Flows
   4. Ranking Alternative Projects - A Lease v. Buy Decision Example
   5. Dealing with Risk

B. Valuation II - Business Valuation
   1. Present Value Analysis of Cash Flows from a Business Operation
   2. Earnings-Valuation Methods
   3. Other Techniques - Book Value, Liquidation Value, etc.

V. Financing Operations (Professors Longstaff and Viertl)

The objective is to highlight the different sources of financing available for operations. We focus on the importance of working capital policies (managing current assets and liabilities) and the sources of short-term financing in the form of trade credit, accruals, notes payable, factoring etc. The impact of inflation on cash management should be discussed. We also outline the sources and forms of long-term financing in the banking sector, intermediate and long-term debt market, equity financing. We also consider international sources of financing, primarily via joint venture operations. Finally, we discuss the process of choosing among different sources of financing by introducing the concept of the cost of capital and different ways to measure it.

A. Working Capital Management
   1. Working Capital Policy - Inventory Control, Credit Policy, etc.
   2. Cash Management
   3. Short-term Financing of Working Capital Needs

B. Long-term Financing - Sources and Costs of Financing in Czechoslovakia
   1. The Money and Capital Markets - Bank Debt
   2. Long-term Debt Market
   3. Preferred and Common Stock Market
   4. Foreign Investments - International Joint Ventures

C. Long-term Financing - The Cost of Capital
   1. The Cost of Debt Financing
   2. The Cost of Equity Financing
   3. The Weighted-Average Cost of Capital

VI. Summary and Review (Professor Karolyi)

The objective of this last session will be to provide an overview of the basic principles of financial management that we have examined in the entire module. One way to motivate this would be an all-encompassing case study drawn from a Czechoslovakian context that will also be relatively open to potential feedback from the session participants to the instructors about what *they think* is important in financial decision making.

A. An Integrative Case Study - Czechoslovakian Example

B. Summary Overview

C. Feedback Session from Participants

FINANCE

MATERIALS FOR THE FINANCE MODULE SESSION

WILL BE HANDED OUT DURING CLASS

STRATEGY MODULE

June 8-10, 1992
Prague, Czechoslovakia

Session	Day 1 - June 8	Day 2 - June 9	Day 3 - June 10
8:30-10:00	Entrepreneurship: Myths and Realities	Managing Growth in the Emerging Firm	Joint Ventures
Break			
10:15-11:45	Strategic Management for Emerging Firms	Operational Effectiveness for Achieving Growth	Privatization Case Wrap Up
Lunch			
1:30-3:00	Strategic Management and the Management of Change	Funding Startup and Growth	
Break			
3:15-4:45	Preparing the Business Plan	Funding Startup and Growth	

STRATEGY
PRAGUE, CZECHOSLOVAKIA

Entrepreneurship: Myths and Realities
- changes in Czechoslovakia

Strategic Management for Emerging Firms
- case discussion

Strategic Management and the Management of Change
- large firm emphasis

Preparing the Business Plan

Managing Growth in the Emerging Firm
- Czechoslovakia application

Operational Effectiveness for Achieving Growth
- Czechoslovakia application

Funding Startup and Growth
- emphasis on growth
- Czechoslovakia application

Joint Ventures

Privatization Case

Wrap up

STRATEGY

MATERIALS FOR THE STRATEGY MODULE SESSION

WILL BE HANDED OUT DURING CLASS

HUMAN RESOURCE MANAGEMENT MODULE

June 10-12, 1992
Prague, Czechoslovakia

Session	Day 1 - June 10	Day 2 - June 11	Day 3 - June 12
8:30-10:00		Outdoor Challenge/ Leadership Course	The Role of Training in Improving Organization Effectiveness
Break			
10:15-11:45		Outdoor Challenge/ Leadership Course	The Role of Training in Improving Organization Effectiveness
Lunch			
1:30-3:00	Enhancing Productivity Through Effective Employee Selection Systems	Outdoor Challenge/ Leadership Course	Critical Issues in Managing the Czechoslovakian Workforce 2000
Break			
3:15-4:45	Enhancing Productivity Through Effective Employee Selection Systems	Outdoor Challenge/ Leadership Course	Critical Issues in Managing the Czechoslovakian Workforce 2000

HUMAN RESOURCE MANAGEMENT
PRAGUE, CZECHOSLOVAKIA

BACKGROUND

The opening of Eastern European countries to free market systems and the global economy will undoubtedly cause many dramatic changes in the lives of managers in these countries over the next decade. Although some of these changes will require managers to come to a better understanding of the "technical" or "quantitative" aspects of running a business (e.g., Market Economics, Accounting, Finance, Operations Management, Logistics/Distribution), other changes will require the managers to learn more about how to effectively utilize human "resources."

The primary objective of this module is to provide the participants in the program with a better understanding of some fundamental issues in Human Resources Management. Specifically, the material presented in this part of the program will be designed to help the managers: (a) improve their abilities to identify, recruit, and select those individuals who are likely to be the most productive employees, (b) learn more about the role that employee training plays in organizational effectiveness, (c) develop strategies for fostering more cooperative relationships between managers and workers, and (d) deal more effectively with the critical human resource management issues facing them. Although the discussion of some conceptual/theoretical issues will be unavoidable, the major focus of this module will be on providing managers with practical tools and techniques that they can be applied to their present human resource problems.

The pedagogical approaches to be used in this module will include traditional methods such as classroom lectures and in-class simulations, as well as non-traditional methods, such as outdoor experiential initiatives and exercises.

MAJOR PROGRAM COMPONENTS:

I. ENHANCING PRODUCTIVITY THROUGH THE DEVELOPMENT OF EFFECTIVE EMPLOYEE SELECTION SYSTEMS

The major focus of this component of the program will be to discuss techniques designed to improve the participants' abilities to identify and select those individuals who are likely to make the most effective employees. Topics to be addressed in this session include: (a) the economic utility of effective employee selection systems, (b) how to identify the prospective employee who "matches" the job the best, and (c) how to improve the employee interview to make it a more effective selection tool.

A. BASIC OBJECTIVES OF EMPLOYEE SELECTION SYSTEMS

- Discussion of basic goals of effective selection systems
- Identification and discussion of potential predictors of job success
- Examination of the economic utility of making good selections

B. DESIGNING EMPLOYEE INTERVIEWS TO IMPROVE EMPLOYEE SELECTION

- Why interviews fail
- The importance of developing structured interview procedures
- How to improve interview processes
- Conducting effective interviews
- Summary, Questions, Discussion

II. THE ROLE OF TRAINING AND DEVELOPMENT IN IMPROVING ORGANIZATIONAL EFFECTIVENESS

This module will provide an overview of employee training and development. Particularly in the context of rapid technological change, increasing competition, and changing labor markets, effective training is of crucial importance to firm success. The session will include discussions of training fundamentals such as needs assessment, training design and evaluation, and will conclude with a focus on applying effective training techniques in Eastern European organizations. Participants will be exposed to a variety of learning materials including videotaped segments, experiential exercises, and case examples designed to enhance professional competence in employee training.

A. TRAINING AND ORGANIZATIONAL EFFECTIVENESS

- Why training is so important
- Why training is so difficult
- Common pitfalls in organizational training

B. CHARACTERISTICS OF EFFECTIVE TRAINING

- Determining training needs
- Principles of training design
- Maximizing training transfer
- Evaluating training effectiveness

C. APPLYING TRAINING TECHNIQUES

- A review of training tools available
- Motivating people to learn
- Creating a learning environment
- Review: Ten Training Commandments
- Summary, Questions, Discussion

III. LEADERSHIP/TEAM BUILDING COURSE

The focus of this part of the program will be to discuss the types of human resource concerns the participants currently face, and to identify some of the major issues that they think that they will encounter as they move to privatization.

For this particular portion of the module, we will develop a "portable" outdoor team building/challenge course. Basically, this portion of the module is designed to address several important issues:

A. AWARENESS

All of the challenge activities are designed to promote an increased awareness on the managers' part regarding: (a) their interpersonal and leadership skills, (b) how effectively they interact within a work-group, and (c) what it takes to develop "high performance" work teams.

B. GOAL-SETTING

Most of the exercises in the challenge course require the group to develop and become committed to a specific goal that they want to achieve. The goal-setting process that occurs on the course is not unlike the goal-setting that goes on in many organizations, and should help the managers understand the critical role played by goals in producing organizational effectiveness.

C. GROUP PROBLEM-SOLVING

On the challenge course, groups of managers are given a problem or "initiative" that is difficult, if not impossible, for one individual to solve by him/herself. As a result, the group must "pool" their efforts in order to arrive at a solution. The group effort required is similar in many respects to the kinds of activities that occur in many organizations, such as the group effort required to coordinate a management team. Thus, the group problem-solving aspect of the course should help the participating managers to achieve a better understanding of how to work together with others to solve organizational problems.

D. IMPROVED COMMUNICATION

Virtually all of the challenge course activities require the managers to communicate effectively within their groups in order to be effective. These are the same skills that managers need to successfully to manage others.

E. DEVELOPING HIGH PERFORMANCE WORK GROUPS

Much has been written recently on the importance and potential impact of employee empowerment, participation, team building, and "self-directed" or "self-managed" work teams on enhancing organizational effectiveness. Indeed, it has been noted by several leading management writers that the importance of "cross-functional" teams comprised of people with different skills, abilities, and perspectives, will become even more critical to managerial and organizational success in the year 2000 and beyond, because organizations will be required to interact with ever more complex technologies and changes in the environment, and because many of these environmental changes will demand more interdependencies among organizational work units. In addition, team building and self-managed work teams have also been identified as key components of the much talked about Japanese management concepts of "Kaizen" (continuous productivity improvements) and "Wa" (developing team spirit and harmony).

However, despite many of the ringing endorsements of employee empowerment and team building, several problems remain for those leaders who want to incorporate such concepts into the organization. Among the most critical of these problems is identifying strategies that might be successfully used to develop such work teams, and to use these teams effectively. Thus, the final goal of the challenge course activities is to get participants to explore the "transferability" of concepts like "self-managed" work teams and discuss methods for improving work group effectiveness.

IV. CRITICAL ISSUES IN MANAGING THE CZECHOSLOVAKIAN WORK FORCE 2000

The major focus of this component of the program will be devoted to a discussion of how the "profile" of the Czechoslovakian work force will change over the next decade (in terms of attitudes, demographics, and technological skills and abilities), and how these changes will impact on the recruitment practices that will be necessary to gain a competitive advantage.

STRUCTURED INTERVIEWING: AVOIDING SELECTION PROBLEMS*

Elliott Pursell, Michael Campion, and Sarah Gaylord

Companies can no longer afford the luxury of making poor personnel selection decisions. Organizational goals are clearly affected every time a personnel selection decision is made. These selection decisions include the hiring, transferring, promoting, and terminating of employees. Maximizing the effectiveness of these decisions directly affects training time, turnover, absenteeism, safety, and satisfaction—in addition to job performance. Organizations have historically used tests and other selection procedures to assist in making these important personnel decisions.

LEGAL DEVELOPMENTS INFLUENCING TESTING—A RETURN TO THE TRADITIONAL INTERVIEW

There have been three major legal developments that have severely influenced the use of testing in industry. First, Title VII of the Civil Rights Act of 1964, as amended in 1972, prohibited employment discrimination based on race, color, religion, sex, or national origin. This does not prohibit the use of professionally developed ability tests, but the tests must not be designed, intended, or used to discriminate against protected groups. This legislation laid the groundwork for submitting testing to closer legal scrutiny.

The second legal development was the impact of court cases that resulted from Title VII. Particularly noteworthy were *Griggs v. Duke Power Co.*[1] and *Albermarle Paper Co. v. Moody*.[2] The net consequence of cases like these is that tests and other selection criteria are prohibited if they have an adverse impact on protected minorities and are not directly job-related.

The third legal development significantly affecting testing was the Uniform Guidelines on Employee Selection Procedures.[3] These guidelines define stringent procedural and documentation requirements for the design and implementation of selection systems. In essence, these guidelines operationally define job-relatedness and validation.

*Elliott D. Pursell, Michael Campion, and Sarah A. Gaylord, "Structured Interviewing: Avoiding Selection Problems," *Personnel Journal*, November 1980, pp. 907–912. Reprinted with the permission of *Personnel Journal*, Costa Mesa, Calif. All rights reserved.

[1]*Griggs v. Duke Power Co.* (1971), 401 U.S. 424.

[2]*Albemarle Paper Co. v. Moody* (1975), 422 U.S. 407.

[3]Equal Employment Opportunity Commission, Civil Service Commission, Department of Labor and Department of Justice, "Adoption by Four Agencies of Uniform Guidelines on Employee Selection Procedures," *Federal Register* 43 (1978), pp. 38290–315.

Due to the increased difficulty of developing and maintaining tests and other structured and validated selection procedures, many personnel specialists are returning to the traditional (subjective) interview as their only selection device. They apparently feel that testing has too high a legal risk and that test validation requirements are too extensive. What they fail to realize is that traditional informal interviews are also considered as tests. Thus, they are subject to the same validation requirements and probably carry a greater legal risk due to their subjective nature.

PROBLEMS WITH TRADITIONAL INTERVIEWING

The traditional interview has a host of additional problems aside from its being susceptible to the same legal scrutiny as any other test. Early reviews on the reliability and validity of the traditional selection interview were not encouraging.[4] The reliability of the interviewers was very low, and evidence of validity was either scarce or nonexistent.

Research on the selection interview has attributed a large part of this poor performance to rating or evaluation errors in the judgment of interviewees' responses. The various types of errors identified and studied include halo, first impression, contrast effect, similarity, leniency or severity, central tendency, and stereotypes.

As noted earlier, the traditional interview may be accompanied by a high degree of legal risk due to its subjectivity and susceptibility to bias. In a recent analysis of unfair discrimination in the employment interview, it was concluded that "the interview is highly vulnerable to legal attack and one can expect more future litigation in this area."[5]

Some of the disadvantages of the traditional, informal selection interview are that:

- It is highly susceptible to distortion and bias.
- It is highly susceptible to legal attack.
- It is usually indefensible if legally contested.
- It may have apparent validity but no real validity.
- It is rarely totally job-related and may incorporate personal items that infringe on privacy.
- It is the most flexible selection technique—thereby being highly inconsistent.

[4]The most noted of these research reviews include R. Wagner, "The Employment Interview: A Critical Summary," *Personnel Psychology* 2 (1949), pp. 17–46, E. C. Webster, *Decision Making in the Employment Interview* (Montreal: Eagle, 1964), E. C. Mayfield, "The Selection Interview: A Reevaluation of Published Research," *Personnel Psychology* 17 (1964), pp. 239–60, and L. Ulrich and D. Trumbo, "The Selection Interview," *Psychological Bulletin* 63 (1965), pp. 100–16.

[5]R. D. Arvey, "Unfair Discrimination in the Employment Interview: Legal and Psychological Aspects," *Psychological Bulletin* 86 (1979), p. 736.

- There is a tendency for the interviewer to look for qualities that he or she prefers and then to justify the hiring decision based on these qualities.
- Often, the interviewer does not hear about the selection mistakes.
- There is an unsubstantiated confidence in the traditional interview.

THE STRUCTURED INTERVIEW—AN ALTERNATIVE

Given that the employment interview is here to stay, that it probably has little operational utility in its present form, and that it is likely to be the subject of much future legal focus, improvement of the interview is a high-priority personnel issue. Both early[6] and more recent research on the interview have recommended the used of a "structured" interview format, since it increases reliability and accuracy by reducing the subjectivity and inconsistency inherent in the informal interview. A structured interview may be defined as a "series of job-related questions with predetermined answers that are consistently applied across all interviews for a particular job."[7]

The structured interviewing process has the following characteristics:

- It is based exclusively on job duties and requirements that are critical to job performance.
- It has four different types of questions: situational questions, job-knowledge questions, job sample/simulation questions and worker-requirements questions.
- It is actually a selection test and may include three sections: oral, written, and physical. Each job requirement is measured in one or more of these three sections depending on the most appropriate assessment mode.
- It has sample answers to each question determined in advance. Interviewee responses are rated on a five-point scale defined explicitly in advance.
- It is consistently applied to each applicant. For example, the same committee members are used, one member asks all the questions each time, and the same scoring method is used. All procedures are consistently followed to ensure that each applicant has exactly the same chance as every other applicant.

[6]See note 4.

[7]Representative articles include O. R. Wright, "Summary of Research on the Selection Interview since 1964," *Personnel Psychology* 22 (1969), pp. 391–413; D.P. Schwab, and H. G. Heneman, "Relationship between Interview Structure and Interrater Reliability in an Employment Situation," *Journal of Applied Psychology* 53 (1969), pp. 214–17. R. E. Carlson, P. W. Thayer, E. C. Mayfield, and D. A. Peterson, "Research on the Selection Interview," *Personnel Journal* 50 (1971), pp. 268–75, and N. Schmitt, "Social and Situational Determinants of Interview Decisions: Implications for the Employment Interview," *Personnel Psychology* 29 (1976), pp. 79–101

- It is documented for future reference and in case of legal challenge. Components of the process that should be documented include the completeness of the job analysis, the job relatedness of the questions, the fairness and consistency of the application, and other important components of the process.

JOB ANALYSIS

The objective of the job analysis is to generate a description of the job in terms of job duties, required knowledge, skills, abilities, and other worker characteristics (KSAOs). Job analysis is not only essential to test development, but the legal guidelines[8] surrounding employee selection procedures require some form of a job analysis as a necessary component of all types of validation. Further, there is evidence that a selection system developed on the basis of job analysis is more valid and less biased against minorities than a selection procedure developed without the benefit of job analysis.[9]

The actual techniques used to collect job information, such as questionnaires, interviews, or observations, depend on the specific job and selection situation. However, the following points should be noted about any job analysis. First, do not randomly recruit job-analysis participants. Select them on the basis of their extensive knowledge of the job. Inclusion of both supervisors and incumbents is often useful. Second, produce specific job-duty and job-requirement information. Job duties and requirements that are too general (for example, assists the machine operator or requires knowledge of data processing) are of little use. Third, the purpose of the job analysis is to get a picture of the job as it exists at the present time, not how the job could be changed or improved. Fourth, identify all the job requirements that are needed to perform all the specific job duties. This latter step is necessary since once the job duties are evaluated on relevance to the job, there must be a means of identifying which KSAOs are required to perform each of the job duties.

EVALUATING THE JOB DUTY INFORMATION

The Uniform Guidelines on Employee Selection Procedures require that KSAOs assessed in a selection procedure be necessary prerequisites to performance of *critical* work.[10] In order to determine the importance of the work, the job duties could be evaluated by using a job duty information form. Essentially, each job duty is rated on its importance to job success and in terms of the amount of time required to perform it compared to other tasks. These two

[8]EEOC, et al., op. cit., pp. 38303–38306.

[9]G. A. Kesselman, and F. E. Lopez, "The Impact of Job Analysis on Employment Test Validation for Minority and Nonminority Accounting Personnel," *Personnel Psychology* 32, (1979), pp. 91–108.

[10]EEOC et al., Adoption by Four Agencies, p. 38302.

ratings constitute an evaluation of importance. Several supervisors and incumbents should provide these ratings in order to obtain assessments from different perspectives.

When combining the multiple evaluations, a summary rating is developed by calculating an average-importance rating and average-time-spent rating for each job duty. This summary importance rating would be displayed on the job duty chart. The job duty chart is divided into four sections:

- The number of the job duties that are important and that consume a large amount of time.
- The number of the job duties that are important but do not consume a large amount of time.
- The number of the job duties that are lower in importance but do consume a large amount of time.
- The number of the job duties that are lower in importance and do not consume a large amount of time.

Since these sections are ranked from the most critical to the least critical, they provide assistance in the development of the interview questions.

DEVELOPMENT OF INTERVIEW QUESTIONS

The employees who helped to develop and evaluate the job duties and requirements are used in the development of interview questions. Interview questions are based on the job requirements that correspond to the important job duties. The important job duties are identified on the job-duty chart.

A structured interview typically contains the following four types of questions:

- *Situational questions.* These are questions that pose a hypothetical job situation to the applicant. The applicant must respond with what he or she would do in the situation. The critical incident job analysis technique[11] readily lends itself to the development of this type of question. Recent empirical evidence has validated interviews based exclusively on this type of question (for both supervisory and entry-level production jobs).[12] Situational questions are usually oral.
- *Job knowledge questions.* These questions assess job knowledge that is both essential to job performance and must be known prior to entering the job. These questions often deal with the technical aspects of the job or basic knowledge that is essential to learn the job. Questions of this nature are often posed in a written form as well as orally.

[11] J. C. Flanagan, "The Critical Incident Technique," *Psychological Bulletin* 51 (1954), pp. 327–58.

[12] G. P. Latham, L. M. Saari, E. D. Pursell, and M. A. Campion, "The Situational Interview," *Journal of Applied Psychology*, in press.

- *Job sample/simulation questions.* In general, the closer the questions approximate the content of the job, the more valid the selection instrument becomes. Sometimes it is possible to have the applicant actually perform a sample task from the job. When carefully developed and properly standardized, job samples[13] are apparently valid and lack racial bias.[14] Frequently, however, an actual job sample is not possible, and a simulation of critical aspects of the job, therefore, becomes an alternative. Job-simulation questions may range from mock-ups of job samples to questions using the terminology of the job. In fact, most questions should be developed in such a way as to represent, in content and language, example job tasks.
- *Worker requirements questions.* These usually take the form of "willingness" questions. Examples often include questions on the applicant's willingness to work in various environmental conditions, willingness to do repetitive physical work, and willingness to travel or relocate. These questions are frequently placed at the beginning of the oral section of the interview, since they act as good "warm-up" questions and help put the applicant at ease. Furthermore, since these questions often refer to the characteristics and duties of the job, they serve as a realistic job preview for the applicant and may aid self-selection.

There are seven essential criteria for the development and evaluation of interview questions:

- *Questions must be accurate, complete, and unambiguous.* Having to clarify questions during the interview reduces standardization and introduces bias.
- *Questions must be strictly and clearly job-related.* "Nice to know" questions are not permitted.
- *Questions must assess only KSAOs* that are needed at entry into the job. KSAOs which will be learned during training on the job should not be assessed. However, KSAOs that are necessary in order to be able to learn the job should be assessed.
- *Questions must assess only job requirements* directly related to job duties that are significant in terms of importance and the amount of time spent on them.
- *Questions should reflect as nearly as possible the content of the job.* For example, questions can often be stated in terms of example job tasks to increase job-relatedness. Further, job terminology can often be used when it is a prerequisite to learning the job.
- *Questions should be geared to the appropriate complexity level of the*

[13] J. E. Campion, "Work Sampling for Personnel Selection," *Journal of Applied Psychology* 56 (1972), pp. 40–44.

[14] G. A. Brugnoli, J. E. Campion, and J. A. Basen, "Racial Bias in the Use of Work Samples for Personnel Selection," *Journal of Applied Psychology* 64 (1979), pp. 119–23.

job. In other words, the questions should assess the job requirements at the same level as the job requirements needed on the job.

- *Questions must be carefully reviewed to eliminate any bias* that might tend to make them discriminatory.

Every question must be developed with these criteria in mind, and every question should be reviewed by independent job experts with respect to these criteria. Also, care should be taken to avoid any questions that can be answered with a simple yes or no.

DEVELOPMENT OF SAMPLE ANSWER TO INTERVIEW QUESTIONS

It is advisable to develop the sample answers to the interview questions as the questions themselves are developed. For each question, a five-point answer rating scale is constructed with specific samples developed for a "good" answer (a five rating), a "marginal" answer (a three rating), and a "poor" answer (a one rating). One way to develop the answers is through group brainstorming.

The answers to the questions must be scaled to the requirements of the job. For example, the very best possible answer may be far above what is required for the job and would distort the evaluation of the applicants. It should also be noted that occasionally questions will only have one correct answer (for example, a mathematics question). This is most likely to occur for written questions.

The sample answers should not be scaled so that additional job requirements, which have not previously been included, become a part of the answer. This is distorting the question in order for a "nice to have" requirement to be included. For example, business school (or equivalent training or experience) may be a necessary requirement for an executive-secretary position. Listing a college education as a number-five answer and listing a business school education as a number-three answer to an education question would be incorrect. This would clearly be altering the job requirements.

The development of the sample answers is an evaluative measurement of the question. If there is difficulty in determining what any of the answers should be for a particular question, then the question should be reviewed for possible refining, restructuring, or eliminating.

INTERVIEW COMMITTEE AND IMPLEMENTATION

An interview committee should consist of four to six members. The committee members are preferably the same employees who participated in the job analysis and the construction of the interview questions and answers. Members of the committee may be from levels of supervision above the job to be filled, or include the job incumbent, peers, and personnel representatives familiar with

the job. The same interview members should be used throughout the interviewing for a single job.

The interview committee is assembled well in advance of the first interview. During this time, it is trained in how to conduct the interview. First, the job duties, the requirements, the questions, and the interview answers are distributed to committee members and reviewed. Second, the group discusses the various types of rating errors that can bias ratings, and how to avoid them by concentrating on accuracy and adhering to the rating-scale anchor points. Finally, the interview committee members are divided according to the parts of the interview. The three parts of the interview are administered as follows.

Oral. This part of the interview is administered by a panel of three or more of the committee members in a quiet, comfortable room. The interview setting should be casual and nonstressful. One selected member of the panel introduces the applicant to the panel members. The same (selected) panel member asks the questions with all the applicants and conducts every interview to ensure consistency. There must be no cues, questioning, or confirmation after the applicant has responded. All panel members record and rate the applicant's answers on the rating scale sheet. This recording must be exactly as the applicant responded, but clear abbreviations are acceptable. This recording becomes a critical part of the documentation, and it must be possible to reconstruct any applicant's response to any question. Between interviews, the panel members must not discuss the questions, the answers, or the applicants.

Written. This portion is administered by one of the committee members in a quiet room away from distractions. Any necessary supplies must be secured in advance. Time limits are usually not applied to the written questions. "Extra help" is not allowed for applicants who do not understand the questions. Complete standardization must be maintained. The scoring of the written questions may be done by one of two methods: either the committee member administering this part may score each answer based on a predetermined answer key, or the questions may be given an independent rating by each committee member based on the predetermined answers that were developed prior to the interview.

Physical. This is administered by two or more of the committee members on the work site or in a nearly identical (job-simulation) setting. Each member records observations, applicant statements, performance levels, and rates all items independently using the predetermined answers.

After all the oral, written, and physical questions are administered, a total score is determined by averaging across all the raters to get one score for each item and then averaging all items to get a total score.

There are three additional topics that are related to the structured interviewing process. The first deals with cut scores. Cut scores are usually essential to making tesing decisions, and there are a number of procedures and considerations relevant to them. Secondly, performance appraisal is an essential second step in the personnel selection process. It not only provides a follow-up

and evaluation of the selection system, but it is also critical to employee motivation and counseling. A third topic in the selection system development process is documentation. If the selection system is ever challenged legally, a lack of documentation of the validity of the selection procedure will be interpreted as indicating that the selection procedure has no validity at all. Further, documentation of the development process provides a check on the adequacy of the validation efforts.

CUT SCORES

There are two possible ways of making selection decisions on the basis of structured interview (or any test) scores. One can either rank the candidates and choose those with the highest scores, or one can determine a cut score above which all candidates are qualified. There are at least four reasons why the latter is the preferred method. First, ranking candidates usually leads to the greatest degree of adverse impact.[15] Conversely, using a cut score above which all candidates are qualified allows a place for affirmative-action goals to enter the selection decision. Second, the Uniform Guidelines on Employee Selection Procedures[16] and the courts[17] have suggested that ranking candidates is an inappropriate selection strategy for content-validated devices. Third, for union line-of-progression promotions, many union contracts stipulate that the "most senior qualified" be accepted. The determination of "qualified" on a selection instrument ultimately translates into a cut score. Finally, a cut score requires management to stipulate, in advance, their definition of minimum qualifications for the job in question. This makes the selection process fairer and less susceptible to bias.

Unfortunately, there is no single best way of setting a cut score. In a recent review of the cut-score literature, Buck discussed 10 different methods for setting cut scores for criterion-referenced tests and described them as a mere "sampling of a variety of models and procedures."[18] Setting a cut score always involves a value judgment. The critical features behind setting a cut score are that it be objective, based on a solid rationale, and preferably set in advance of testing.

[15] W. C. Burns, "Affirmative Action in the Private Sector," in *Affirmative Action in Testing and Selection: Legal and Psychological Perspective*, D. J. Schwartz, Chair. Symposium presented at the meeting of the American Psychological Association, Toronto, 1978.

[16] EEOC et al., "Adoption by Four Agencies," p. 38306.

[17] *Louisville Black Police Officer's Organization v. City of Louisville*. U.S. District Court (Ky) No. C 74 1061(A), September 18, 1979.

[18] I. S. Buck, "Guide to the Setting of Appropriate Cutting Scores for Written Tests: A Summary of Concerns and Procedures," Technical Memorandum 77-4, United States Civil Service Commission (Washington, D.C.: U.S. Government Printing Office, 1977), p. 20.

CUT SCORES MUST TAKE INTO ACCOUNT POTENTIAL ADVERSE IMPACT

After determining a cut score, its appropriateness may be verified by testing the applicants, arranging their scores from highest to lowest, and examining the distribution. It is important to keep the applicants' names separate from their scores at this point in the process to prevent any bias.

Two final points should be made concerning cut scores. First, they should be established in light of both a reasonable, expected level of resulting job performance and the potential adverse impact that may result for females and minorities. Second, it is usually advisable to set cut scores at a minimum acceptable level to allow for the influence of other important selection factors such as seniority, other qualifications, or affirmative action goals.

PERFORMANCE APPRAISAL

Performance appraisal is a natural follow-up to any selection decision. It provides an evaluation of the accuracy of the selection procedures; it develops information that is useful for employee counseling; and it generates documentation for corrective action when selection mistakes are made. Furthermore, accurate performance data may allow for an estimate of the predictive validity of the selection procedure by statistically relating job-performance scores to structured-interview scores.

A detailed discussion of performance appraisal techniques is too large a topic to be addressed here. However, it should be noted that the job analysis information collected to develop the structured interview is an ideal resource base for developing a performance appraisal instrument. Further, if ratings are to be used to collect performance information, some form of rater training is advisable. It has been demonstrated that training can significantly reduce errors.[19]

DOCUMENTATION

Documentation is another essential component in the development and implementation of any selection system. This includes the maintenance of written records of the steps involved in the job analysis and the development of the structured interview and the performance appraisal, as well as records of interview scores, job performance, and any unusual occurrences or exceptions.

In terms of a guide to the format and extent of the documentation required,

[19] G. P. Latham, K. N. Wexley, and I. D. Purcell, "Training Managers to Minimize Rating Errors in the Observation of Behavior," *Journal of Applied Psychology* 60 (1975), pp. 550–55.

the Uniform Guidelines on Employee Selection Procedures[20] are very explicit concerning the documentation necessary to demonstrate validity. In conclusion, documentation is essential and the potential test user is well-advised to maintain documentation of validity during the developmental process rather than trying to reconstruct it at a later point in time.

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[20] EEOC et al., "Adoption by Four Agencies," pp. 38303–307

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Training for Organizational Excellence

An essay by the staff of Zenger-Miller, Inc.

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Training For Organizational Excellence

EXCELLENCE IN PERSPECTIVE

Overwhelmingly, the research on excellent companies shows that they are the result of excellent management. It is not technology, geography, labor pools, government intervention, or any other external factor that makes the significant, long-term difference. It is the performance of management. It is the individual managers alone in their offices, in one-on-one interactions, and in their roles as group and team leaders, defining and transmitting the values, vision, and standards of the organization.[1,2,3]

It is also clear that sustained good management does not just happen. It is the product of planning, development, and training. Though it is hard to be conclusive, Tom Peters and Bob Waterman noted that there were enough signs of "training intensity" to suggest that training is highly related to organizational excellence.[4] We totally concur with their observations and wish to go on record as saying that formal and informal training processes are among the best tools available to management to begin immediately achieving more excellent organizational performance.

In this essay, we describe how the best training functions (see Note A) operate, and what is responsible for their substantial contribution to their organizations. We approach the subject from the vantage point of our work with hundreds of training functions in the private and public sectors, representing all major industries and services (see Note B). Our perspective in this essay is simply that excellent training functions operate differently than their non-excellent counterparts. They don't differ in resources as much as in behavior and management practices. Therefore, if a training function wants to make a more significant contribution to its organization, it helps to pattern its functioning after the excellent ones.

While most of our examples will be from the private sector, and we will often refer to companies or corporations, everything said here is meant to include the public sector. The same principles apply, and we see some of the best training functions in city, county, state, and federal government. They often have the luxury of taking a longer range view than their counterparts in the private sector.

Our hope is that these observations will be valuable to company Presidents and Vice Presidents, Directors of Human Resource Development, Training Managers, and those conducting training programs. We welcome your feedback regarding our conclusions, and invite you to contact anyone within the Zenger-Miller organization to discuss your reactions, your questions, and your ideas. The authors of this essay have lamented that they wish they had known these things at the beginning of their careers, rather than learning them the hard way, later in life!

HOW THE BEST ONES DO IT

We see ten distinctive practices in the excellent training functions.

1. A Clear Vision of the Goal and Mission of Training

The excellent training functions have a clear and compelling vision of the individual and organizational results that their efforts are intended to achieve. They have a guiding picture of the behavior changes that need to occur on the job. There is less hoping to provide participants themselves with "awareness" and "insights" and more concern with developing action plans that they will implement back on the job. Their clarity of vision gives the best training functions the ability and a willingness to demonstrate the right way of doing things.

Underlying their clear vision is a deep and unswerving conviction that training really makes a difference in the daily performance of the organization, because it can alter and build the culture more directly and economically than any other management tool. Effective training organizations see their role as helping to define, and convey the positive values and culture of the organization. They see training as a prime vehicle through which executives can transmit their philosophy and values.

The most effective training functions are absolutely clear about the distinction between traditional education and the role of industrial training.[5] Their vision includes training participants in practical skills that can be used immediately for today's job, or they see their task as preparing people with the skills for tomorrow's job. In either case, their major emphasis is not on education; it is on demonstrable skills development. They teach theory and information only where those are relevant to the skill demands of the job.

Part of the vision of excellent training is a clear definition of the target population(s). Some less effective training functions seem to exist to "fix" a small cluster of individuals in the organization. But, the excellent training functions see their target as the influencing of large numbers, at all levels. They see training as analogous to good food and exercise, of vital benefit to everyone.

Some examples are:

- A large corporation brought all managers to a central facility for training to re-emphasize the corporate values that top management wanted to permeate through the organization. The role of managers and the skills needed to inculcate those values throughout the organization were taught and practiced.
- A company carefully defined the skill competencies that people needed in each job. Training was developed within the training function and also was purchased from outside training firms to provide these skills. This required a major redesign of many training programs that were more geared to teach theories and information, or which had previously not focused on specific competencies.

• A training manager successfully avoids falling for the latest fads in training by always evaluating new training ideas against the training function's vision.

• A director of training remarked, "My people are really tired of hearing theory that they can't apply. They want to know 'how to' about that whole parade of daily challenges that come into their office. That's what training is all about." She made "how to" the central focus of every program.

2. Tightly Linked to the Organization's Objectives

The effective training functions keep their focus riveted on their organization's goals.[6] They are constantly aware of the mission, objectives, and the genuine needs of the organization. They stay aware of these in a variety of ways, sometimes informal and sometimes highly structured and formal. But, they always channel training toward the important targets of the organization. They never forget who is paying the bill. (Not many years ago some leading social scientists in management and organization development defined the role of these functions as one of power redistribution. Such advocacy of training and development as a guerrilla warfare activity did much to alienate the function from management.)

Today, we see the best training functions aligning themselves with management to the greatest degree possible. Today's organization is being forced to attain higher productivity, both in the office as well as in the factory. The training function can help achieve that. Pressures for improved quality and for higher levels of customer service are common, as companies attempt to gain competitive advantages against others in world-wide markets. Training can help there, too.

The best training functions contribute to organizational excellence by helping the organization achieve both its immediate and longer-range goals. They develop a master plan of training that interlocks with the organization's master plan and tactical objectives. They are systems-oriented. They see the big picture.

They also see their role as serving the entire organization, not just some friendly middle managers or easy-to-reach supervisors. They recognize that the only true organizational change comes from a combined effect of "top-down" and "bottom-up" activities. They do not ignore the top executives, nor do they ignore an engineer who needs training to improve effectiveness in working with colleagues.

To understand their client's needs, the effective training functions burrow into the technical aspects of the business. They work hard to learn the operations, because that is the only way to fully understand the training needs that exist. They are not intimidated by technical terminology and realize that a certain degree of detailed knowledge of the business is necessary in order to function effectively in the organization.

Some examples are:

- Finding out about the goals of the business. They know what is planned for the business through in-depth interviews with executives, plus paying close attention to other sources such as executive speeches, company presentations to stock market analysts, public reports, and financial statements. This helps them to know what is important to management, and how the training plan must coordinate with the organization's plans.
- Getting out of the training office, and spending time with the line managers, supervisors, and individual contributors.
- Discovering the organizational issues that keep top executives awake at night, and applying training to help them with appropriate problems.
- Going to the critics of training, and finding out what needs they have. Effective training groups don't shy away from honest criticism or constructive feedback.
- Frequently following up on the results of training, to learn what is being applied.
- Involving many people at all levels in an effective, practical, needs analysis process.

3. Line Management Commitment and Involvement

While all organizations talk of management involvement and support, we suspect that many training programs really receive "permission" rather than true support. Trainers are given permission to spend money and take peoples' time, but real ownership of training by line management is often lacking.

The top training functions, by contrast, have generated an enthusiastic involvement of line managers. Line managers participate all the way, from defining training objectives to actually delivering some or all of the training.

True support for training can be measured in a number of ways. It certainly goes far beyond some statement made in the President's letter in the annual report or in some executive speech to all of the employees assembled in the cafeteria.

The most obvious test of line management support, commitment, and involvement is simply whether or not the senior executives are aware of the objectives and content of their organization's training programs. A senior training officer of a giant insurance company remarked, "The executives in my company do not have the foggiest idea about what we teach or why we teach it. I think some of them might be shocked."

Real support can begin with high-level management task forces that set policy, analyze needs, and recommend the allocation of resources. It begins when executives faithfully attend the kickoffs and graduations of all training programs. It comes when a manager insists on knowing whether or not participants are regularly attending the training sessions,

and clearing the way for them to attend if work pressures are getting in the way. True involvement comes when managers talk with their employees currently in training programs to find out what is being applied and how the managers can help.

Solid involvement and support is evidenced when management attends special sessions that expose them to the content and the skills of the programs being given to their participants. A high level of support comes when upper managers apply the skills being taught in training in their own management practice. For a select few, a final level of support comes when managers personally conduct training sessions.

Fundamentally, many training groups fail to receive total support because they never really ask for it in specific, precise terms. They ask for "support" and are told that the training function has management's "support." The problem is that "support" is never defined, and while upper management truly believes they are giving it, the training functions perceive they are receiving precious little.

In contrast, excellent training functions are precise with management about the support they expect and need; and therefore, they receive far more than their counterparts who are vague and/or who have low expectations.

It all boils down to the fact that the top training functions are outstanding internal marketers of training. Some professionals are put off by the notion of marketing. But, just as today's physicians and hospitals have learned that their survival depends on marketing, so must training professionals get comfortable with that fact. Fortunately, good marketing is never hucksterism. Instead, effective marketing means finding out what the client genuinely wants and needs, ensuring that your products and services meet those needs and wants, and then communicating effectively in an involving, participatory way how your services and products do just that.

Some examples of organizations achieving management ownership and involvement are:

- One corporation established an extremely high level training advisory committee. It included the executive vice president as the chairperson, and included many senior operating officers. This committee had its staff work done by the corporate training staff. It met regularly to review training needs, to set policy, to recommend the allocation of resources, and to give the strongest possible endorsement for training by the senior executives.
- Frequent correspondence is sent to line managers about what is happening to their employees who are in training sessions. Managers know exactly the content of training given to their people.
- Line managers select those to be trained, and letters inviting people to be participants are signed by their line manager.

• Line managers are consulted about what changes they hope to see in their employee's performance.

• Line managers conduct supervisory training sessions.

• Senior managers kick-off all management training programs and pass out certificates of completion at the end.

• Within a world-renowned R&D organization, a senior line manager is appointed to sponsor a group of middle management participants during a large training program. The senior manager, nicknamed "the angel," regularly attends sessions, meets with the participants regularly throughout the program, and is available to talk with participants about any of their questions regarding company policy or management practice.

• The president of a large company personally conducts part of the supervisory training program for newly appointed first-level managers. When asked how he could spare the time for this activity, he replies, "Where else could I spend time that has so much leverage for building the corporate culture?"

4. Excellent Management Practice Within The Training Function

The training function in excellent companies practices what it teaches. The budgets are well-prepared and submitted on time. The department's telephone is answered efficiently and courteously. Members are willing to take risks and experiment. The group is quality-minded and responsive. They accept responsibility and make themselves accountable for a return on the investment the organization makes in training. They are participative in their own management practices, but hold themselves accountable for high levels of performance. They are technically competent and knowledgeable about training content, methods, and management.

When line managers are rotated into the training function as a short-term, developmental experience, the effective ones waste no time in learning about training. Some people have argued that a manager is a manager of anything, and that people can move from one function to another and need not understand the technical dimensions of what they manage. That does not square with the research about what makes effective managers. They generally have, or quickly acquire a good grasp of the technology they are managing.

For training professionals the challenge seems to be one of remembering that they are business people who have the assignment of managing the training function, not training people who happen to be in a business organization.

One company president observed that it is easier to find capable line managers than it is to find high-quality staff managers. Once a good staff manager is found, he or she should be carefully nurtured. We observe this to be especially true of training executives.

It is common to joke about the dressmaker's daughter not having a dress, or the shoemaker's children having no shoes. It is hard for the rest of the organization to respect the training department unless it practices the management skills it teaches to others. When it is a good model, the training department becomes a catalyst in the organization, making major changes easier for all departments.

Some positive examples we see are:

- A well-written, meaningful annual training plan that can be shown to, and discussed with, any interested party.
- A sophisticated view about the expenditure of money. Some training functions believe they will be praised and rewarded for saving money. Instead, the excellent training functions spend money wisely, but realize that the greatest rewards come from producing good results for the organization; and that entails spending money intelligently.
- A training annual report that shows the number of people trained, the subjects covered, the cost per hour or day compared to budget, comparisons to previous years, demonstrable on-the-job behavioral results achieved, critical mass accomplished (see Point 8 in this essay) and key organizational goals accomplished.
- A positive, enthusiastic climate in the department when you walk in and meet people.
- A reputation for congruence. A line manager says, "The great thing about our training department is that you can do what they do, as well as what they say. That department is a terrific example of what every department in this company should be."
- A reputation for straightforwardness. One executive described a training manager, saying "She knows just when, where, and who to push. She is absolutely fearless in talking to upper executives, but they know she cares about making the organization more successful and no one ever gets offended."

5. Emphasis on Practicality and Transfer

During the last decade, we have witnessed a profound shift away from esoteric, theoretical, complex training.[7] We see a strong movement toward more practical, concrete, "What do I do on Monday morning?" training. Training has failed unless it moves from the classroom back to the job. This "transfer of training" must be the central preoccupation of the training department. Across all types and sizes of organizations, the whole Personnel function is being required to move toward providing more "line" results.[8] The excellent training functions are already well on their way.

This begins by focusing on the content. Rather than lecturing employees on the importance of being customer-oriented, the best training functions emphasize transferable things like, "Answer the phone after the second ring," "Call customers by name," or "Return phone calls within 8 hours." Instead of lectures to supervisors on Maslow's needs hierarchy, we see the best training functions having supervisors rehearse the behavioral skills of listening, asking questions, clarifying expectations, and coaching. Those are the skills that unleash motivation starting "next Monday morning."

Instead of theoretical lessons for middle managers on "control," we see the excellent training functions teaching managers how to develop sound, specific courses of action with employees, how to get employee commitment to those action plans, and how to get agreement with employees on specific follow-up ways to determine if things are working better.

Top training functions move toward practical teaching methods to teach their practical content. They use techniques that involve clear demonstrations and practice, always keeping in balance the cognitive element of training. They emphasize people leaving with practical new skills. While experiential techniques have successfully involved participants and provided new insights, there has been little evidence that tinker-toy towers and going-to-the-moon exercises have resulted in demonstrable changes in back-home behavior. Momentary insights and self-awareness have not been consistently transferred from the classroom to the job.

The basic test of practicality and transfer is whether the training has caused peoples' on-the-job behavior to change for the better, either permanently or for a reasonably long time. If that has not happened, then we have educated or entertained, but not trained.

The best training functions also know that training is not always the answer. They know when NOT to train, and they resist conducting training programs when the need is for individuals to take action on what they already know rather than to learn new things.

Some examples are:

- An organization replaced its highly theoretical management training programs with a new system that emphasized specific skills relevant to their practiced day-to-day needs, such as goal-setting with individuals, performance coaching, team development, and group problem-solving skills.
- A large aerospace company wished to improve the presentation skills of executives. Therefore, a major portion of the executives' development program was devoted to their actually delivering short presentations, and having those presentations videotaped for critique by themselves and by their group. A second presentation was given later in the session to measure the improvement of each participant.

• A chief executive contacted the training department to "fix" the customer service representatives. They were not being sufficiently courteous and responsive to customers. A training specialist proposed that the problem may not be a training problem, but appeared to be a personal motivation problem due to the lack of rewards for courtesy. The trainer proposed that each week the department identify the most courteous customer service representative and have that person's picture posted in a prominent place in the building. Within a month, courtesy noticeably improved.

• A problem-solving course had been used for many years and had been well received by managers, But, research showed that few people actually used the skills back on the job. A newer program was introduced that demonstrated people actually going through each of the steps of the problem-solving process. By allowing time to practice these skills in the classroom, the company began to see an immediate increase in the use of the skills outside of the classroom.

• Follow-up sessions were scheduled after the completion of a training course to ensure that the participants maintained their skills, and they were given frequent reminders of how to use them. A variety of techniques, including post-training assignments, buddy systems, and trainer follow-up discussions were added to make the follow-up process more complete.

6. Use of Multiple Sources to Assist Them

We observe that the most effective training functions do not attempt to design or conduct all of the training themselves. Instead, they see themselves as orchestrators, who marshal all available resources to provide the needed training activity. They are not jealous of line managers conducting training, of outside consultants with specialized skills, or of outside organizations which design instructional systems. They see themselves as the group responsible for making the most effective training occur, but not the ones who personally must do it all. They are willing to use available resources and to delegate.

Training functions typically suffer from lack of resources to meet enormous demands and needs. Their only hope to satisfy those needs is to be the catalyst that makes training happen rather than the sole creator and deliverer of training. The pressures of time, costs, and quality often lead to the use of outside resources, rather than only internal resources.

This willingness to use appropriate resources inside and outside their own organization allows excellent training departments to magnify their efforts and multiply their effectiveness.

Some examples of this are:

- An organization decided to have all of its supervisory training conducted by line managers, with the training department largely coordinating the activity. The initial evaluation results showed that the line managers were obtaining as good, if not better, results than training professionals. The trainers were freed to deliver other programs requiring highly specialized training skills for which they were uniquely qualified.
- An organization needed some specialized technical personnel. They arranged with a local junior college to develop a course to train these people. The company collaborated in the design of the course material and virtually guaranteed employment to the graduates of the program.
- Ten years ago, less than 30% of large organizations used packaged or "off-the-shelf" programs as part of their management training. Today, more than 80% use such programs for all or part of their management training efforts.
- An organization's supervisory training program carefully blended materials supplied by an outside vendor, which successfully taught skills, as well as important, internally-developed company information about procedures and policies. A program containing only one or the other in that particular organization would not have adequately prepared a new supervisor for survival or success.

A Sense of Urgency

The effective training functions bring a high energy and intensity to the task. They are less reflective, introspective, and philosophical, but focus on clearly defining the specific problem to be solved. Then, they are skillfully action-oriented and have a desire to get on with things—quickly. They model the initiative they seek from all managers.

While effective executives have widely varying styles, they seem to possess at least one trait in common. They have a sense of urgency, impatience, and restlessness with the status quo. If the training function is to receive management support, it cannot be too far out of harmony with the pace or rhythm of the organization.

The best training functions are staffed with some of the organizations' brightest people, who do not set unreasonable targets or schedules. Yet, they balance their planfulness with a commitment to waste no time getting programs underway and the goals accomplished. The training functions in excellent companies see their primary function as the delivery of high quality training that makes a difference in how people behave on the job. They never lose sight of the fact that they are being paid for results—soon.

The top training functions emphasize the immediate application of the skills being taught. They have instinctively learned what research has confirmed. If people do not quickly apply what they learn in training, it is highly unlikely that they will ever apply it.

• Some university professors teaching quantitative methods to business people learned that only a small percentage actually applied what they were taught. But, in probing further, they discovered that those who did use it had one common characteristic. The successful participants began to use the skills immediately—within a two-week period. If more time than two weeks elapsed, it became clear that there was little likelihood that change would ever occur.

The sense of urgency within effective training functions, therefore, is in two different areas. They respond quickly to training requests from responsible people in the organization; and they emphasize immediate application or implementation of the training content.

Some examples of taking action are:

• Confronting a Sales VP who was concerned about the level of sales, but who believed nothing could be done in the short run to remedy the situation. The training executive challenged the VP to try Training's team-building and team-training processes as a near-term way of improving sales performance. The VP accepted the challenge and, within six months, sales in the two districts involved increased 116% and 208%. Sales in districts receiving no training showed little or no change.

• Telling the Chairman of the Board that the core values of the organization were not reaching the lower levels of management. As a result, the organization committed $100,000 for the development of a program that would transfer the core values and desired management practices throughout the entire international organization. The program was being conducted company-wide within a year.

• Responding to the substantiated concerns of workers who were highly disgruntled with the behavior of their supervisors. Training began within one month, and the requesting employees quickly noted significant changes in how their supervisors related to them.

• Delivering an effective program to train the management team of an important, newly acquired chemical production plant within two weeks of receiving the request.

• Responding to management in 5 weeks with a program to train supervisors with the skills necessary to run effective quality circle meetings.

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8. Achieve Critical Mass

There is an enormous difference between having 500 different courses with an average of 10 people attending each one, and having 10 courses with a cumulative average of 500 people attending each one. While the total number of training days is the same, the impact on the organization could not be more different. If those highly-attended 10 courses are fundamental, building block courses, which develop job skills and inculcate core strategic values, the impact of the whole system can be profound. But without such "critical mass" generated by wide attendance, the organizational impact of even the finest training program is soon dissipated.

Peter Drucker said that he thinks an organization must train at least 30% of any group in order to impact the entire group in any meaningful way. We concur with that observation. If a company wishes to develop its sales force, it can not train only 2% of them, and expect them to go back and transform all the rest.

On the other hand, we know of organizations that have enormous catalogs of courses rivaling those of universities. These are taught by internal staff or external consultants, and many employees attend several courses each year. (Companies, as well as universities, have professional students.) When these courses are offered cafeteria-style, there often is little critical mass created. Overall organization impact is small, since commonality of participant experience is relatively uncommon. Training becomes a remedial process, a reward, or a break in the routine for pockets of employees. But, training's impact on the overall organization is small.

This is very different from those who see training as a powerful means to change or to strengthen the culture of the organization, as well as a prime tool to transmit the values and vision of its top executives, while building demonstrable skills which directly improve job performance. While one perspective speaks mostly in terms of numbers of training days conducted, the excellent functions also speak in terms of percentages of target populations trained and critical mass created.

Examples of this are:

- A large organization developed a detailed implementation plan for a major training effort, including the precise means of rolling out the effort to the entire population over the next 18 months. The strategy and tactics were in place from the beginning, and they successfully trained 94% of the target group.
- Many Fortune 500 organizations are currently reassessing their training offerings, identifying key skill competencies at each organization level, and offering a limited core of training programs aimed to directly develop these competencies and whose content is linked logically between organization levels.
- An extremely successful computer company makes training mandatory. All managers, after being appointed to a new level in the organization, must attend a training program designed to give them skills needed to function well in that job. It also is mandatory that they attend the training within a certain number of weeks of being appointed to their new positions. Making this program obligatory impacts the entire population, and substantially influences the organization.
- Other companies obtain high levels of participation in training by generating intensive line management support and involvement and/or by promoting specific programs directly and extensively to the prospective participants.

9. Consistency

Most of us seek to buy products that we believe to be of consistently high quality. If we buy a product one day and it is good, only to buy the same product a week later and find it to be bad, we look for another brand. Sometimes we don't even rely on trying it ourselves; if the word-of-mouth says it's poor quality, we might not even consider it. In today's world, successful services are similar to successful products. If a service, like training, is to be widely marketed throughout an organization, it must be of consistently high quality.

The same training course often receives rave reviews and trenchant criticism when different people conduct it. Many training programs being delivered in organizations are extremely instructor dependent, and therefore are subject to such wide quality variations.

How can training be made more consistent? How can uniformly high quality be achieved? One approach used by top training functions is to place great emphasis on the training and monitoring of instructors. Another way is to emphasize carefully constructed learning designs. A third method is to place greater emphasis on the creation of high quality training materials. The combination of these three elements—well trained instructors, tightly constructed learning designs, and well-crafted training materials—has been demonstrated to produce highly consistent results.

The drive for consistency does not stop there, however. We see excellent training functions being intensely concerned with the harmony *between* their different training programs and with the overall consistency of the messages being delivered by training to the various levels of the organization.

Some examples are:

- One corporation had trainers monitor each other, with some attending classes taught by others; feedback was available from the visiting trainers. This develops consistency by building skills through peer feedback and by having instructors totally aware of what their colleagues are doing.
- Another organization decided to achieve more uniformity by emphasizing materials and methodology. They used computer-aided instruction and a new "box game" to teach the organization's fringe benefit program to all new employees. These made the learning more interesting and more consistent.

• The chairman of a large corporation's training committee remarked, "I heard disquieting comments from the participants in one of our pilot programs. They said that they had gotten a lot out of the course, and that it was primarily because of the excellent instructor." This executive was pleased about the trainer but worried that if the program was highly instructor dependent, then the program was in jeopardy of never being successfully "rolled out" across the organization. There just weren't sufficient charismatic instructors available who also had the technical competence to teach programs such as this on a broad scale. The organization elected to invest additional money in high quality materials that would reduce the program's virtually total dependence on the instructors and achieve higher consistency of delivery.

10. Evaluation of Results

The big questions facing every training function include, "Is this program really working?" "Does it do what we purport it will do?" "Is change really happening?" "Is this effort and expense really paying off?" "What evidence do we have that we are making a real difference to the organization?"

While we do not see all of the excellent training functions spending time and money on quantitative evaluation of training results, we consistently see a deep commitment to finding practical ways to determine if training is really paying off? They evaluate training using the measures that are most relevant to the management of their unique organization. Meaningful evaluation is always in the eye of the beholder. Therefore, some organizations collect examples of successes of training. Others rely on line managers to observe the results "on-the-job," and some have personnel on their staff who want controlled studies in order to more scientifically evaluate the behavior change of participants as a consequence of training. Still others are looking for bottom-line, hard measures of training's contributions.

One of the most dramatic changes in the last decade has been the increase in the number of organizations seeking practical ways to measure the results of training. We believe that to be a long awaited, healthy change.

Some examples are:

• One follow-up minded organization asks every supervisor and manager who attends training to write up a detailed description of the specific skills they have learned and how they will use them. Follow-up is conducted one month, three months, and six months after training to document results. Results are converted whenever possible into return on investment (ROI) percentages and/or dollar savings or gains.

• Another company requests that managers carefully observe their employees for two months following the employees' training. Then, managers are asked to document the behavior changes they see.

- More than 80 companies and government agencies have elected to rigorously evaluate their results produced from using a packaged supervisory training program. This includes giving questionnaires to the participants and bosses of those attending training. Questionnaires are administered before training and after training to measure the change over time. Experimental groups and control groups are used to help assure that observed changes are the result of training.
- One company, in conjunction with a major university, did a research project in which they developed extensive "bottom-line" rates, such as quality measures, absenteeism, tardiness, turnover, and labor grievances filed. They were able to see positive changes in most of these measures due to their training efforts.
- One company elected to use only one "hard" measure which was critically important to them—turnover. They trained 100 employees in the skills of being more effective individual contributors, using half-day sessions once a week for twelve weeks. The target population traditionally had turnover in excess of 50% per year. This group, after six months, had an annualized turnover rate of 18%.

CONCLUSION

As a final observation, we note that not all the high-performing training functions do all of these things we have described. Conversely, most training functions do some of these things. But, we observe that the excellent training functions consistently do more of them, do them more intensely, and persist over a longer period of time than their counterparts.

Most executives have come to realize that changing an organization is not a matter of issuing a command and having the organization suddenly take a new course. Instead, the executive is forced to nudge and push, model and reinforce, and gradually redirect the enterprise. Training can be a precision instrument to help create such organizational change, because of its objectives, content, and methods are controllable, ongoing, and pervasive.

Few tools exist to quickly and directly impact the organization. One of the most powerful of these is training. It has enormous potential to influence both individuals and the institution as a whole.

Unfortunately, training fulfills its potential in only a small portion of all organizations. We have presented here the characteristics of those training functions where training efforts excel. We believe that they present a valuable model from which we all can learn.

REFERENCES AND NOTES

Note A:

When we use the term "training function," we include more than the people in the training department. We believe it encompasses:

- The department or group which plans and conducts employee, supervisory, management, and executive training and development.
- The Organization Development staff which works with teams and systems.
- The technical training staff and its activities.
- The participation and involvement of line managers in planning and conducting training and development activities.
- The corporate policies and norms regarding training, i.e., is training voluntary or mandatory; is taking time for training important or frivolous?
- The amount and kind of financial and psychological support provided to training by senior management.

Note B:

Zenger-Miller works with hundreds of organizations, large and small, in the public and private sectors, in a broad range of industries, including almost half of the Fortune 500. Our involvement has been as training and organization development consultants, and as suppliers of packaged training systems to these organizations. Working in close proximity with our clients, we are able to see the inner decision-making processes, and able to witness the involvement of training departments with their line managements. We frequently attend sessions with upper management to discuss training. We especially enjoy working with trainers and training managers who strive to contribute to their organizations, and seek to have their training function operate like the best.

The professional staff members of Zenger-Miller each considered the question of "What's different about excellent training functions?" The conclusions stated here represent a consensus of the Zenger-Miller staff about the best training functions, and what differentiates them from others.

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HOW THE BEST ONES DO IT

1. A Clear Vision of the Goal and Mission of Training

2. Tightly Linked to the Organization's Objectives

3. Line Management Commitment and Involvement

4. Excellent Management Practice Within the Training Function

5. Emphasis on Practicality and Transfer

6. Use of Multiple Sources to Assist Them

7. A Sense of Urgency

8. Achieve Critical Mass

9. Consistency

10. Evaluation of Results

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STRUCTURED INTERVIEWING: RAISING THE PSYCHOMETRIC PROPERTIES OF THE EMPLOYMENT INTERVIEW

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A highly structured employment interviewing technique is proposed, which includes the following steps: (1) develop questions based on a job analysis, (2) ask the same questions of each candidate, (3) anchor the rating scales for scoring answers with examples and illustrations, (4) have an interview panel record and rate answers, (5) consistently administer the process to all candidates, and (6) give special attention to job relatedness, fairness, and documentation in accordance with testing guidelines. Examination of psychometric properties for hiring entry-level production employees ($n = 149$) reveals high interrater reliability ($r = .88$) and predictive validity (uncorrected $r = .34$; corrected $r = .56$), as well as evidence for test fairness and utility. The levels of these properties are comparable to those of a comparison battery of typical employment tests, and correlations with the tests suggest that the interview has a strong cognitive aptitude component. Potential explanations for the effectiveness of this structured interviewing technique are discussed.

The reliability and validity of the employment interview has been questioned throughout the history of industrial psychology, starting early in the century (e.g., Hollingworth, 1922; Scott, 1915) and in every review since (Arvey & J. Campion, 1982; Carlson, Thayer, Mayfield, & Peterson, 1971; J. Hunter & R. Hunter, 1984; Mayfield, 1964; Reilly & Chao, 1982; Schmitt, 1976; Ulrich & Trumbo, 1965; Wagner, 1949; Webster, 1964; O. Wright, 1969). Structuring the interview has often been proposed as a means of improvement, but the operationalization of structure has varied widely across studies, with at least three different forms observed. First, many studies developed semistructured interviews in that the process

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was not completely specified but some form of assistance was provided in conducting the interview or evaluating responses. Yonge (1956) used an outline and rating scale. Barrett, Svetlik, and Prien (1967) had interviewers take notes during the interview and make ratings afterwards. Landy (1976) used dimensional rating scales and an interview panel. Mayfield, Brown, and Hamstra (1980) developed an interview guide and summary form with suggested questions. Zedeck, Tziner, and Middlestadt (1983) made evaluations on behaviorally anchored rating scales. Arvey, Miller, Gould, and Burch (1987) developed a job-analysis-based interview schedule. In addition, many other studies provided some form of structure for the interview, but the detail given was insufficient for understanding the nature or degree of the structure (e.g., Albrecht, Glaser, & Marks, 1964; Borman, 1982; Campbell, Prien, & Brailey, 1960; Freeman, Manson, Katzoff, & Pathman, 1942; Gardner & Williams, 1973; Ghiselli, 1966; Glaser, Schwarz, & Flanagan, 1958; Huse, 1962; Tubiana & Ben-Shakhar, 1982).

Second, some studies "patterned" the interview as suggested by McMurry (1947). With this approach, the interviewer did not have to ask the same questions of each candidate but, instead, selected from an array (or pattern) of questions. Maas (1965) improved the patterned interview by using behavioral expectation scales (Smith & Kendall, 1963). Janz (1982) and Orpen (1985) evaluated a further variant called the "patterned behavior description interview," which involved a critical incident job analysis (Flanagan, 1954), recorded responses, and rating scales. Finally, Schwab and Heneman (1969) and Heneman, Schwab, Huett, and Ford (1975) enhanced structure in a manner similar to patterning, in which interviewers could not deviate from a predetermined job-analysis-based interview format (i.e., application form).

Third, Latham, Saari, Pursell, and M. Campion (1980), Latham and Saari (1984), and recently, Weekley and Gier (1987) evaluated an approach called "situational" interviewing. This approach was more structured than previous efforts in that it used the same questions for each candidate, anchored rating scales, and an interview panel to record and evaluate responses. On the basis of the goal-setting assumption that intentions are related to behavior (Locke, 1968), candidates' responses as to what they would do in hypothetical job situations were hypothesized to be predictive of what they would actually do on the job. Situations were generated using critical incident job analyses (Flanagan, 1954).

Purpose of this Study

This study extends previous research in four ways. First, it presents a more highly structured interviewing technique than most other efforts. Previously this technique was only described in a nonresearch journal (Pursell, M. Campion, & Gaylord, 1980) and in unpublished sources (M. Campion & Pursell, 1981; Pursell & Gaylord, 1976). This technique begins with the same research theme as Latham et al. (1980), but it extends the methodology to other question types in addition to situational questions. Also included are job knowledge, worker requirements, and job sample and simulation questions. Second, more so than with other approaches to interviewing, greater explicit attention is afforded to the guidelines on test development from both the professional perspective (*Validation Principles*, Society of Industrial and Organizational Psychology, Inc., 1987) and the legal perspective (*Uniform Guidelines*; Equal Employment Opportunity Commission, Civil Service Commission, Department of Labor, & Department of Justice, 1978) in order to enhance the likelihood of validity and legal defensibility. Third, aside from presenting the usual psychometric quality indicators of interrater reliability and predictive validity, this study also presents evidence of test fairness and utility. Fourth, a battery of typical employment aptitude tests are examined to determine whether the psychometric properties of the interview can be raised to the level of these traditional selection devices and to explore the constructs measured by the interview.

Overview of the Structured Interviewing Technique

Both the *Uniform Guidelines* (p. 38296) and the *Validation Principles* (p. 1) consider interviews to require validation just as any other selection procedure. The aforementioned common belief in the lack of validity of the traditional unstructured interview, along with its inherent subjectivity and apparent susceptibility to bias, may make it particularly vulnerable to legal attack (Arvey, 1979). The proposed approach to interviewing attempts to reduce subjectivity and inconsistency by highly structuring the process with the following six steps.

Step 1: Develop questions based on a job analysis. Adequate job analysis for any selection procedure is not only encouraged by the *Uniform Guidelines* (pp. 38304-38306) and *Validation Principles* (pp. 5–6), but there is evidence of its importance both in court decisions (Kleiman & Faley, 1985) and in avoiding bias (Kesselman & Lopez, 1979). All questions must be clearly job related. Any method of job analysis can be used, as long as it includes a determination of knowledge, skills, abilities, and other requirements upon which to base interview questions. There should be a measure of importance of job tasks so that questions only assess prerequisites for performing critical work (*Uniform Guidelines*, p. 38302; *Validation Principles*, pp. 22-23). Additionally, questions should not generally be based on the requirements of higher-level jobs (*Uniform Guidelines*, p. 38298; *Validation Principles*, pp. 13-14) or on knowledge or skills the

employee will learn with brief training or experience on the job (*Uniform Guidelines*, p. 38298; *Validation Principles*, p. 22).

A variety of question types can be used, including situational questions as described above (Latham et al., 1980), questions on job knowledge that is related to performance, and job sample or simulation questions where possible. These latter questions can range from actually performing part of the job to mock-ups of job tasks, or to simply phrasing questions in terminology and examples from the job. It is important, however, that they assess requirements at the same complexity level as that needed on the job (*Uniform Guidelines*, pp. 38305-38306). Samples and simulations not only enhance content and face validity but, when properly developed, can exhibit criterion-related validity (J. Campion, 1972) and avoid bias (Brugnoli, J. Campion, & Basen, 1979; Schmidt, Greenthal, J. Hunter, Berner, & Seaton, 1977). Finally, other worker requirement questions also are included. They frequently involve questions on background (e.g., experience, education) or "willingness" questions (e.g., shift work, travel). They also serve as warm-up questions at the beginning of the interview, and as realistic job previews (Wanous, 1980).

Aside from the criteria already mentioned, questions should be reviewed to make certain they are accurate, complete, and unambiguous. Furthermore, they should be reviewed by independent job experts who are members of protected groups to check for any potential for bias or misinterpretation.

Step 2: Ask the same questions of each candidate. All candidates are asked the same questions. There is no prompting or follow-up questioning, although the questions can be repeated.

Step 3: Anchor the rating scales for scoring answers with examples and illustrations. A scoring system is developed for each question by generating examples or definitions for *good* (5), *marginal* (3), and *poor* (1) answers. One approach is to ask job experts for example answers they have actually heard that subsequently distinguished different levels of performers on the job (Latham et al., 1980). A simpler approach is to brainstorm potential answers with experts and personnel representatives familiar with the job and with interviewing comparable candidates. Often both approaches are used to generate potential answers. Either way, example answers must be scaled to the requirements of the job so that good answers do not far exceed the requirements, and poor answers are not so low that they do not help distinguish between candidates. Predetermined answer-rating scales enhance consistency across interviews and objectivity of judging candidate responses. Making the scoring system explicit is essential to justifying the content validity of assessment procedures (Sackett, 1987; *Validation Principles*, p. 24). In addition, developing example answers serves as an

evaluation of the questions; difficulty in generating answers suggests that restructuring or elimination of the questions may be warranted.

Step 4: Have an interview panel record and rate answers. Using an interview panel reduces the impact of idiosyncratic biases that single interviewers might introduce (*Validation Principles*, p. 12). If possible, the panel should consist of a subset of the job experts who helped analyze the job and develop the interview questions because they are most familiar with the job and the questions. Three members are typically used, including supervisors of the job to be filled and a personnel representative. It is advisable to use the same members for all interviews to enhance consistency. However, an excessively large number of interviews or other constraints (e.g., turnover) may make this infeasible. The panel assembles in advance to review job duties and requirements, questions and answers, the interview process, and ways to avoid rating errors that can bias evaluations (Latham, Wexley, & Purcell, 1975). Application forms are not reviewed prior to the interview to avoid influencing the evaluation process (cf. Dipboye, Fontenelle, & Garner, 1984; Tucker & Rowe, 1977). All members independently record and rate each candidate's answers during the actual interview.

Step 5: Consistently administer the process to all candidates. The same panel member should conduct all interviews and ask all questions. Panel members do not discuss questions, answers, or candidates between interviews in order to avoid potential bias from changing standards or comparisons among candidates. After all interviews are complete for a given job, any large discrepancies between ratings are discussed (Thornton & Byham, 1982; but cf. Sackett & Wilson, 1982). Memory decay for candidate answers is avoided by the extensive note taking of panel members. The ratings and items are averaged to ensure equal weighting because differential weighting schemes are generally not preferred (Einhorn & Hogarth, 1975; Wainer, 1976). Differences in importance between job requirements is addressed by the number of items assessing each requirement. Every attempt is made to conduct interviews in as nonstressful a manner as possible (e.g., introductions of panel members, comfortable interview setting, only one member asks all questions). Candidates are allowed to ask questions in a subsequent nonevaluation interview with a personnel representative.

Step 6: Give special attention to job relatedness, fairness, and documentation in accordance with testing guidelines. Consideration of the *Uniform Guidelines* and *Validation Principles* has been noted throughout the process. Components needing documentation include the job analysis and interview development procedure, candidate responses and scores, evidence for content or criterion-related validity, adverse impact analyses, and other aspects as appropriate.

Method

Setting and Sample

The structured interview was used for hiring entry-level labor-pool employees in a large pulp and paper mill located in the rural Southeast. The traditional unionized facility placed new employees in bottom-level jobs in the various union lines of progression throughout the mill. Interest was in selecting employees with the basic skills needed to perform any of these entry-level jobs.

Of the 243 applicants interviewed, 149 were hired. The hires were 37.6% minority and 20.1% female, which was representative of the community work force and likely future candidates (*Uniform Guidelines*, p. 38301; *Validation Principles*, p. 12). Age averaged 30.4 (SD = 7.9) and education averaged 12.2 (SD = 2.1) years. Adequate statistical power was ensured (*Validation Principles*, p. 8) by the fact that the 149 hires provided 90% power to detect an observed correlation of .24 (i.e., uncorrected for range restriction and criterion unreliability; $p < .05$, one-tailed test; Schmidt, J. Hunter, & Urry, 1976).

Structured Interview

Analyses of the labor pool revealed that a subset of 17 jobs were most frequently staffed by entry-level employees. Job analysis conferences were conducted with incumbents and supervisors for each job. Lists of duties and requirements were generated, and duties were evaluated in terms of importance and time spent. The jobs were highly similar in terms of 25 shared requirements (i.e., knowledge, skills, abilities, and other worker characteristics), which suggested support for a job family for selection purposes (Pearlman, 1980; *Uniform Guidelines*, p. 38304). Interview questions were developed to assess the requirements needed to perform the most important and time-consuming duties. Detailed content validity procedures and analyses were described in M. Campion and Pursell (1981).

The developmental procedures described above were followed, and a 20-item interview resulted. All the previously mentioned question types were included, with most questions representing a combination of the various types. Three examples provided below illustrate the range of questions.

a. Job knowledge question assessed mechanical comprehension: "When putting a piece of machinery back together after repairing it, why would you clean all the parts first?"
   (5) Particles of dust and dirt can cause wear on moving parts. Need to have parts clean to inspect for wear and damage.
   (3) Parts will go together easier. Equipment will run better.

   (1) So it will all be clean. I don't know.
b. Simulation question assessed low level reading ability: "Many of the jobs require the operation of a forklift. Please read this (90-word) forklift checkout procedure aloud."
   (5) Reads fluently pronouncing all words accurately.
   (3) Can read most words but hesitates.
   (1) Reads with great difficulty.
c. Worker characteristic or willingness question assessed fear of heights: "Some jobs require climbing ladders to a height of a five-story building and going out on a catwalk to work. Give us your feeling about performing a task such as this."
   (5) Heights do not bother me. I have done similar work at heights in the past (and gives examples).
   (3) I do not think I am afraid of heights. I know that this would have to be done as part of the job.
   (1) I am afraid of heights. I would do it if absolutely necessary.

A cutting score of 4.0 was set for the interview based on a modified Angoff (1971) procedure. Job experts judged the minimum acceptable performance level on each item, and the average across the items was used as the cutting score. This helped ensure that the interview assessed requirements at a similar complexity level to the job (*Uniform Guidelines*, pp. 38305-38306).

Because of the magnitude of this hiring program, many interview panel members were needed. But in all cases, the three panel members included two supervisors familiar with the different entry-level jobs and a personnel representative. Interviews lasted approximately 30 minutes.

Performance Criterion

Behavioral observation scales (Latham & Wexley, 1977, 1981) were developed because more objective, behavioral, and job-analysis-based performance appraisals may be more legally defensible (Kleiman & Faley, 1985; *Uniform Guidelines*, p. 38300). This procedure began with a critical incident job analysis (Flanagan, 1954), which was separate from the analysis used to develop the interview. Content coverage was ensured by collecting 6,150 critical incidents from 100 supervisors describing the performance of 393 employees. Incidents were condensed into 75 items and coupled with 5-point frequency scales to constitute the behavioral observation instrument. Reproducibility was demonstrated by having an independent analyst reclassify a 9% sample of the critical incidents into the 75 items. Approximately 96% accuracy was observed. Total scores were calculated as sums of the items. Internal consistency reliability (Cronbach,

1951) was .99, indicating substantial homogeneity. Interrater reliability between independent supervisory evaluations over a one-month time period on a sample of 30 employees was .76 ($p < .05$).

All supervisors using the instrument were given a half-day training program on minimizing rating errors (Latham et al., 1975). Appraisals were conducted after six months of employment. To avoid potential bias, in no case were the same supervisors involved in both the interviews and performance appraisals (Schoorman, 1988; *Uniform Guidelines*, p. 38300; *Validation Principles*, p. 14).

Employment Aptitude Tests

Before starting work, all candidates hired were examined on an experimental battery of four typical paper-and-pencil employment tests, which were chosen to assess cognitive aptitudes suggested by the job analysis.

1. Mathematical aptitude was measured with the Flanagan Industrial Test—Arithmetic (Form A). Its 60 items measured ability to perform simple addition, subtraction, multiplication, and division of whole numbers (Flanagan, 1975). A time limit of 15 minutes was allowed, and the score was the number correct. The manual reported an alternative forms reliability of .79.

2. Mechanical aptitude was measured with the mechanical knowledge test of the SRA Mechanical Aptitudes battery (Form AH). Its 45 items measured ability to recognize a variety of common tools (Richardson, Bellows, Henry, & Company, Inc., 1947). It was timed at 10 minutes and scored in terms of number correct. The manual only reported internal consistency reliability, which was inappropriate for speeded tests (Nunnally, 1978).

3. Following oral instructions was measured with the Personnel Tests for Industry—Oral Directions Test (Form S). Its 16 items measured ability to follow oral instructions on a 15-minute audio tape (Langmuir, 1974). The score was a weighted total of number correct (39 maximum). The manual reported a mean corrected split-half reliability of .80 and a mean retest reliability of .84.

4. Reading scales was measured by the 12-item Can You Read a Scale? test, which assessed ability to read standard scales or rules (Lawshe, 1943). It was timed at four minutes and scored as number correct. No manual was available.

Results

All measures appeared to have substantial range and variation (Table 1). Internal consistency reliability of the structured interview was .72,

TABLE 1

Means, Standard Deviations, and Correlations among the Measures

	n	*M*	*SD*	Correlations[a] 1	2	3	4	5	6[b]
1. Structured interview	149	4.21	.39		40	70	52	63	49/56
2. Mathematical aptitude	140	53.95	7.18	27		38	58	51	33/38
3. Mechanical aptitude	140	27.16	8.25	54	27		45	74	45/52
4. Following oral instructions	140	32.72	4.74	37	53	31		63	40/46
5. Reading scales	140	6.95	3.77	50	44	64	54		44/51
6. Performance appraisal	149	278.30	53.42	34	25	32	30	32	

[a]Decimals omitted. All significant at $p < .05$. Correlations below the diagonal are uncorrected, those above are corrected for range restriction. Corrections involving the interview are for direct restriction, while those not involving interview are for indirect restriction (Guilford, 1965, pp. 343 and 344, respectively).

[b]Correlations to left of slash (/) corrected for range restriction; those to right also corrected for criterion unreliability (Guilford, 1965, p. 487).

indicating some heterogeneity among the 20 items. Interrater reliability (intraclass correlation) among the three raters was quite high at .88. The reliability of the mean of the three raters was very high at .96 (Cronbach, Gleser, Nanda, & Rajaratnam, 1972). Interrater agreement was also examined (Tinsley & Weiss, 1975) because hiring decisions were made based on the absolute level of interview scores. Agreement among interviewers was within a criterion of .5 points on the total scores in 95% of the cases ($p < .05$; Lawlis & Lu, 1972).

The validity coefficient between the structured interview and performance appraisal was .34 ($p < .05$). Correcting for direct range restriction caused by selection based on the interview (restricted *SD* in the sample hired of .39 versus unrestricted *SD* in the total sample interviewed of .60) and criterion unreliability (interrater $r = .76$) yielded correlations of .49 and .39, respectively (Guilford, 1965, pp. 343 and 487). Correcting for both factors yielded a correlation of .56 (Schmidt et al., 1975).

Test fairness was evaluated using a moderated regression strategy, which assessed equality of intercepts and slopes (Bartlett, Bobko, Mosier, & Hannan, 1978). In the equation in which the interview is used to predict the performance appraisal, intercept differences were tested by adding race to the equation, and the slope differences were tested by also adding the race by interview interaction to the equation. A similar analysis was performed for sex. Results showed a significant intercept difference for race (incremental R squared = .11, $F = 20.30$, $df = 1,146$, $p < .05$), but a plot of the separate regression lines indicated that a common line slightly overpredicted (i.e., was not unfair) for minorities. No slope differences were

observed for race, and no intercept or slope differences were observed for sex ($p > .05$).

Gain in utility from using the structured interview over random selection (*Validation Principles*, pp. 17-18) was estimated using formulas and procedures from Schmidt, J. Hunter, McKenzie, and Muldrow (1979). Relevant data included interviewer time and administrative costs of $30 per applicant, selection ratio of .62, average standard score on the interview of those selected of .42, and validity coefficients of .34 uncorrected and .56 corrected. The standard deviation of job performance in dollar terms was estimated at $5,000 per year by supervisors using the Schmidt et al. direct estimate technique. This value was 33% of annual mean wages, which was slightly below the 40% estimate often discussed in utility research (Schmidt & J. Hunter, 1983; Schmidt, J. Hunter, Outerbridge, & Trattner, 1985). Using these figures, the one-year utility from the 149 hires was estimated at approximately $100,000 using the uncorrected validity and $168,000 using the corrected validity. Assuming a 10% annual interest rate and no separations (Boudreau & Berger, 1985), the estimated gain in 10 years would be over $1 million in net present value in the year 1980. Precise development costs were unknown, but they would be small compared with this gain in utility (e.g., $20,000 to $30,000 in salaries).

The four employment aptitude tests were also positively correlated with the performance appraisal (Table 1). Correcting for indirect range restriction caused by the interview substantially increased their size (Guilford, 1965, p. 344). Although the correlations were slightly smaller than the interview, none were significantly smaller ($p > .05$).

Test fairness analyses of the tests resulted in findings similar to the interview with regard to race. No slope differences occurred, but intercept differences were significant in all cases (incremental R squared = .07 to .11, F = 12.02 to 18.46, df = 1,137, $p < .05$). Again, plots of the separate regression lines indicated that a common line slightly overpredicted (i.e., was not unfair) for minorities. With regard to sex, the tests showed no slope differences, but intercept differences were significant for the mechanical aptitude and following oral directions tests (incremental R squared = .06 and .05, respectively, F = 9.86 and 8.28, df = 1,137, $p < .05$). Plots of regression lines indicated that the common line slightly overpredicted (i.e., was not unfair) for females.

Gain in utility from using the tests over random selection was analyzed assuming the same selection ratio, standard score for selectees, and standard deviation of job performance in dollars, but administrative costs of only $5 per applicant. The one-year gain in utility ranged from approximately $77,000 to $100,000 using the uncorrected validities and from $118,000 to $160,000 using the corrected validities. These values were slightly smaller than those with the interview. Therefore, even though the tests would have reduced development costs (i.e., job analysis still required, but no instrument development costs), the tests and interview would likely have comparable utility.

An examination of incremental value revealed that the tests explained additional variance in the performance appraisal beyond that explained by the interview (incremental R squared = .07, F = 11.17, df = 4,135, $p < .05$), but the interview did not explain additional variance in the appraisal beyond that explained by the tests combined (incremental R squared = .01, F = 2.30, df = 1,135, n.s.). Consequently, the interview would not have incremental utility beyond the tests, and there may even be a slight negative utility because of the development costs of the interview.

Correlations between the interview and tests were positive and moderate to large in size (Table 1), with a multiple correlation of .59 (F = 17.99, df = 4,135, $p < .05$). Correcting for range restriction on the interview substantially increased their size and resulted in a multiple correlation of .75. This suggested a strong cognitive aptitude component to the interview.

Discussion

This article presents a highly structured interviewing technique that includes the following steps: (1) develop questions based on a job analysis, (2) ask the same questions of each candidate, (3) anchor the rating scales for scoring answers with examples and illustrations, (4) have an interview panel record and rate answers, (5) consistently administer the process to all candidates, and (6) give special attention to job relatedness, fairness, and documentation in accordance with testing guidelines. In a field study, an interview developed using this technique demonstrates interrater reliability, predictive validity, test fairness for minorities and females, and cost/benefit utility.

Paper-and-pencil cognitive aptitude tests have historically been viewed as the best predictors of job performance (J. Hunter & R. Hunter, 1984; Reilly & Chao, 1982). Four typical employment tests are used to determine whether highly structuring the interview can raise its psychometric properties to the levels of these traditional selection instruments. The level of reliability of the interview seems comparable to those of the tests, to the extent that reliabilities for the tests are available in the manuals. The level of validity of the interview is slightly larger than the tests, but not significantly so. The corrected interview validity of .56 is also quite similar to the mean validity of .53 for cognitive aptitude predictors in general, and far larger than the mean validity of .14 for traditional interviews, for entry-level jobs as discovered in a large-scale meta-analytic study (J. Hunter & R. Hunter, 1984). Test fairness analyses yield similar results for both the interview and tests with regard to race, with a slight overprediction for

minorities. While the interview shows no difference for sex, however, the tests slightly overpredict females. Intercept differences are a frequent form of differential prediction (Bartlett et al., 1978), but slight overprediction is not unfair to minorities and females. Finally, the utilities of the interview and the tests are quite comparable, even with the larger development costs of the interview. Using expectancy tables (Taylor & Russell, 1939) and assuming base rates and selection ratios of 50%, the traditional interview ($r = .14$) yields 55% successful employees, and this structured interview ($r = .56$) yields nearly 70% successful employees.

The effectiveness of this approach to structured interviewing may be explained in terms of both method and content. Both clearly represent characteristics that are central to professional and legal testing guidelines. The methods used to structure the interview give it an advantage in terms of standardization (*Uniform Guidelines*, p. 38298; *Validation Principles*, pp. 7 and 14). Having multiple interviewers consistently evaluate candidates on the same questions using the same criteria may reduce idiosyncratic biases of interviewers, as well as their susceptibility to order or contrast effects among the candidates. Other methodological features may also enhance validity. All the question types have some prior empirical validity evidence: situational (e.g., Latham et al., 1980), knowledge (e.g., J. Hunter, 1986), sample/simulation (e.g., J. Campion, 1972), and worker requirements (e.g., Wanous, 1980). Content validity may be enhanced by attempting to assess requirements at the same complexity level as needed on the job (*Uniform Guidelines*, p. 38305–38306) and by explicitly predetermining the scoring system (Sackett, 1987). Training interviewers to avoid common response errors (Latham et al., 1975) may also help improve validity (Pursell, Dossett, & Latham, 1980).

The content of the structured interview may make it effective in that it is based on job analysis (*Uniform Guidelines*, pp. 38304–38306; *Validation Principles*, pp. 5–6). Examination of a battery of typical employment aptitude tests bears on the content of the interview by providing an assessment of the constructs it taps. The large correlations suggest that the interview has a substantial job knowledge or cognitive ability component. Thus, the content of the structured interview may be more like that of an orally administered cognitive ability test. The predictability of job performance through measures of job knowledge or general cognitive ability is well documented (Gottfredson, 1986; J. Hunter, 1986).

The superiority of structured interviews over unstructured interviews and the potential method versus content explanations for that superiority have also been noted by recent unpublished meta-analytic studies (McDaniel et al., 1987; Wiesner & Cronshaw, 1987; P. Wright, Lichtenfels, & Pursell, 1987). It is important to attend to the constructs underlying

interviews in meta-analyses. Lumping cognitive-oriented with motivation-oriented interviews would be misleading.

Further analyses of the employment aptitude tests reveal that they also predict the performance criterion, and they add incrementally to the prediction beyond the interview but not the reverse. This raises the question of why spend the additional effort and expense of using a structured interview, when commercially available and inexpensive paper-and-pencil ability tests predict just as well. At least three explanations can be offered. First, many (if not most) managers believe in the value of interviews, and they will frequently conduct interviews and allow them to influence hiring decisions, even when other more valid selection devices are available. In fact, there is no evidence that the continual warnings of researchers over the last 40 years about the limitations of the traditional interview have decreased its prevalence. Structured interviewing allows managers to take part in the selection process in an interviewer role, yet it gives the usually haphazard interview psychometric qualities comparable to a cognitive ability test.

Second, the development procedures of the structured interview may make it easier to content validate than commercially available written tests, which makes the technique especially appealing to small employers (Robinson, 1981). Third, there is some evidence that content-oriented job sample tests are perceived by both minority and majority applicants as fairer and more appropriate than written tests (Schmidt et al., 1977). Thus, the structured interviewing approach in this study may have greater face validity to applicants than commercially available aptitude tests.

At least four directions for future research can be suggested. First, future research could explore the usefulness of this structured interviewing technique for other jobs and settings. Both this study and research on the highly similar situational interview (Latham et al., 1980; Latham & Saari, 1984) have focused on jobs in the forest products industry. With the exception of small samples of foremen and hourly workers in Latham et al. and a small sample of sales people in the recent study by Weekley and Gier (1987), most data have come from entry-level hiring. Although the authors are aware of many other applications with different and higher-level jobs, further reliability and validity evidence is needed. It may be that higher-level jobs (e.g., management) would require some probing and follow-up questioning. Perhaps coding schemes for recording probes can be borrowed from survey interviewing research (e.g., Survey Research Center's Interviewing Manual, 1976). In addition, employment interviewing research might benefit by consideration of other findings in survey interviewing research, such as the importance of interviewer–interviewee interactions and nonverbal behavior (e.g., Beed & Stimson, 1985; Kahn & Cannell, 1957; Warwick & Lininger, 1975).

Second, future research could examine the relative effectiveness of the various types of questions. In the present study, most questions represented combinations of situational questions, job knowledge questions, sample/simulation questions, and worker requirement questions. But research on purer forms, such as the Latham et al. (1980) study on situational questions, could be undertaken.

Third, a potential advantage of the proposed form of structured interviewing is management acceptance. This is not the case if selection programs are too cumbersome (Mayfield et al., 1980). The experience of the authors is that managers appreciate the obvious fairness of asking the exact same questions of all candidates and having predetermined answer-rating scales. Participation in the interview panel is an interesting and involving experience for the managers. They feel the process makes an otherwise subjective and "soft" interview seem more objective and worthwhile. Although this structured interview may be somewhat constraining relative to traditional interviews (e.g., no follow-up questions, one member asking all questions), there is an unpublished study suggesting managers and attorneys view structured interviews as more practical and defensible (Latham & Finnegan, 1987). That study also found that employee hires did not differ in preferences for types of interviews, but student applicants believed the unstructured interview was advantageous in winning a lawsuit. This latter finding, along with the enhanced fairness perceptions of content-oriented measures observed by Schmidt et al. (1977), suggests candidate reactions to structured interviewing may also be favorable for the company. Future research could further explore both managerial and candidate reactions to structured interviews.

Fourth, future research could examine underlying mechanisms. Is this highly structured interviewing technique effective because of its degree of standardization and other methodological advantages; is it effective because it is job related and taps general cognitive ability which is predictive of performance on most jobs; or are both mechanisms operating?

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Hiring for the organization, not the job

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Executive Overview

This article examines a new approach to selection in which employees are hired to fit the characteristics of an organization, not just the requirements of a particular job. Diverse firms—high and low-tech, U.S. and Japanese-owned—are using the approach to build cultures that rely heavily on self-motivated, committed people for corporate success. New, often expensive, hiring practices are changing the traditional selection model. An organizational analysis supplements a job analysis, and personality attributes are screened in addition to skills, knowledge, and abilities. We outline the basic steps of the new selection model and present a case description of a manufacturing company that used the model in hiring employees to work in its high-involvement organization. The new model works to its fullest advantage in organizations that allow employees enough freedom to use their unique attributes to influence job performance.

Article

Conventional selection practices are geared toward hiring employees whose knowledge, skills, and abilities (KSAs) provide the greatest fit with clearly defined requirements of specific jobs. Traditional selection techniques rarely consider characteristics of the organization in which the jobs reside. Traditional techniques also ignore characteristics of the person that are irrelevant to immediate job requirements. In common management parlance, the organization hires new "hands" or new "heads"—that is, parts of people.

A new model of selection is emerging, however, that is geared toward hiring a "whole" person who will fit well into the specific organization's culture. It reflects a fundamental reorientation of the selection process toward hiring "people," not just KSAs, for "organizations," not just jobs. This leads to hiring practices that seem peculiar, and needlessly extravagant, from a traditional human resource standpoint. Consider the hiring practices of three different organizations.

• AFG Industries builds two new float glass plants. The plants use practices such as work teams, extensive training, and skill-based pay that create a high level of employee involvement. The hiring process for factory workers includes screening formal resumes (not job applications), personality testing, pre-employment training that simulates some plant jobs, interviews with panels of managers and/or employees, and a medical exam.

• Sun Microsystems is the fastest-growing U.S. company in the past five years, with annual growth averaging more than 100 percent.[1] Filling open jobs is critical to Sun's effectiveness, phenomenal growth, and profitability. Yet, the hiring process is extremely time-consuming and labor-intensive. Potential hires at all levels are brought into the organization from four to seven times for interviews with up to twenty interviewers. The process is full of ambiguity, lacks formal rules, and demands that all employees engage in problem solving to get themselves hired.

• Toyota (USA) screens 50,000 applications for 3,000 factory jobs in the initial staffing of its plant in Georgetown, Kentucky.[2] Each employee hired invests at least eighteen hours in a selection process that includes a general knowledge exam, a test of attitudes toward work, an interpersonal skills assessment center, a manufacturing exercise designed to provide a realistic job preview of assembly work, an extensive personal interview, and a physical exam.

A basic assumption of bureaucratic organizations is that individuals cannot be trusted to manage their own behavior. Thus, management designs the organization to control employee behavior as tightly as possible, through the managerial hierarchy, impersonal rules and procedures, close supervision, and extensive socialization and training.

As we shall see, these organizations adopt unusual hiring practices to find employees who fit the organization and to encourage those who do not fit to seek employment elsewhere. Although potential hires with skills that meet the demands of specific jobs are not ignored, these companies maintain that the person-job fit needs to be supported and enriched by person-organization fit. These companies are willing to invest substantial resources in rigorously assessing this fit. Why and how organizations approach hiring in this way are explored in this article.

How Important are Hiring Decisions, Really? The Person-Situation Controversy Revisited

Is individual behavior, such as job performance, a function of the person (attributes of an employee), the situation (characteristics of the work setting), or the interaction of the person and situation? This question is age-old. Proponents of employee selection as a key to human resource effectiveness answer that individual behavior is largely a function of the person. Selection techniques attempt to capitalize on enduring differences between individuals by choosing those individuals who are best suited to the job. Conversely, advocates of socialization and training practices that attempt to mold employees after they are hired assume that the situation is the principal determinant of individual behavior.[3] The majority of researchers and managers subscribe to some form of the interactionist perspective. They assume that both the person and the situation matter, and that the combination of the two determines individual performance and other behaviors.

We argue that both researchers and managers have overemphasized the situation and have paid only lip service to the individual in recent years. In research on organizational behavior, people variables (for example, needs) usually are treated as secondary to situational variables (for example, job designs) and researchers generally are skeptical about the ability of personality variables to predict job performance.[4] Managerial interest in individual testing appears to have dropped sharply after several 1970 court decisions held that unvalidated and discriminatory selection procedures were illegal.

An overemphasis on the importance of the situation fits the managerial ideology dominant among American corporations. A basic assumption of bureaucratic organizations is that individuals cannot be trusted to manage their own behavior. Thus, management designs the organization to control employee behavior as tightly as possible, through the managerial hierarchy, impersonal rules and procedures, close supervision, and extensive socialization and training. This curtails the expression of individual differences in behavior. As a result, the organization is designed to be what researchers have called a "strong situation," one in which the intensity of the situation suppresses variation in behavior that is attributable to the person.[5] Thus, managers create a self-fulfilling prophesy. The belief that the situation is the most important predictor of behavior leads to the organizational design which suppresses individual differences. This self-fulfilling pattern is further reinforced by basing hiring decisions on a single, brief interview, which has proved to be unreliable and of poor validity.[6] It is not surprising, then, that managers often conclude that the selection system is not a key success factor.

Yet, some organizations are designed as "weak situations," allowing a range of employee responses to work requirements.[7] These organizations have less control

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over individuals and the effects of person variables are greater. In such organizations, it is more important than in traditional organizations to do a good job of hiring the right people.

Consider the three organizations we described at the beginning of this article. They are more different than similar. They include high-tech and moderately low-tech, manufacturing-driven and engineering-driven, white collar and blue collar, and U.S.-owned and Japanese-owned firms. Yet these organizations share a set of management assumptions about organizational success. Each is attempting to build a distinctive culture that is intentionally "fragile," meaning that management relies heavily on self-motivated, committed people for system effectiveness.[8] While all three organizations have a management hierarchy, organizational policies, and other tools of external control, all rely to an unusual degree on employees to make the system work effectively. And they use sophisticated selection systems to hire the whole person whose skills and personality fit the type of organization, not just a job.

The New Selection Model: Hiring for Person-Organization Fit

Exhibit 1 presents the new selection model for hiring for person-organization fit. As we shall see, it differs from the traditional selection model in several important ways.[9] Our model represents a synthesis of the steps taken by the organizations mentioned in our opening case examples as well as by other progressive firms. Although any one firm may not fully implement every step, all of these steps together offer the best guarantee of person-organization fit.

We will describe the steps in the model and then present a case description of a firm where hiring practices are a close match to the ideal. First, however, we clarify the meaning of "person-organization fit."

Person-Organization Fit

The model in Exhibit 1 places the selection process in the context of a rich interaction between the person and the organization, both of which are more broadly defined and assessed than in the traditional selection model.

1. ASSESS THE OVERALL WORK ENVIRONMENT
   - Job Analysis
   - Organizational Analysis

↓

2. INFER THE TYPE OF PERSON REQUIRED
   - Technical Knowledge, Skills and Abilities
   - Social skills
   - Personal Needs, Values, and Interests
   - Personality Traits

↓

3. DESIGN "RITES OF PASSAGE" FOR ORGANIZATION ENTRY THAT ALLOW BOTH THE ORGANIZATION AND THE APPLICANT TO ASSESS THEIR FIT
   - Tests of Cognitive, Motor, and Interpersonal Abilities
   - Interviews by Potential Co-Workers and Others
   - Personality Tests
   - Realistic Job Previews, Including Work Samples

↓

4. REINFORCE PERSON-ORGANIZATION FIT AT WORK
   - Reinforce Skills and Knowledge Through Task Design and Training
   - Reinforce Personal Orientation Through Organization Design

Exhibit 1. A Hiring Process for Person-Organization Fit

Person-organization fit requires that two types of fit be achieved in the hiring process: (1) between the KSAs of the individual and the task demands or critical requirements for the job; and (2) between the overall personality of the individual (e.g. needs, interests, and values) and the climate or culture of the organization.

The traditional selection model focuses almost exclusively on the first type of fit (KSAs—job) while tending to ignore, or assessing far less rigorously, the second type (personality—climate/culture).[10] The narrow focus of the traditional selection model reflects several factors. One is that managers tend to think of individual job performance as the key outcome of the hiring process and they believe that job performance is a function of the fit between KSAs and task demands. Additionally, the traditional selection model is more concerned with finding new employees than with retaining them. There is less attention to whether the whole person finds the organization's culture satisfying enough to stay. Organizations have also been constrained by the unavailability of proven selection technologies for producing the fit between personality and climate/culture. This situation can be improved, we believe, by following the steps for hiring that are described next.

Step One: Assess The Work Environment
The job analysis of the traditional model of selection is also conducted in the new model. It remains instrumental in achieving the fit between individual KSAs and task demands. Alternative job analysis techniques include the position analysis questionnaire, task inventories, and critical incident techniques.[11]

While many job analyses include evaluations of the work context, the person-organization fit model explicitly recognizes that successful employees have knowledge, skills, abilities, and other personal characteristics that match both the content and the context of the job.

The purpose of an organizational analysis is to define and assess the work environment in terms of the characteristics of the organization, rather than just in terms of the characteristics of a specific job. It identifies the behaviors and responsibilities that lead to organizational effectiveness, and implies the personal characteristics most likely to be associated with such behaviors and responsibilities. Organizational analysis also is important because job analysis data may quickly become outdated as rapidly changing products and technologies reshape employees' jobs. The organization's overall philosophy and values are likely to be more stable and consequently, the more important long-term focus for fit.

Techniques for organizational analysis are not well-established, largely because there is little research that systematically associates the characteristics of organizations and individual behavior patterns. Managers need to identify the important dimensions of the organization and their implications for the kinds of employees who would best fit those situations. Although organizational analysis techniques are not nearly as well-developed as job analysis techniques, a variety of methods are available. For example, the training field offers guidelines for conducting an organizational analysis as one component of a training needs analysis. Organization characteristics assessed include short- and long-term goals, staffing needs, properties of the environment (for example, stability), and employee perceptions of organization climate. Organizational culture audits have emerged in the last decade that offer both qualitative and quantitative methods for describing an organization's norms and values.[12] Quite promising is a sophisticated Q-sort methodology that assesses the content, integrity, and crystallization of organizational values and matches them with an assessment of individual values.[13] Finally, there is a long-standing approach to diagnosing the characteristics of an organization's four subsystems (individuals, tasks, organizational arrangements, informal organization) that can yield organizational analysis data.[14]

Organization analysis does not replace job analysis. Rather it ensures that important components of the work *context* as well as its content are identified and evaluated for their importance to job success. While many job analyses include

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evaluations of the work context, the person–organization fit model explicitly recognizes that successful employees have knowledge, skills, abilities, and other personal characteristics that match both the *content* and the *context* of the job.

Step Two: Infer the Type of Person Required
In step two, managers deal with applicants in terms of who they are, not just wh they can do. It is still necessary to infer from the job analysis the KSAs that employees need to be technically competent. However, step two also requires inferring, from the organizational analysis, the needs, values and interests—that is, the personality—an employee must possess to be an effective member of the organization. For example, if the organizational analysis reveals that teamwork is a key norm or value in the setting, then selection tools must be used to find peopl who are team players. Furthermore, social and interpersonal skills will be necessary, in addition to the cognitive and motor abilities that are the dominant skills-focus of the traditional selection model.

First, the use of multiple screening methods, raters, and criteria has long been recommended by researchers as the best approach to hiring.[19] Yet most organizations still hire employees using a single interview with a single interviewer.

The move by some organizations toward hiring the total person coincides with a renewed interest by researchers in personality as a predictor of job attitudes and behaviors. These researchers believe that studies in which personality measures fail to predict job performance often have been plagued by problems such as focusing on personality aspects of questionable relevance to the job, poor researc methods, and so on.[15] These problems have given personality a bad name and fostered the impression that the situation matters much more than the person in influencing job attitudes and performance. In contrast, more recent research has yielded such interesting findings that individual personality attributes can predict job satisfaction later—more than fifty years and even for different jobs. The research implies that job satisfaction may be associated with a stable, enduring personality attribute rather than a function of the situation.[16] This indicates that th types of people hired is very important.

Organizations also must pay attention to technical skills needed by the organization. Often applicants with the most appropriate personalities and social skills are not those with the right technical skills. If the organization faces the need to upgrade technical skills quickly, it may be forced to make tradeoffs. Organizations in this situation often place greater weight on personality and social skills, on the grounds that it is easier to train technical skills than change personalities or develop social skills. This can lead to increased short-term training costs and temporary overstaffing. However, if the work technology is complex and training times are long, management may be forced to hire some employees who better fit the organization's technical requirements than its cultural requirements. Douglas Bray, noted pioneer of the AT&T Management Progress Study, considers this tradeoff and suggests that selection decisions about needs, values, and interests may be more critical than those for skills.[17] For example, a desire to learn new jobs is an attribute that cannot be taught easily to employees, as job skills can. You either hire people who have this attribute, or do without.

Step Three: Design "Rites of Passage" That Allow the Organization and the Individual to Assess Fit
The battery of screens used in the new approach to hiring may seem designed to discourage individuals from taking the job.[18] Yet, these screens have several purposes. First, the use of multiple screening methods, raters, and criteria has long been recommended by researchers as the best approach to hiring.[19] Yet most organizations still hire employees using a single interview with a single interviewer. More sophisticated techniques, if used, typically are reserved for executives and sometimes sales people. Second, multiple screenings not only allow the organization to select employees, but also provides applicants with sufficient realistic information about the work environment so that they can make an informed choice about whether they even want the job. Third, the people who

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join the organization feel special. They have survived the elaborate rites of passage necessary to join the organization. They experience the sense of accomplishment associated with completing boot camp when entering military service.

A recent *Fortune* article described these fresh approaches as "The New Art of Hiring Smart.[20] One ingredient has been increased use of job simulation exercises for assembly workers. These simulations, or work sample tests, help both the person and the organization assess fit. The applicant receives a realistic job preview of the work. The organization has an opportunity to assess applicants' technical skills and, when group interaction is required in an exercise, their interpersonal skills as well. Intelligence tests also seem to be on the rebound.

Sun Microsystems offers a good example of the use of rites of passage to allow mutual assessment of fit. This fast-growing Silicon Valley firm, like many high-technology companies, is constantly changing in response to rapidly developing markets, evolving technologies, and the pace of internal growth. Employees who prefer clear job descriptions, stability, a leisurely pace, and predictability would be unhappy at Sun. The hiring process is such a challenge, and so full of ambiguity, that unsuitable applicants tend to give up before the process is completed. Those hired have survived multiple interviews with many different possible co-workers. A joke at Sun is, "after seven sets of interviews, we put applicants on the payroll whether they've been hired or not." The hiring process thus introduces prospective employees to the culture of the organization.

Personality tests are another way to assess mutual fit. It appears that "personality tests are back."[21] For example, the Meyers-Briggs Type Indicator is used by companies such as Allied Signal, Apple, AT&T, Citicorp, Exxon, G.E., Honeywell, and 3M. These tests are used primarily in management development programs. However, personality tests are used increasingly as selection tests, particularly for assembly worker positions.

There is renewed interest in personality tests even though past efforts to validate them have been largely unsuccessful.[22] However, there is a growing belief that personality tests can be validated under the proper conditions.[23] These include:

1. Using personality measures that are tailored to the work setting. Major personality tests were not developed for work settings, so their poor track record in validation studies is not surprising.

2. Using personality measures to predict global criteria. That is, multi-faceted measures of job attitudes and behaviors, rather than one specific criterion such as quarterly sales.

3. Using measures of personality dimensions that are logically or theoretically associated with the work in the organization. This contrasts with screening for personality attributes that are not job related but hold some particular interest to managers.

Whereas personality tests provide organizations with information about applicants, realistic job previews (RJPs) provide applicants with information about organizations. Examples of RJPs are the Toyota USA job simulations/work sample tests that show applicants the repetitive nature of manufacturing work and the requirements for teamwork. Applicants can then make informed choices about whether they would be satisfied there. "Turned-off" applicants may drop out of the hiring process. Those hired are more likely to join the organization with a sense of commitment and realistic expectations. Fundamentally, an RJP helps individuals

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decide if they want to join an organization, based on their own assessment of the personality and how it might fit with a particular type of organization.[24]

Step Four: Reinforce Person-Organization Fit at Work
Selection is clearly the first and, arguably, the most important step in implementing a fragile system philosophy. However, the hiring process must be integrated with, and supported by, the firm's other human resource management practices. Japanese-owned plants in the U.S. and high involvement organizations illustrate this point.

Japanese automobile manufacturers operating in the United States provide examples of how to accomplish this. The Japanese "Auto Alley" in the U.S. provided more than 6,000 assembly jobs in 1989. Key operations include Nissan in Smyrna, Tennessee; Toyota in Georgetown, Kentucky; Honda in Marysville, Ohio; Mazda in Flat Rock, Michigan; and Diamond-Star Motors Corporation in Normal, Illinois.[25] The Japanese have attempted to create a certain type of organization, characterized by now-familiar values of teamwork, consensual decision-making, peer control, egalitarianism, and non-specialized career paths. Broad job classifications encourage employee flexibility, rather than identification with specific jobs. Extensive on-the-job training and job rotation further increase flexibility. Group activities encourage employees to contribute ideas for organizational improvement and promote teamwork. Employment stability helps the organization realize a return on its training and other investments in human resources, and increases employee loyalty to the organization. Thus, a selection system in such organizations typically screens for interest in work variety, social needs and skills, and organization commitment.

High involvement organizations (HIOs) are another class of organization that uses multiple systems to support hiring for person-organization fit. HIOs are a relatively new organizational form; there are perhaps a few hundred examples now existing in the U.S.[26] HIO's have two key characteristics.[27] First, the organization is designed to create very high levels of employee involvement. Power, information, skills, and rewards for performance are pushed down to the lowest levels of the organization. Self-managed teams or other structures enable employees to share decision-making power. Extensive training in technical, social, and business skills provides team members with the skills needed for effective self-management. Information systems communicate the performance data that teams need to manage themselves. Reward systems such as skill-based pay and gainsharing motivate needed behaviors, such as learning and problem solving. For obvious reasons, hiring practices in HIOs typically attempt to select employees who prefer working in groups and who have high needs for personal growth and development. Thus, the hiring process is one design element of many that must fit with the overall design.

The following case description of the hiring process in a new HIO illustrates all four steps of the new selection model.

Hiring for Person-Organization Fit: The Case of a Start-up High Involvement Organization
The research reported here was conducted as part of an action research project at a new float glass plant in the western United States.[28] The plant is a classic new HIO. Research on the selection system described here is part of a larger, on-going action research effort. Management was interested in developing selection procedures and tools for hiring employees with the necessary job skills, needs, and aspirations to fit the organization design. Researchers helped design the hiring process, conducted extensive research on the initial hiring process at the plant, and explored the validity of personality measures as possible future selection tools. The overall effort essentially followed the four steps previously discussed for hiring for person-organization fit.

Step One: Assess the Work Environment
Since the plant was a start-up operation, there were no existing jobs to analyze in this initial step. There were individual jobs with comparable content at other organizational sites, but management was committed to designing the new plant as the first high involvement organization in the company. Thus, analyzing the work environment of the existing plants would have been of limited use in designing a hiring process to match the new HIO. Instead, top management and two of the researcher/consultants (the second author and Tom Cummings of the University of Southern California) conducted an organizational analysis to assess key desired organizational characteristics, norms, and values. This analysis followed standard sociotechnical systems procedures, and specifically considered requirements for the level of employee growth and social needs. This led to the development of the management philosophy and practices that would define the new organization. A customized version of the HIO concept, tailored to the needs of the organization, emerged from this work.

Glass-making lent itself to an HIO design for several reasons. First, there was a great deal of task interdependence which required worker cooperation and teamwork. Second, technical uncertainty was high. Workers were responsible for making immediate decisions about the glass-making process from the procurement to furnace melting of raw materials and various stages of cooling, inspecting, cutting, packing, and storing. The plant's profitability is directly related to production efficiency and glass quality. Quality is directly dependent on workers' ability to maintain a continual, steady flow of glass, by constantly monitoring and regulating the temperature and speed of flow of the product through the system. Deviations from desired parameters must be corrected as soon as possible after detection. Internal control by employees is more responsive to system fluctuations than external control through supervision, rules, and procedures.

This work environment led management to adopt a work design that encouraged high levels of employee teamwork and decision making. Employees were organized into self-regulating work teams at each sequential stage of production. Management saw this job design as most appropriate for the relatively high task interdependence and task uncertainty of the plant technology. Management expected that as team members developed technical and social skills, they would make joint decisions about work methods and assignments and solve production problems on the line.

Step Two: Infer The Type of Person Required
Since work in the high involvement glass plant required understanding and becoming involved in the entire production process, selecting on the basis of technical skills was not enough. Basic KSAs, such as motor and arithmetic skills, while necessary, would not be sufficient for organizational success. Workers also had to feel a sense of commitment to working in this type of organization. Furthermore, the jobs were to be dynamic. Over time, employees were expected to learn different skills within their team and in other teams, and to take on an increasing share of decision making. Top management expected that the number of supervisors and layers of management would be reduced as the teams matured. A fit between applicant characteristics and the work requirements of a high involvement organization as a whole was required.

In addition to the necessary technical skills, two personality characteristics were especially important to the organization. One was growth need strength. The HIO design placed many demands on employees for continuous learning, decision making, and assuming responsibility for organizational structuring, functioning, and performance. For example, employees were required to train each other, give feedback to fellow team members on their performance, and help design

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organizational changes. Applicants who desired little challenge or learning opportunity and those who prefer narrowly defined jobs would have been misfits with this organization. Conversely, those who valued or had strong needs for personal growth, accomplishment, and personal development would be more committed to working in the new plant.

A second relevant personality characteristic was social needs. This was obvious because self-regulating teams demand cooperation and teamwork. In addition, management planned to make heavy use of special problem-solving groups, committees, and task forces. Those who saw working with others as a burden would have been misfits in such a setting, while people with high social needs were expected to prefer group forms of work and group activities.

Step Three: Design "Rites of Passage" That Allow the Organization and the Individual to Assess Fit

Participants were given a realistic portrayal of what it would be like to work in a team-based, high involvement structure, including the kinds of work behaviors that would be expected.

The hiring process consisted of several stages that involved multiple methods, raters, and criteria. A state agency conducted an initial screen of approximately 1000 candidates responding to local advertisements about job openings at the plant, which was then under construction. At this stage applicants received scores for their education and experience, such as a high school degree or GED, manufacturing or related experience, and ability to understand process instrumentation and complete a time card. In addition, tests using potential predictors based on personality and other survey questions also were administered at this time. Personality characteristics were assessed using the Personality Research Form—Form E, or PRF, a highly regarded personality assessment instrument.[29] The PRF measure of affiliation needs is very similar to social needs as described previously. Three PRF measures were relevant to growth needs: achievement, endurance, and dominance. (The dominance items measure desire to influence others or social achievement, not oppressiveness.) These two personality dimensions, affiliation and growth needs, were logically associated with the nature of work in an HIO and the PRF measures were moderately tailored to better fit the work setting. Of the 540 applicants who passed the initial screening and were invited to a pre-employment assessment and training program (described below), approximately 500 candidates responded.

Performance was assessed in four half-day sessions of a pre-employment assessment and training program, designed to capture characteristics of work in a high involvement float glass factory. The company used this program both as a selection tool and as a realistic job preview. As an RJP, the program showed how a high involvement organization is designed to operate, technical and social requirements, what it would be like to handle glass (for example, lacerations are common and special protective clothing is used to minimize the likelihood of injury), and various tasks employees would be expected to perform.

The program was divided into two approximately equal segments. One part involved work simulations consisting of handling and packing glass and operating hand tools and equipment required for glass making. Participants were given instructions about work methods, rules, and safety procedures, and engaged in glass making and packing tasks as a team. The second part of the training program involved classroom learning and experiential exercises aimed at group decision making. Almost half of the classroom time was used to present information about glass making and the design features of the high involvement plant, including self-regulating groups, participative leadership, egalitarian human-resource practices, skill-based pay, and gainsharing. Participants were given a realistic portrayal of what it would be like to work in a team-based, high involvement structure, including the kinds of work behaviors that would be expected. They also were tested on basic math and measurement skills needed to perform glass making and packaging tasks, as well as given homework covering

basic processes and terminology used in making glass as well as the nature of one's work and responsibility in a high involvement organization.

For more than half of the classroom time, participants engaged in exercises designed to simulate the kind of group interaction and decision-making occurring in self-regulating groups. One exercise, for example, involved reaching a group consensus about the ranking of items needed to survive in the rugged outdoors. Another exercise involved role playing a group decision about which department should receive a new piece of equipment. These exercises were followed by extensive debriefing about members' behaviors and interactions and how the learning applies to the work of teams in the plant.

The scoring procedure evaluated applicants from a holistic perspective, that is how well each applicant fit in a high involvement setting rather than how he or she performed on individual job-related tasks. Applicants were evaluated by managers and supervisors who had received training on how to avoid common rater errors. Classroom activities, group exercises, and work simulations were scored. Applicants were evaluated on the quality and thoroughness of homework assignments and were required to attain minimum passing scores on arithmetic and tape measure reading tests. Group exercises were scored on the degree applicants exhibited participating, negotiating, gatekeeping, and probing behaviors. Finally, work simulations were scored on four factors: absence and tardiness over the four days; safety behavior; responsibility, meaning following instructions and not exhibiting disruptive or distracting behavior; and general behavior, meaning exhibiting team skills, paying attention to instructors, and not breaking plant rules or abusing equipment. Thus, the work simulations were not scored on task performance per se. Instead, they were scored on behaviors relevant to the overall success of the organization. This focus on behaviors ensured that the selection process could be defended legally, if necessary, on the basis of content validity.

The pre-employment assessment and training program met two important goals. First, it was consistent with technical and professional standards for employment selection. As in assessment centers, job behaviors were sampled systematically across different situations. Multiple and diverse activities and assessment methods afforded evaluators an opportunity to assess how well applicants would fit into an HIO generally, rather than just on how well applicants could perform specific tasks. The use of global criteria satisfied another condition for successfully validating a personality test as selection tools. Second, the program gave applicants a realistic job preview of what working in a high involvement glass plant would be like. The task activities provided applicants with a preview of the physical and potentially dangerous nature of the work. (One of the authors was present when a piece of tempered glass was mishandled and literally exploded in an applicant's hands.) The classroom activities prepared applicants for the organization's emphasis on working together and taking responsibility for action.

Those who passed this program were invited to a final selection interview with a panel of managers. This structured interview consisted of questions regarding manufacturing experience, education, understanding the high involvement and autonomous work group design, past experience and interest in group activities, and other performance skills and creative experiences. Finally, applicants were required to pass a physical examination including a drug screen. Ultimately, 250 applicants of the original 1000 applicants successfully completed these phases and the physical examination.

We subsequently validated the PRF personality test. Specifically, scores on the PRF were significantly correlated with performance in the pre-employment

training program and with applicants anticipated satisfaction with work in the organization.[30] This means that it would be appropriate and legal for the company to use measures of social and growth needs from this test in future hiring decisions. Since the analysis was completed long after most employees had been hired at the site, however, the company did not use the test in hiring decisions.

Step Four: Reinforce Person-Organization Fit at Work
The objectives of the hiring process were reinforced by various organization design features that emphasized high involvement and team functioning. For example, extensive training was provided, both in technical skills and in social skills such as group decision making. A skill-based pay system gave employees increases in base pay for learning new jobs within their team. This in turn reinforced employees' interest in receiving training, which enabled them to earn pay increases. The plant adopted a gainsharing plan from the beginning that provided generous plant-wide monetary bonuses when plant performance met specific objectives. This reinforced the need for teamwork, since no individual could win a bonus at the expense of another. The gainsharing plan also provided incentives for exemplary performance and for developing improvements in the production process that could result in greater payouts. Extensive business information was routinely shared with employees, in part to make the gainsharing plan work more effectively. Employees were also involved as needed in task forces of various kinds to solve business, personnel, and other problems. In short, there was extensive reinforcement for the behaviors and characteristics that management sought during the hiring process.

Extensive business information was routinely shared with employees, in part to make the gainsharing plan work more effectively. Employees were also involved as needed in task forces of various kinds to solve business, personnel, and other problems.

The results of the hiring process have been positive. A survey of employees after startup indicated that employee quality of work life, according to various measures of satisfaction, organization commitment, and so on, was very high—a likely indication of person-organization fit. After an initial period of high turnover, turnover has dropped below national norms. On most key performance measures, the plant is one of the most effective in the company. Its main rival is another new high involvement plant that opened shortly after startup of the plant described here; it was developed on the same HIO model and used a similar hiring process. On the whole, it appears that the plant has been a very effective organization and that hiring for the organization, not just the job, has contributed to that effectiveness.

Benefits and Problems from Hiring for Person-Organization Fit
Clearly, the new approach to hiring for person-organization fit requires more resources than the traditional selection model. Is it worth the cost? Consider the potential benefits (see Exhibit 2).

(1) Employee Attitudes. Researchers have long proposed that a fit between individual needs and organizational climates and cultures would result in greater job satisfaction and organization commitment.[31] There is ample data documenting that the realistic job previews typically used in the new selection model are associated with higher on-the-job satisfaction.[32] Greater team spirit also is likely when new employees have shared the experience of moving successfully through the demanding rites of passage that lead to organizational entry.

Surveys of applicants in our case example indicated that these favorable attitudes were associated with the hiring process. For example, the majority of applicants felt the pre-employment training program accurately measured how well they could do the job and get along with others, and was a help in subsequent performance on the job and interacting with co-workers. Applicants also felt it provided a realistic preview of working at the plant. An overwhelming seventy seven percent reported that after going through pre-employment training, the work seemed more satisfying than when they first applied for the job. Only two percent thought it would be less satisfying.

POTENTIAL BENEFITS

1. MORE FAVORABLE EMPLOYEE ATTITUDES (SUCH AS GREATER JOB SATISFACTION, ORGANIZATION COMMITMENT, AND TEAM SPIRIT)
2. MORE DESIRABLE INDIVIDUAL BEHAVIORS (SUCH AS BETTER JOB PERFORMANCE AND LOWER ABSENTEEISM AND TURNOVER)
3. REINFORCEMENT OF ORGANIZATIONAL DESIGN (SUCH AS SUPPORT FOR WORK DESIGN AND DESIRED ORGANIZATIONAL CULTURE)

POTENTIAL PROBLEMS

1. GREATER INVESTMENT OF RESOURCES IN THE HIRING PROCESS
2. RELATIVELY UNDEVELOPED AND UNPROVEN SUPPORTING SELECTION TECHNOLOGY
3. INDIVIDUAL STRESS
4. MAY BE DIFFICULT TO USE THE FULL MODEL WHERE PAYOFFS ARE GREATEST
5. LACK OF ORGANIZATIONAL ADAPTATION

Exhibit 2. Potential Benefits and Problems With Hiring For Person-Organization Fit

(2) Employee Behaviors. Studies indicate that high involvement organizations, which typically use the new selection model, have low rates of absenteeism, turnover, and grievances.[33] The data are even clearer that using realistic job previews in Step 3 is associated with lower turnover.[34] We also have presented a strong case that person-organization fit will result in employees displaying more of what have been labelled "organizational citizenship behaviors." These are behaviors that employees perform above and beyond explicit job requirements. The thinking here is that fitted employees see themselves as really belonging to the organization and willing to invest their own resources in its on-going maintenance.[35]

(3) Reinforcement of Organization Design. The effectiveness of Japanese transplants that hire according to this model is common knowledge. HIOs often are very high performers. For example, a study of a large sample of high involvement organizations found that HIOs outperformed their industry on return on sales by an average of 532 percent and outperformed their industry on return on investment by an average of 388 percent.[36] Researchers often argue that the power of such an organization derives from the mutual reinforcement of its parts, including the selection process. The hiring process in HIOs helps select employees who are interested in challenging, responsible, varied jobs and pay systems that reward needed behaviors and performance.

Potential Problems

Hiring for person-organization fit may also have its disadvantages (see Exhibit 2):

(1) Greater Investment in Hiring. This model requires a much greater investment of resources in the hiring process. For example, Mazda in Flat Rock, Michigan spends about $13,000 per employee to staff its plant.[37] It appears that organizations hiring within this model are spending the same time and money on hiring an assembly worker as they do in conducting an executive search.

The costs of making revisions in the hiring process also are different in the new model. A traditional hiring process needs to be revised whenever the requirements of the job change significantly. A hiring process for person-organization fit needs to be changed whenever the business, technological, or cultural requirements of the organization change significantly. This means that changes in hiring practices for person-organization fit are likely to be less frequent but much greater in scope than changes in traditional hiring

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processes. A change in hiring practices for person-organization fit may well involve a change in how every new employee is hired.

(2) Undeveloped Selection Technology. The supporting selection technology is still relatively undeveloped and unproven. One problem is the still-thin track record of successfully validating personality tests against job performance. However, the present authors' study in which measures of growth needs and social needs predicted candidates' performance in a pre-employment simulation of high-involvement work demonstrates that personality measures, carefully chosen and developed, can be validated. Yet until personality tests acquire a deeper inventory of successful validation studies, organizations will doubt their usefulness.

In the context of person-organization fit, techniques for assessing people are more developed than those for assessing work environments. Even on the people side, though, the field is not nearly as sophisticated in measuring work-related personality facets as it is in assessing KSAs. Moreover, there is a great need for techniques of organizational analysis that are as sophisticated as those for job analysis (e.g., the PAQ). Overall, the challenge in organizational analysis is to: (a) identify relevant underlying dimensions of settings and how they can be measured, (b) determine the major impact on individual attitudes and behaviors, and organizational effectiveness, and (c) determine how such impacts differ depending upon individuals' personality.[38]

In fact, there may be less adverse impact as a result of hiring for organization fit than in traditional hiring systems.

Managers may be concerned about the legality of these developing tools. More broadly, managers may be concerned about whether selecting for organization fit is legal. This concern is groundless, in our view. The legal standards for person-organization fit are no different than those for person-job fit. In general, selection procedures that do not result in adverse impact on protected minorities and women are not illegal. If the selection system does result in adverse impact, then evidence of job-relatedness must be presented. Job-relatedness is based on the content, construct, and criterion-related validity of the selection procedures. The procedures we have described establish job-relatedness.

In fact, there may be less adverse impact as a result of hiring for organization fit than in traditional hiring systems. Traditional systems rely mostly on tests of abilities to predict job performance. Intellectual ability tests typically result in adverse impact against minorities, and physical ability tests often result in adverse impact against women. Organization fit, in contrast, is based largely on values, needs, and motives that may be more evenly distributed in the population.

(3) Employee Stress. Individuals fitted to "fragile systems" may find their organizational lives to be more stressful. The firms in the Japanese Auto Alley, high-involvement organizations, firms in the Silicon Valley, and so on, which rely on carefully selected people for system effectiveness are also laying substantial claims to those people's lives. This higher level of involvement at work may be associated with experiencing more stress on the job. These workers have reported that they now take work problems home with them and feel the strains more typically associated with managerial roles.[39]

(4) Difficult to Use the Full Model Where the Benefits are Greatest. A new hiring model may offer the greatest potential benefits to new organizations, such as new plants and startup companies. This is because hiring the right kinds of employees can help establish the desired culture of the organization from the very beginning. In existing organizations that are attempting to change their culture, there may be a long period in which the proportion of employees with unwanted attributes drops through attrition, while the proportion of employees with desired attributes gradually increases due to an improved hiring process.

Most of the hiring model we have described can be used in new organizations. However, one component of the model, specifically formal selection testing, often

cannot be used appropriately or legally early in the life of the organization because the tests have not yet been validated. By the time the validation studies have been conducted, most of the workforce will have been hired. In some circumstances, it may be possible to avoid this problem by validating the tests before hiring in the new organization. For example, many companies that develop one high involvement organization (or other unusual culture) go on to develop others. It may be possible to validate the tests in an existing location if the culture of the existing organization and that desired of the new location are similar. AFG Industries, for example, could use the PRF test to hire employees in other plants that are designed as high involvement organizations.

Another way to avoid this problem is taken by Development Dimensions International, a consulting firm that designed the hiring system for Toyota's Kentucky plant as well as other hiring systems aimed at person-organization fit.[40] DDI identifies the desired characteristics of new hires through a diagnosis conducted with senior managers of the organization. Potential hires explicitly are told about the desired characteristics during the orientation process. Then, the new hires complete a Job Fit Inventory, which includes items relevant to the desired qualities of employees in the organization. The instrument intentionally is very "transparent" and fakeable. Thus, it does not serve the same purposes as personality tests. Rather, it is used to screen out the bottom five to fifteen percent of applicants—those who admit they lack the attributes that they are told explicitly that the company is seeking.

(5) Lack of Organizational Adaptation. A problem could arise in hiring for the organization if it led to a workforce in which everyone had the same personality profile. The organization might become stagnant because everyone would share the same values, strengths, weaknesses, and blindspots. (Obviously, the issue is the same whether employees all tend to have the same point of view because of the selection system or because of training and socialization.) There has been considerable debate about whether a powerful organizational culture, whatever its source, leads to success or leads to dry rot and lack of innovativeness. There is some evidence, for example, indicating that organizations with little internal variability in employee perspectives perform better in the short run but worse in the long run, presumably as a result of inferior adaptation.[41]

However, we expect that significant internal variability will co-exist with person-organization fit. Even the best selection system is still imperfect; we do not succeed in hiring only the "right types." More fundamentally, the hiring process still results in variability on the desired characteristics. Even though all those hired may meet minimum standards, some will be higher than others on the desired characteristics. Finally, employees are not clones of one another just because they are similar on some personality dimensions. We would expect considerable variation on demographic, cultural, and personality dimensions that were not the basis for selection.

The Future of Hiring for Person-Organization Fit

What does the future hold for this more sophisticated and elaborate approach to employee selection? Will it be adopted by an increasingly large share of corporations?

We believe that hiring for the organization, not the job, will become the only effective selection model for the typical business environment. The defining attributes of this business environment—such as shortened product life cycles, increasingly sophisticated technologies, growing globalization of markets, shifting customer demands—make for very transitory requirements in specific employee jobs. Organizational success in this environment requires hiring employees who fit the overall organization, not those who fit a fixed set of task demands. Employee personalities must fit the management philosophy and values that help define the organization's uniqueness and its fitness for the future.

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We also believe that senior managers must become more "person-oriented" in their own implicit resolution of the person-situation controversy if hiring for person-organization fit is to become a more common approach to selection. Again, generally speaking, managers tend to believe that tightly controlled situations are more effective in shaping employee performance than less-structured situations that allow the expression of individual differences. Managers who believe this are more inclined to spend resources on creating strong situations via job descriptions, close supervision, and so on than on sophisticated selection procedures.

Finally, we offer an important caveat to "person-oriented" managers who are committed to hiring for person-organization fit. They must manage a paradox. They must build strong organizational cultures yet, at the same time, design work situations that are weak enough to allow the unique qualities of individual employees to impact work performance. They key ingredient in balancing this paradox is to create a strong organizational culture with values that empower employees to apply their individual potentials to the conduct of their work. In this way, fragile systems release the employee energy necessary to compete in today's business environment.

Endnotes

[1] See William E. Sheeline, "Avoiding Growth's Perils," *Fortune*, August 13, 1990, 55.

[2] "Japan's Gung-Ho U.S. Car Plants," *Fortune*, January 30, 1989, 78-85.

[3] For a review of the person-situation controversy, see Larry James and Terrence Mitchell (Eds) of several articles in a special forum, "Situational versus Dispositional Factors: Competing Explanations of Behavior," *Academy of Management Review*, 1989, *14*. In particular, see Jennifer Chatman, "Improving Interactional Organizational Research" in that issue for implications of the controversy for selection and training.

[4] See, for example, Terrence Mitchell "Organizational Behavior" in M.R. Rosenzweig and L.W. Porter, (Eds) *Annual Review of Psychology, Vol 30* (Palo Alto, CA: Annual Reviews 1979); Howard Weiss and Seymour Adler, "Personality and Organizational Behavior" in Barry Staw and Larry Cummings (Eds), *Research in Organizational Behavior, Vol 6* (Greenwich, CT: JAI Press, 1984).

[5] See, for example, Chatman, op cit., Weiss and Adler, op cit.

[6] A number of research reviews have documented the low validity of the employment interview. For example, see R.D. Arvey and J.E. Campion, "The Employment Interview: A Summary and Review of Recent Research," *Personnel Psychology*, 1982, *35*, 281-322. For an overview of higher validity coefficients reported for appropriately designed, or structured, interviews, see Neal Schmitt and I. Robertson, "Personnel Selection," in M.R. Rosenzweig and L.W. Porter (Eds), *Annual Review of Psychology, Vol 41* (Palo Alto, CA: Annual Reviews Inc., 1990).

[7] See, for example, Chatman, op cit.; Weiss and Adler, op cit.

[8] John P. MacDuffie, "The Japanese Auto Transplants: Challenges to Conventional Wisdom," *ILR Report*, Fall, 1988, *26* (1), 12-18;Huaro Shimada and John Paul MacDuffie, "Industrial Relations and 'Humanware,' Japanese Investments in Auto Manufacturing in the United States," Working Paper, Sloan School of Management, MIT, 1987.

[9] For an overview of the steps in the classic selection model, see Benjamin Schneider and Neal Schmitt, *Staffing Organizations*, Second Edition (USA: Scott Foresman and Company, 1986). The goal of the traditional selection model is to produce a fit between the critical requirements of a particular job and the job-relevant KSAs of job applicants. This approach consists of three steps. First, a job analysis is conducted to determine the critical requirements of a particular job. Second, on the basis of the job analysis the analyst infers the knowledge, skills, and abilities that are needed for the job. Finally, selection tests are chosen or developed that are intended to indicate the degree to which job applicants possess the KSAs needed on the job. The tests are administered to all applicants. The tests are validated by collecting data on criteria measures, such as job performance, and then examining the correlation between applicant test scores and criteria measures. A statistically significant and reasonably high correlation indicates that the test is capable of discriminating appropriately between employees who do well and those who do poorly on the criteria measures.

[10] See John P. Wanous, *Organizational Entry: Recruitment Selection, and Socialization of Newcomers*, (Reading, Mass: Addison-Wesley Publishing Company, 1980) for a more complete discussion of these two types of fit and how both the organization and individual approach them.

[11] For more detail on job analysis techniques, see Schneider and Schmitt, op cit.

[12] Caren Siehl and Joanne Martin, "Measuring Organizational Culture: Mixing Qualitative and Quantitative Methods," in M.O. Jones et al. (Eds) *Inside Organizations* (Beverly Hills: Sage, 1988).

[13] Chatman, op cit.

[14] Michael Tushman and David Nadler, "A Diagnostic Model of Organizational Behavior."

[15] As examples of this thinking, see Barry M. Staw, Nancy E. Bell, and John A. Clausen, "The Dispositional Approach to Job Attitudes: A Lifetime Longitudinal Test," *Administrative Science Quarterly*, 1986, 31, 56-77; Weiss and Adler, op cit.

[16] Staw, et al., op cit.

[17] "Doug Bray: You're Got to Pick Your Winners," *Training*, February, 1988, 79-81.

[18] Richard Pascale, "Fitting New Employees into the Company Culture," *Fortune*, May 28, 1984, 28-42.

[19] For an overview of this issue, see Schneider and Schmitt, op cit.

[20] Brian Dumaine, "The New Art of Hiring Smart," *Fortune*, August 17, 1987, 78-81.

[21] Wilton Woods, "Personality Tests Are Back," *Fortune*, March 30, 1987, 74-82.

[22] For a review of the track record of validation studies of personality tests as selection tools, versus other measures, see R.M. Guion and R.F. Gottier, "Validity of Personality Measures in Personnel Selection," *Personnel Psychology*, 1965, 18, 49-65; R.M. Guion, "Changing Views for Personnel Selection Research," *Personnel Psychology*, 1987, 40, 199-213; Schmitt and Robertson, op cit., and N. Schmitt, R. Gooding, R. Noe, and M. Kirsch, "Meta-Analysis of Validity Studies Published Between 1964 and 1982 and the Investigation of Study Characteristics," *Personnel Psychology*, 1984, 37, 407-422.

[23] Schneider and Schmitt, op cit., 353.

[24] See Wanous, op cit.

[25] "Japan's Gung-Ho U.S. Car Plants," op cit.

[26] Richard E. Walton, "From Control to Commitment in the Workplace," *Harvard Business Review*, March-April 1985, 76-84.

[27] Edward E. Lawler III, *High-Involvement Management*, (San Francisco: Jossey-Bass, 1986); S. Mohrman, G. Ledford, Jr., E.E. Lawler III, and A.M. Mohrman, "Quality of Work-Life and Employment Involvement," in C.L. Cooper and I. Robertson (Eds), *International Review of Industrial and Organizational Psychology*, (New York: John Wiley & Sons, 1986).

[28] The case description is an illustrative overview of the steps and some techniques associated with hiring for the organization, not the job. Readers may contact the authors if they are interested in more details about the hiring process, such as assessment methods, validation strategies, scoring of simulations, and so on.

[29] D.N. Jackson, *Personality Research Form Manual*, 3rd ed., (Port Huron, MI: Research Psychologists Press, 1984). For a review of the PRF, see J.S. Wiggins, *Personality and Prediction: Principles of Personality and Assessment*, (Reading, MA: Addison-Wesley, 1973).

[30] The significant correlation between scores in the composite growth needs scale and performance in the pre-employment training program was a 0.22 (and it was 0.27 after correction for unreliability in the criterion). This compares favorably to the average validity of 0.15 found in a recent review of research using personality measures (N. Schmitt, R.Z. Gooding, R.A. Noe, & M. Kirsch, "Meta-Analysis of Validity Studies Published between 1964 and 1982 and the Investigation of study characteristics," *Personnel Psychology*, 1984, 37, 407-422). In addition, scores on the social needs measure were significantly correlated (.16) with anticipated satisfaction.

[31] See Wanous, op cit. for a discussion of this proposition.

[32] For a review of the research findings, see S.C. Premack and J.P. Wanous, "A Meta-Analysis of Realistic Job Preview Experiments," *Journal of Applied Psychology*, 1985, 70, 706-719.

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[34] Premack and Wanous, op cit.

[35] See Chatman, op cit.

[36] Ledford et al.

[37] William J. Hampton, "How Does Japan Inc. Pick Its American Workers?" *Business Week*, October 3, 1988, 84-88.

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[40] *Assessment Strategies for Selection* (Pittsburgh, PA: Development Dimensions International, 1990).

[41] D.R. Denison, *Corporate Culture and Organizational Effectiveness* (New York: Wiley, 1990).

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From socialism to capitalism: the effects of Hungarian human resources practices

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Executive Overview

What are the human resources management practices within communist and formerly communist companies? Many of the managers from capitalist countries forming joint ventures with state-owned enterprises in communist and formerly communist countries have only superficial ideas about these enterprises' human resources management practices and their effects. The more lurid dysfunctional practices of these organizations are well known, and foreigners often (mistakenly) assume that these result from incompetence. However, such practices have evolved within complex systems of organizational behavior which were largely successful in achieving their real objectives: political control and production quantity.

This article presents a detailed analysis of four human resource management practices in Hungarian companies: (1) the weak performance pressures, (2) substantial pay-at-risk compensation systems, (3) promotion-through-connections, and (4) ambiguous responsibilities. These practices result in numerous dysfunctions: excessive bargaining between supervisors and subordinates, pervasive distrust, the de-legitimation of managers, and responsibility avoidance. Unfortunately, these practices are changing slowly, at best, under economic reform. The article concludes with suggestions for both local and foreign managers.

In My View

Executives from capitalist countries are rushing to form joint ventures with enterprises in the former communist countries of Central and Eastern Europe. Yet, what do these executives really know about the management practices and working relationships in these enterprises? While numerous newsletters and professional newsweeklies can provide detailed analyses of the political and legal environment for business, they provide only partial, but vivid, anecdotes about what happens inside these enterprises. Into this analytic vacuum have come untested assumptions, such as, "Employees do not work hard because they have no financial incentive."

Joint-ventures in reforming communist and formerly communist countries are fraught with difficulty under the best of circumstances. Unfortunately, they are made more difficult by a lack of understanding of the human resources management systems and resultant workplace behavior in these societies. Foreign managers eventually do learn to understand the terrain, but for many it is after a long and frustrating "trial by fire." Unfortunately, some expatriate managers grow so frustrated that their own anger interferes with their ability to build an effective organization. This report is intended to help managers from capitalist systems anticipate and manage in these rapidly changing environments. It describes the actual human resource management practices and analyzes some of their effects in the formerly communist country that has been most successful in attracting foreign investment.

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This work also is written for local managers, consultants, and policy makers—those who face a historically unprecedented struggle to transform ineffective enterprises into successful competitors in international (and newly opened domestic) markets. It is actually much easier for the foreign managers: if they stay around long enough, they can build effective organizations, because they have their own "models" of how organizations should work. For the local managers, the perspective of a foreigner (speaking openly as a friend rather than politely as a guest) is particularly valuable now.

Why Hungary?

Hungary has probably come farther than the other Eastern bloc economies in the reorganization of its economic life toward market-driven enterprises. It began significant reform to encourage privately owned enterprises in 1968. Currently foreigners and locals have complete freedom to establish private, profit-making companies. It has nascent stock and bond markets and a vigorous political debate over ways to privatize the state-owned enterprises which still dominate the economy.

Hungary has also established, with Western partners, the first private graduate management school in an Eastern Bloc country, the International Management Center. The purposes of this school are to assist Hungarian managers in more effective management of their newly independent enterprises and to foster the development of private enterprise through entrepreneurship and the facilitation of joint ventures with foreign partners. In 1989, I spent a semester at this center located in Budapest training managers, and this article is based on my experiences of learning how to assist these managers to change their organizations.

Of course, Second World organizations differ in many significant ways from capitalist ones. The situation becomes even more complex as particular countries make radical legal and economic changes, while others have not. Even within Hungary there are wide variations—the executives of some state-owned enterprises aggressively move into new markets and streamline their operations, others attempt novel reorganizations (the actual effects of which no one can accurately forecast), and others nervously wait. One short article could not possibly do justice to all of the variety of management practice and employee behavior in these reforming countries, or even in Hungary's industrial sector. Choices had to be made. Human resources management features were selected that met two criteria: (1) They were focused on managerial practices in "economic enterprises" (what would be for-profit businesses in a capitalist economy), since these are the likely joint-venture partners for western companies; (2) They were practices that appeared to have their origin in the now-defunct communist system of political control, but which seem to have taken on a continuing life independent of their communist origins. This article is intended to be useful to both potential partners and local managers by openly describing some of the less attractive management practices and their effects on employees in a country that has overthrown communist political control. This analysis is not intended as a balanced representation of all aspects of management practice in formerly communist countries. Hungary has more than its share of successful organizations heroically transformed from bankruptcy to rapid growth and profitability in its state-owned as well as in its growing private sector. There is ample material for both the business-press hagiographers and the academic critics.

Human Resources Management Practices

Four features of human resources management practice are examined. First is the lack of focused attention to motivating individuals. While the problem originates in old government policies, the labor scarcities worsened by economic reform contribute to continuing weak performance pressures. The second feature,

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contrary to what many outsiders assume, is the fact that Hungarian employees and managers have a large proportion of their pay "at risk"—a yearly bonus that can range from zero to 200 percent of base pay. Surprisingly, despite the assumption in the compensation literature that such contingent pay would result in positive outcomes, the actual behavioral and attitudinal effects are quite dysfunctional. Third, promotional policies traditionally were not based on performance assessment and procedural justice, which resulted in resentment among managers. Finally, ambiguity in accountability is widespread, exacerbating distrust and often leading to frustration and miscommunication.

Thus, a rapid pace of change may be an inevitable ingredient of the conversion from state-directed to market-driven economies, and this abruptness, itself, precipitates management challenges.

No doubt some of the observations presented here are more "Hungarian" than they are "reform-communist" and so may not apply in other formerly communist countries. Each country has its own unique culture, history, and comparative economic resources. Yet it is my belief that many of the experiences of these pioneering Hungarian organizations may prove useful in understanding management dilemmas in managing employees in other organizations emerging from command economies.

In addition, the economic structures in Hungary are changing rapidly (although some argue that they are not changing rapidly enough!), and some of the employee behavior described here may be influenced by the confusion generated from this rapid change. However, it may be that such a comprehensive economic reform cannot be managed and confined to a more orderly progression. Rather, it may inevitably reach a point, as it has in Hungary, at which there is a sudden avalanche of change. When enough people believe that economic reform will not go back, as in Hungary, there is a stampede to position oneself favorably for the new economic order. Thus, a rapid pace of change may be an inevitable ingredient of the conversion from state-directed to market-driven economies, and this abruptness, itself, precipitates management challenges.

The Economic Context

Before describing the four human resources management practices and their attitudinal effects, it is important to describe very briefly the economic context to establish the background for the changes that are occurring. Although Hungary has not had a true command economy for many years, for complex reasons[1], managers in its state-controlled enterprises have been facing an environment more similar to their command economy than to their capitalist neighbors. Even today, while Hungarian managers struggle to make their products more attractive to customers, for a great many state-controlled enterprises, change is coming slowly. Therefore, it is best to see the following description of the economic context as a description of the recent past that is no longer pertinent for many companies (especially private companies) but still is relevant for some (especially in the state sector).

Under conditions of government domination, managers' strategic attention is focused, not on markets, but on both supplies and "responsibilities."

There are important differences in the economic context of market-driven and state-controlled economies. These differences are most apparent in the "corporate strategies" that executives must adopt but are also relevant for understanding the pressures on individuals within the workplace.

A Seller's Market

The most important fundamental to understand is that state-dominated economies are "scarcity economies." This means that all components of organized activity are difficult to obtain—raw materials, labor, replacement parts, capital, . . . everything. In practice, it means that managers' major operational objective is to secure reliable supplies of needed credits, material, and labor. Since the governmental planning apparatus directs where managers' output should go and how much revenue they are to receive, markets as a revenue source simply do not receive the managerial attention paid them in market-driven companies.

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Under conditions of government domination, managers' strategic attention is focused, not on markets, but on both supplies and "responsibilities."

Most Companies are Monopolies
In a fully planned economy, one of the theoretical efficiencies is that the planners dedicate one (or a few) suppliers of a certain product to avoid the "waste" of duplicative competing products. Many enterprises thus become the only supplier of their product to the receiving enterprise and, therefore, have a responsibility to them. Since the producing enterprises often face shortages and other problems, it is difficult for them to be reliable in meeting their responsibilities. This sets the stage for the endless rounds of "bargaining" that characterize managing directors' lives: bargaining with suppliers, bargaining with "customers," and, as will be detailed later, bargaining with employees.

Executives Focus on Bargaining
In spite of their expanded autonomy under the reforms, Hungarian managing directors still must expend significant energy bargaining. In the now-defunct pure command economy, paying a higher price for the product was illegal; today it is entirely legal to use this "market solution." However, many impoverished state-owned enterprises do not have the foreign currency reserves to make expensive purchases on the western markets.

Forty years of a state-controlled economy have left an infrastructure of delivery contracts at artificial prices that make it virtually impossible for many state-owned enterprises to take advantage of their new market opportunities. Many managers are pursuing newly available markets but find that in the short term they are still trapped in a web of monopoly relationships that require perennial bargaining.

With what can these managers bargain? Sometimes they control something valued by the partner. Until the recent destabilizing changes, the most effective negotiating position had been to have "good connections" or influence with those on whom the partner depended. In Hungary, there is a common joke of a poor man who could not provide much financial support for his son. However, he did enroll his son in one school for a year, and then the next year enrolled him in another school for a year, and so on for his entire school career. Thus, the son always was able to find "an old school chum" who had friends in the right places or who had access to supplies, and the father provided an inheritance for his son that was worth much more than any sum of money. Unfortunately, under scarcity conditions, the threat is usually more viable than the promise, which leads to what one market-research company manager called "ugly, brutal, blood-running-under-the-door bargaining."

Of course, under the previous political system, the most important scarce supplies (such as investment credits and apartments at low rents) were controlled by members of the ruling communist party (in Hungary called the Hungarian Socialist Worker's Party). Good relations with key party members became necessary to cope with the primary strategic difficulty of securing credits and supplies faced by enterprise managers. Party membership was a virtual prerequisite for top managerial positions, and most executive careers moved up through the party apparatus, then over to executive positions in enterprises.

Note that this form of party influence over managers was not obtained through brute force and differed only in degree from the relationships many capitalist-economy executives must maintain—with bankers, for example. Today in Hungary, the party has disintegrated and no longer has a monopoly over all

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sources of supply, but its former members do retain important positions and their collegial connections throughout the system. One of the ambiguities of the economic transformation is what happens when the individuals occupying key positions and their personal connections with one another have not changed but they are no longer "organized" through one (party) institution. At present, good connections are still vitally important in many aspects of managers' lives, whether they be state-owned enterprise managing directors, entrepreneurs, or foreign joint-venture partners.

For example, currently the Hungarian government is under severe financial pressure from the International Monetary Fund because the country is running a budget deficit, while trying to repay its large foreign debt. So the government has reached an agreement with the International Monetary Fund in which it is significantly reducing the supply of money to the economy. With such a large proportion of the economy state-owned and the banking system still dominated by state-owned companies, this monetary restriction has had a powerful effect on all enterprises. That is, short-term credit has been restricted and payments delayed, so large state enterprises have no cash to pay their suppliers, who then have no cash to pay their suppliers, and so on—resulting in a domino-effect cash squeeze throughout the economy. Yet when an enterprise finally does receive cash, who among their many creditors do they decide to pay first? Although they often are constrained by contractual obligations, it does happen that managers sometimes pay first those with whom they have "the best relations." Anyway, believing in this possibility, many suppliers consider it necessary to maintain continuous good relations with customers to protect their own enterprises.

As these examples illustrate, although Hungary has not been a fully command economy for more than twenty years, some aspects of the scarcity economy remain for many of its organizations. The government still owns nearly eighty-five percent of the country's capital stock. Privatization is proceeding slowly in all of the former communist countries. At present many enterprises are still tied to the contracts and relationships developed in the communist era, and many managers and employees firmly believe that cultivating good connections is the most effective use of their time.

Human Resource Practice #1: Weak Performance Pressure

The attention given to individual levels of employee and managerial performance are rooted in the former economic structure but, interestingly, have not changed notably in this early period of reform.

The lack of incentives and pressures for high levels of product quality and efficiency in state-owned monopolies is widely known. However, the manner by which these enterprise-level processes are translated into individual job performance expectations is more complex than many assume. While it is true that the lack of performance pressure at the top of the organization is reflected in weaker performance pressures on subordinates, the situation has been intensified by labor scarcity, and labor scarcity is becoming worse under reform.

Labor scarcity

Under the previous political system, necessities (food, schools, health care) were provided at nominal costs and wages were kept low as a matter of public policy—to prevent individuals from accumulating capital which might foster the rebirth of capitalism. This situation cannot change quickly for the state-owned enterprises, since there is no "market test" of employees' value. Therefore, for decades, wages and salaries in Hungary have been set at very low levels (particularly for professional and managerial workers) in comparison to western levels. In addition, Hungary was essentially a one-employer monopsony market for labor, which will force wages down.

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To make matters worse, Hungarian state-owned enterprises developed a strong demand for (low-wage) employees, like state-owned bureaucracies everywhere that are not known for their excessive zeal to shrink the sizes of their organizations. Thus, under the previous system, many state-owned enterprises found that they had more jobs than employees willing to work for artificially low wages, leaving them with a labor scarcity, just as they faced a scarcity of material and capital when prices were set at low levels.

Under economic reform, the labor scarcity problem is worse. State enterprises' wages still are very low (partly because of legal restrictions and partly because many of these organizations face severe financial constraints as they seek to adapt to market conditions with constrained credit). Now, however, employees are able to leave for higher paying jobs in the burgeoning private sector; thus many state-owned enterprises are finding it difficult to attract and retain high quality labor. Similarly, the private companies are also encountering a shortage of labor, particularly of trained managers who speak foreign languages. The supply of Hungarians skilled in capitalist management practices, technical specialties, and languages lags well behind the rapidly growing demand.

Under these circumstances there was—and continues to be—weak pressure for high levels of individual performance. This is a result both of labor scarcity and of the fact that state-owned enterprises themselves do not receive significant pressure to produce at optimum levels of performance. Further, in this early period of reform, many of the private firms lack sufficiently meaningful competition which would motivate them to strive for internal efficiency or high levels of quality performance.

Neglect of Formal Performance Appraisal
Under these circumstances, the dearth of any systematic formal performance review practices should not be surprising. Some state-owned enterprises have performance appraisal systems, but personnel directors find it very difficult to interest their managerial colleagues in completing the evaluations unless the managing director issues a direct command to do so. Systematic individual performance evaluation simply is not a focus of attention for many managers.

Goal Conflicts in Foreign-local Joint Ventures
The labor scarcity has two important implications for foreign joint venture partners.

The first is a potential conflict of goals between foreign and local-state company managers planning a joint venture. Private companies and joint-ventures with foreign private companies do not face ceilings on wages and so can usually solve their labor scarcity problem by paying higher wages. Therefore, many managers of state-owned enterprises see the joint venture as an opportunity to raise wages, because they face a ruinous drain of their best employees to the private sector (and, of course, would like to see their own salaries raised). They see the foreign joint venture partner as a source of capital and as providing relief from onerous governmental restrictions. These needs are so pressing that local managers may not fully consider the fundamental changes that will be required in a joint venture.

The second implication is that scarcity in labor of skilled professional and managerial employees (especially those who speak English) will worsen in the next few years as more investment capital pours into these countries. For skilled professionals, wages are rising very rapidly, so investors must stay apprised of current pay rates and plan for significant inflation, especially in the pay of managerial employees.

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Human Resources Practice #2: Substantial "Pay-At-Risk"
As a result of both debilitating labor shortages and the fact that in these enterprises it used to be virtually impossible to fire workers, a complex monetary bonus system was developed in communist enterprises. Under this system, bonuses may range from zero to 200 percent of an employee's base salary. The largest percentages were usually reserved for managers, but workers at even the lowest wage levels in most Hungarian enterprises have grown to expect yearly bonuses up to forty percent of their base pay. Experienced managers will recognize that this is much more than the usual two to seven percent differentials in capitalist-system merit pay systems. These bonuses are usually given at the sole discretion of the immediate supervisor or of a committee which includes party officials. Because performance pressures are weak, rarely are these large bonuses tied to clearly defined performance objectives. In a society where the average salary is $200 a month, most families need this additional money just to survive, so these bonuses have become very important to employees.

As a result of both debilitating labor shortages and the fact that in these enterprises it used to be virtually impossible to fire workers, a complex monetary bonus system was developed in communist enterprises. Under this system, bonuses may range from zero to 200 percent of an employee's base salary.

The Communist Personnel Practice Capitalist Executives Love
Although this "conventional pay system" grew out of the distorted economic conditions of the previous political system, newly established private enterprises have been quick to adopt it. Even the non-governmental educational institution where I worked used it for the Hungarian faculty members (but wisely decided that the foreign faculty probably would not find it attractive). Yet what appears to be a very powerful set of incentives for performance motivation has had the perverse effect of establishing a relationship between supervisors and subordinates characterized by continuous bargaining and distrust.

Maybe there is a Reason why Companies Don't Really Pay for Performance
Conventional Hungarian managerial wisdom held that workers get their salaries for just showing up (and sometimes even that was not required), but if their supervisors wanted them to do any work, the supervisor must "pay" for it. As an illustration, a personnel director in a large industrial products company recounted that he wanted to revise one of his company's personnel systems and so convened a task force of his subordinates and representatives of affected departments to draft the new system. No overtime work was required; this would be considered a normal job assignment in the United States. Yet the personnel director said that his subordinate would not agree to work on the task force unless she was given a monetary bonus for this extra assignment. He said this was not an unusual situation but continued to be the normal expectation in all industries. So managers have learned that they must always "hold some of the bonus money back" for unexpected demands, and employees know of this reserve so they continuously strive to gain more through bargaining.

Continuous Supervisor-subordinate Bargaining
Managers and their subordinates find that they must continually haggle over job assignments and payments. Subordinates believe that this is the only way to get their "fair shares" of the bonus money, and since many managers spend their reserves in these small contracts, the employees may be right. Managers and subordinates grow to distrust one another, and the acrimonious bargaining reinforces the distrustful relationships. Although this system grew out of economic conditions that are no longer pertinent to most managers and employees, it has become the normatively accepted relationship between boss and subordinate and so continues, functionally autonomous from its origins.

In addition to the inertia rooted in expectations, this disagreeable situation seems also to be reinforced by the absence of concrete *a priori* criteria established for bonus payments. Only very recently have some state-owned enterprises begun tying executives' bonuses to enterprise earnings. Evidence for the importance of clear performance criteria is provided by the experience of a private

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Japanese-Hungarian joint venture which also used large bonuses but had clear performance measures (as well as clear minimum standards with termination for any employee who could not reach them); this joint venture did not have the continual employee-supervisor bargaining and distrust described previously. It is ironic that a major supervisory complaint of Hungarian managers (constant haggling with subordinates) apparently could be alleviated by the formal performance appraisal systems that they are too busy to implement.

Management-by-special-favors
Finally, there is another kind of individual incentive that deserves mention. This is the practice by which managers turn a blind eye to employees' use of organizational resources for their own purposes and to their absenteeism. As is common in market-driven companies, many managers (particularly first-level supervisors) find that they can expand their available incentives by allowing deserving employees to "break the rules." For example, Sayles[2] argued that nothing legitimatizes a supervisor more than the ability to "successfully buffer" subordinates from outside demands, a process that may involve "covering up for them." One way in which managers can reward their best employees is by condoning these small illegitimate activities.

Although cheating and stealing certainly are familiar to managers in all countries and may be no more prevalent in state-dominated economies than in others, they do carry a different moral tone in countries emerging from communist control. Recall that Hungary had a political regime imposed on people against the popular will, and its totalitarian character meant that enterprises were harnessed for political control as well as the production of goods and services. Under these circumstances, cheating could be a form of heroic resistance. When rules were immoral, rule breaking became a moral act.

The fact that recent "prisoners" have been elevated to prominent governmental positions in Czechoslovakia and Poland on the basis of their widespread moral authority helps illustrate that rule breaking can have a more ambiguous interpretation in Eastern bloc countries. Of course, much of the cheating and stealing that takes place in Eastern bloc enterprises is done for the same narrow self-serving reasons as anywhere else.

Further ambiguity is introduced by the widespread resentment of the favors formerly extracted by party members and their allies. That is, a large portion of the misused enterprise resources went to party members and their good connections. Previously, fellow employees felt compelled to watch these practices in silence, but no longer. Thus, Hungarian managers and employees are moving out of a climate in which cheating was an acceptable form of resistance against detested bosses and unofficially, yet openly, tolerated for the politically favored.

Interestingly, Hungary's well-developed private economy may have exacerbated the complex emotional reactions many have to small-scale favors. With wages so low, most Hungarians long have held second and even third jobs in the private economy. With some notable exceptions, managers and employees at all levels have jobs on the side. With the widening freedoms for private enterprise, many professionals and managers in state-controlled industries with low barriers to entry (for example, computers) have become entrepreneurs running companies that sometimes directly compete with their first-job employers. (Hungarian entrepreneurs routinely retain their state-sector first-jobs for the job security, access to connections, and resources these jobs provide.) Thus, a resentful subordinate begins to whisper that the department head uses the enterprise vehicles to make deliveries for his pub. Colleagues wonder whether a manager's recommendation reflects his first- or second-job interests.

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Even the state-owned enterprises routinely accept "second jobs" (private contract work). This allows them to increase employee compensation (contract work is not considered in wage ceilings) and provides revenue for capital improvements or new ventures. Yet, again, the presence of "state work" and "private work" in the same company creates powerful incentives to misuse state resources. I drove for some kilometers behind a large diesel delivery truck for one of the prominent state-owned enterprises that was towing a small private car—a very unlikely official business activity. Was the driver using the truck for his personal business or fulfilling a private contract for the enterprise?

Should Foreign Managers Cheat Too?
Some have argued that western joint venture managers must get along by going along with such local customs, no matter how personally repugnant.[3] Yet my observations suggest that this is a very risky practice. This management-by-special-favors and misuse of employer resources (or imagined practice based on the recent past) has a pernicious effect on interpersonal relations. While simultaneously bargaining for their own "favors" or rewards, co-workers resent the apparent special favors colleagues receive. It may be that the manager is simply acting to maintain internal equity for truly performance-justified reasons, but the secrecy in which it occurs breeds suspicion. Sometimes colleagues suspect a special favor when none has been given. When theft is tolerated, it is not clear whether or not this is justified compensation or the actions of a few bad individuals. Because bonuses and favors alike are given privately and are based on personal appeals and bargains, everyone suspects that someone else is getting a better deal, which fuels an escalating spiral of distrust. If managers want to prevent their subordinates from cheating them, they would be wise to become models of scrupulously honest behavior.

There is another reason to avoid these practices. Many observers believe that the overwhelming electoral defeats which have surprised the Communists stem from resentment at these corruptions in the workplace. Since foreign businesses in any country face potential scapegoating from resentful locals, adopting the more offensive practices of local elites may not be prudent.

Human Resources Practice #3: Promotion-through-Connections
In organizations without strong performance pressures, managerial positions become "awards" for loyalty or for having useful connections. As noted, it was the normal staffing practice to place loyal party members in executive positions. Under reform, this process initially accelerated.

Until very recently, many state-owned enterprises found that they were receiving so-called "parachutists"—party members in purely party or planning jobs who realized that they must secure a position in a company while they still retained some influence. Although this practice may have stopped with the waning of (Communist) party influence, most of these managers still retain their places. They may have the potential to be quite competent, but they have arrived illegitimately (in the eyes of their non-party subordinates and colleagues) and so face self-fulfilling expectations regarding their incompetence.[4] Parachutists' colleagues are further inflamed by their resentment of the damage the party has done to their economy, as well as past political abuses. This is not the sort of climate in which shared goals and mutual problem solving can be expected.

Another effect of this recent practice of promotion-through-connections is reflected in the following incident. At a management training retreat conducted for managers of a state-owned computer services enterprise, it was surprising to see one of the computer center managers toadying to the personnel director who was visiting on the final training day. He hung around the director whenever he could, and his previously aggressive demeanor turned sweet and mild. I had admired

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this manager during the week as an aggressive fighter (even if he did step on a few toes). Yet now he followed this director around like a fawning puppy, literally waiting to be the last to see him at the end of the training. What could account for the starkly contrasting demeanors of this manager? Perhaps his first—the aggressive—demeanor was more authentic and he wanted to advance in the organization. However, the environment he perceived himself to be in was not one that rewarded displays of performance prowess, but rather one that rewarded toadying like a courtier. He apparently thought that the best way to get ahead in this computer services company was *not* to be aggressive in building markets for products (at which he might have been better) but rather to smile sweetly and serve as a handmaiden to the high-ranking. It may have been more visible because it has been particularly difficult for managers to demonstrate "loyalty" in these highly centralized organizations—loyalty to the supervisor is insufficient and opportunities to demonstrate loyalty to the truly powerful high-ranking executives are few. This manager's ingratiating behavior was very open, and so it would be plain to his colleagues and subordinates that he sought promotion by currying favor.

Management Jobs Discredited

Whether or not this manager had accurately analyzed the promotion criteria in his company, his behavior had the effect of delegitimizing him by suggesting that he only received his managerial position through toadying. Certainly it is possible to imagine that he may be professionally competent as well. What is worse, these actions have the larger systemic effect of delegitimizing all managers. Managerial activities are notoriously invisible to subordinates, and those at the bottom probably see only the most blatant currying—so they generalize that all managers get their jobs this way, which helps to fuel their resentment and distrust.

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Self-blame

Finally, in full circle, this hostility can be turned on oneself. Lövey[5] has described the deeply ingrained self-blame of some Hungarians. It can be seen as a reverse-image of the positive attributions to successful leaders described by Pfeffer.[6] He argued that we have a bias for seeking explanations for events in the actions and characters of individual people, rather than seeing events as the result of more abstract "structures," such as selection or reward systems. For example, when everything is going well the leader receives personal adulation, but when problems occur there is a rush to blame him or her personally. Consistent with this framework, some Hungarians attribute their economic problems and the dysfunctions and abuses of the last decades to national character traits. This unfortunate bias is probably exaggerated in a society where informal personal connections and relationships are so important.

Restoring Legitimacy

Although the political-economic system that led to these resentments has changed, the feelings of individuals change more slowly. The negative assumptions that many make about themselves, managers, and their work continue to be unexamined. Hostility and distrust appear to be the psychological residue of an imposed order in which one could accomplish work and make a decent life only through personal connections, appeals and bargains. Game theorists have argued that the rational response when one has been exploited is to be distrustful in all future exchanges.[7] Distrust breeds future distrust in a stable, self-perpetuating system. That is, even though most state-controlled enterprises are beginning to change their promotion criteria and making incentives contingent on performance, the pre-existing expectations and assumptions slow the acceptance and effectiveness of these new practices.

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Human Resources Practice #4: Ambiguous Responsibilities
Finally, individual responsibility has been significantly more uncertain in Hungarian enterprises than in their capitalist counterparts. The traditionally hidden character of much of decision making in highly centralized state-controlled enterprises fosters ambiguous responsibilities. Many managers know very little about what their colleagues or bosses do or about others' goals and pressures. Unfortunately, some even feel that it is not their responsibility to understand these things.

Truncated Lateral and Downward Communication
In many of these large enterprises, managers have had little opportunity to understand their colleagues' problems, because communication has tended to be predominantly vertical with only informal communication across departments. Lateral problems could only be solved by special appeals to higher level authorities, and frustrated employees could only blame vague "top bosses."

Further, downward communication traditionally has not been open; rather, managers have tried to maintain their highly centralized power by withholding information from subordinates. Even high-ranking managers often did not understand the reasons behind directives from on high. It isn't surprising that insufficient information from higher levels was the universal complaint of Hungarian managers and employees.

Widespread Avoidance of Responsibility
Conversely, managers complained that their subordinates "avoid responsibility." I asked one manager who had spent several months working in a company in the United Kingdom what he found "most surprising" about the capitalist workplace. He replied that it was that the employees and managers worked so independently—that they initiated action on their own and yet knew when to ask questions.

Again, these problems of ambiguous responsibility are derived from the historical use of enterprises to control. Recall that individuals effectively organized in opposition to the regime in enterprises are a potential potent political threat, as illustrated by the political power of labor strikes in Poland and the Soviet Union. Further, if executives gained their jobs through party connections, not through technical expertise, they were loath to display their ignorance. Finally, when virtually the entire economy of a country is "centrally organized," a large complex bureaucracy is created, making it difficult for middle and lower ranking members to understand who makes which decisions. These historically fostered ambiguities are reflected in four different patterns of workplace interpersonal behavior.

Feelings of Personal Impotence
One dysfunction is the routine assumption that only those at higher ranks (than oneself) can take corrective action. For example, on several occasions I observed the following: at meetings complaints were voiced and participants agreed that these were serious issues, yet the meetings broke up without anyone taking responsibility for a next step in addressing the problems. It was not that these meeting participants were prevented from taking responsibility—they worked in a "new" foreign-Hungarian joint venture—it just didn't occur to anyone to do it. So the problems remained and festered. Under these circumstances, foreign managers can easily fall into the position of taking on all the responsibility, to the detriment of their organizations and themselves.

Credentials as Substitutes for Performance
Under conditions of ambiguity, even when managers had the best intentions to make performance-based decisions, they often did not have the information to do so. Since state enterprise owners (ministries) traditionally were not interested in

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extracting information from their accounting systems regarding which lines of business or products were most profitable, these could not be the basis for decisions. Marketing functions, when they existed, were often handled by a foreign distributor (for export products) or by the executives in their spare time (for domestic products). So these organizations often lacked accurate, detailed information about customer preferences and changing market conditions. In practice, the only form of "individual merit" many managers could use was professional technical qualification, even if this was not particularly relevant to the job at hand. For example, a successful engineer in an oil industry enterprise who spoke English was placed in charge of the entire marketing function in this large organization—despite the fact that he had no experience in marketing. What was worse in the Hungarian context, he did not have the extensive network of personal contacts through which products would be marketed domestically. Several important customers were lost, and this formerly successful engineer left the enterprise.

Pervasive Distrust

The lack of clearly defined areas of responsibility also increases the distrust noted previously. An illustration of how these processes of personal bargains and ambiguity interact to produce distrust among shop-floor machinists is provided by Haraszti[8]:

Supplementary wages are our most frequent topic of conversation with the foremen. They have at their disposal a relatively large sum for the adjustment of individual wages. No one knows exactly how much, nor whether all or part of it is used up. The foremen's accounts never mention it, nor can you find any trace of it under either "deficits" or "outgoings" or in the official "bulletin of results." . . . The foremen, setters and inspectors never once mentioned the existence of supplements, and it was only some time after my arrival that I heard about it from old M. . . . Perhaps it is because no one knows anything precise about them. Only one thing is certain: the foremen resist paying supplementary wages. Each worker therefore concludes that if there are too many demands less will be left for him. . . . So each worker treats what he gets as a supplemental wage as a secret. . . . Information I got from other millers slipped out unawares in a moment of anger.

Imprecise Communication

But everyone wants to seem knowledgeable—so this face-saving shrug has developed in which no actual information is exchanged. This adaptation to prior political and practical circumstances is understandable, and it is also characteristic of many ingrown bureaucracies in other countries with their opaque jargon and long managerial apprenticeships.

An illustration of how these ambiguities are reflected in interpersonal communication practices is "the knowing shrug." The shrug is in response to a vague statement (preferably about the venality or stupidity of others) and communicates the message, "Well, sophisticated people like us know all about this, but what can one do about such things?" This kind of nonverbal communication best captures the widespread ambiguity in communications. For example, I had a great deal of difficulty getting a precise understanding of facts and events in many organizations. The answers were "perhaps," "I'm not sure," "We'll see." A manager said, "No one owns my company." Even presumably straightforward questions, such as, "Did the company council vote to break the regional divisions into limited liability companies at the last meeting?", were answered with a "Perhaps." When I aggressively pressed these managers for an American-style "straight answer," sometimes I received a long complicated story that really was best summarized as a "perhaps," yet other times it was clear that the manager really did not know the answer.

Under these circumstances, the wise individual has learned not to inquire too closely. Sometimes, finding out what is really going on is more exhausting than it is worth (and it used to be dangerous). But everyone wants to seem knowledgeable—so this face-saving shrug has developed in which no actual

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information is exchanged. This adaptation to prior political and practical circumstances is understandable, and it is also characteristic of many ingrown bureaucracies in other countries with their opaque jargon and long managerial apprenticeships. However, it leads to two serious practical management problems.

How Can You Manage When You Can't Find Out What's Going On?
First, two individuals having completely different understandings may never "check their perceptions" with one another and thus may make errant judgments which lead to anger, blame, and poorer performance. Second, since individuals become used to communicating imprecisely, it is difficult to determine who has done what and who is responsible for which decisions. It can become impossible to trace where problems have occurred and to correct them. Rather, the powerful person at the top must assume all blame, all responsibility. When problems become visible, these top managers may be removed, but the structure and behavior patterns that led to the malperformance remain in place.

Early Reform Increases Ambiguity
Enterprises are revising their information systems and responsibilities will be necessarily clearer in the smaller disaggregations that currently are being formed from large state conglomerates (at least, the highest ranking manager will be more visible in a smaller organization). Yet, some of the early reforms also seem to increase ambiguity. For example, many limited liability companies are being formed from the departments of a state enterprise which still retains ownership of its former departments. How much daily control is retained by the former central office executives? Are the "limiteds" required to use the central services, such as personnel, that are still retained with the former-central-office-now-owner? Opinions differ widely on these questions, and no doubt these fresh opportunities for bargaining will keep Hungarian managers busy. Foreign managers need to understand that when suppliers, customers, and their own managers say "they didn't know," they may, indeed, not know.

The Practical Business of Building More Effective Organizations
Until relatively recently political conditions in communist countries have not permitted extensive open debate about their organizations. As an illustration, in 1973, Haraszti was tried and sentenced to prison for the work quoted previously. Despite the new political openness, many managerial practices originating under the communist political systems have fostered functionally autonomous assumptions and attitudes that have been slower to change. However, this should not be read to imply that these patterns are immutable. As was noted, many Hungarian enterprises have successfully adapted and are prospering. Rather, an open recognition of such patterns is the initial basis for their change. Once openly acknowledged, dysfunctional behaviors and assumptions can be managed through widely available organizational development techniques.

What Foreign Managers Can Do
In many respects, this change is much easier for foreign-controlled organizations. Hungarians expect managers from capitalist countries to manage differently. They see the success of these foreign organizations and want to learn from them. However, the dysfunctional assumptions do need to be recognized and addressed. This work was intended to alert expatriate managers and investors to some of the difficulties they will face in reforming communist and former communist countries.

This description has highlighted some of the dysfunctions in state-owned companies. Because patterns of relationships become established and habituated in organizations, it will be more difficult to address these dysfunctions in on-going state-owned enterprises than in newly established organizations. While there may be many good strategic reasons for a foreign company to form a joint venture with a local state-owned company, changing the human resources practices and

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patterns of behavior will, by its nature and necessity, be more difficult than establishing those same practices and patterns in a newly created organization. Yet, even in new organizations, foreign managers will want to insure that their local colleagues do not inadvertently replicate familiar dysfunctional practices.

What Local Managers Can Do

Acknowledgement of the dysfunctions carried from the past is even more important for local managers in reforming and former communist countries. Because the patterns described here have been the norm in the past, they are less visible to those who have always lived with them. Yet recognition of the dysfunctions inherent in conventional human resources management practices is an important first step in correcting them.

Local managers face an additional serious problem. Because not many of these managers are used to assuming responsibility (since they could not realistically expect it before), some may happily let their foreign bosses assume responsibility. In Hungary today, state-owned companies are aggressively seeking foreign partners. I fear that for many it is not only for the tax and technological advantages but to find a new all-knowing, all-powerful "top boss" who will solve their problems for them. This is not only bad for the long-term development of Hungarian organizations, it is bad for the short-term career prospects of the local managers. Managers from profit-making companies expect all employees (and most especially their managers) to take the initiative and assume responsibility. Those who don't do so are tolerated as long as necessary and removed as soon as possible.

Endnotes

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[1] Readers interested in learning more about central planned economies should see J. Kornai, *Economics of shortage* (Amsterdam: North Holland, 1980), and J. Kornai, "The Hungarian Reform Process: Visions, Hopes, and Reality," *Journal of Economic Literature*, 24 1986, 1687-1737.

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GLOSSARY

Absorption (Full) Costing - The inventory valuation method used by a manufacturing firm in which all manufacturing costs are charged as product costs, regardless of whether or not they may change in relation to production levels.

Attainable Standards - Performance targets that can be achieved with a reasonably efficient effort.

Break-Even Point - The sales volume at which revenue and total costs are equal with no net income of loss.

Budget - A quantitative plan showing how resources are expected to be acquired and used during a specified time period.

Business Segmentation - The division of work into specialized units.

Capacity Variance - The difference between the budgeted manufacturing overhead for the standard production activity level attained and the standard amount of overhead applied to the work in process inventory.

Capital Budgeting - The process used to evaluate capital expenditures in a rational and systemic way.

Capital Expenditures - Expenditures for long-term assets used to establish the firm's capacity.

Committed Fixed Costs - Fixed costs that are required even if the operation is shut down temporarily.

Contribution Margin - The sales revenue less all variable costs.

Contribution Margin Rate - The contribution margin expressed as a percentage of sales.

Contribution Margin Variance Analysis - A technique used to evaluate the difference between the actual contribution margin for a given period and the contribution margin budgeted for the same period or one for a previous period.

Controllable Overhead Variance - The difference between the budgeted manufacturing overhead for the standard production activity level attained and the actual manufacturing overhead for the period.

Conversion Costs - The combined total of direct labor and manufacturing overhead costs incurred by a processing center.

Cost - An economic sacrifice of resources made in exchange for a product or service.

Cost Accumulation - The use of a job order costing system or a process costing system to record product costs with a perpetual inventory flow.

Cost Behavior - The measure of how a cost will react to changes in the level of business activity.

Cost Behavior - How a cost responds to changes in the level of business activity.

Cost of Capital (Hurdle Rate) - A firm's cost of obtaining funds in the form of debt and owners' equity.

Cost Driver - A measure of business activity that causes the incurrence of overhead costs.

Cost Function - The relationship between a cost as a dependent variable and some measure of the level of business activity as an independent variable.

Cost of Goods Manufactured Statement - A detailed accounting of the manufacturing cost performance reported on the income statement of a manufacturing firm.

Cost-Volume-Profit Analysis - A managerial accounting technique used to evaluate how costs and profits are affected by changes in the level of business activity.

Decision Making - Making a choice among alternative courses of action.

Decision Model - A formalized method for evaluating alternative courses of action.

Differential Analysis (Incremental Analysis) - A decision model used to evaluate the differences in relevant revenues and costs between alternative courses of action.

Differential Costs - The difference between the relevant costs of two alternatives.

Differential Revenue - The difference between the relevant revenues of two alternatives.

Direct Labor - The wages paid to employees whose time and effort can be traced to specific products.

Direct Materials - The raw materials that can be traced as an integral part of a finished product.

Discretionary Fixed Costs - Fixed costs that can be reduced or discontinued by management if adequate time is available.

Efficiency - Maintaining a satisfactory relationship between a firm's resource inputs and its outputs of products or services.

Effectiveness - How well a firm is able to meet its goals.

Equivalent Units - A measure of how many whole units of production are represented by the units finished plus the units partially finished in a process costing operation.

Expected Capacity - The level of production activity expected for a specific year, given the firm's operating conditions and market demand for its products.

Expense - An expired (or used up) cost.

FIFO Method - The flow assumption used with process costing in which beginning units and costs are kept separate from those of the current period.

Finished Goods - The cost of the products that have been manufactured completely and are ready for sale.

Fixed Cost - A cost that will remain constant in total amount over a wide range of business activity.

Fixed (Static) Budget - A budget prepared for one level of activity.

Flexible Budget - Series of budgets prepared for a range of business activity.

Goal Congruence - The reconciliation of the goals of individual managers with those of the organization.

Ideal Standards - Performance targets that can be achieved only with an optimal performance.

Internal Rate of Return (IRR) - The discount rate that will discount the cash flows associated with an investment so that the net present value is equal to zero.

Job Order Costing - A cost accumulation system in which costs are accumulated for a job.

Joint Products - More than one product produced from common raw materials or the same production process.

Joint Product Costs - Common costs required to produce joint products before they are identifiable as separate units.

Just in Time (JIT) Inventory System - A system in which inventory balances are not maintained. Instead, inventories are available just in time to be sold or used in the production operation.

Labor Efficiency Variance - A measure of the effect of a difference in the actual direct labor hours used and the standard direct labor hours that should have been used.

Labor Rate Variance - A measure of the effect of a difference in the actual labor rate paid workers and the standard labor rate that should have been paid.

Linearity Assumption - A key assumption of CVP analysis that all revenue and costs will behave as straight-line functions.

Manufacturing Cost Elements - The direct materials, direct labor, and manufacturing overhead required to product a salable product.

Manufacturing Firm - A business that converts raw materials into salable products.

Manufacturing Margin Rate - The manufacturing margin expressed as a percentage of sales.

Manufacturing Overhead - All manufacturing costs except direct materials and direct labor required in the production process.

Margin of Safety - The amount by which sales can decrease before a loss results.

Master Budget - A set of interrelated budgets representing a comprehensive plan of action for a specified time period.

Material Price Variance - A measure of the effect of a difference between the actual price paid for material and the standard price that should have been paid.

Material Requisition Form - A record of the amount of raw material requisitioned from the store room for a job or as indirect material.

Material Quantity Variance - A measure of the effect of a difference between the actual amount of direct material used and the amount of direct materials that should have been used.

Maximum Capacity - The highest level of production activity possible if optimal conditions exist.

Mixed Cost - A cost that has both a variable component and a fixed component.

Net Present Value (NPV) Method - A capital budgeting method used to discount future cash flows into present value terms with the firm's cost of capital or hurdle rate.

Normal Capacity - The average annual production activity that will satisfy the market demand over a relatively long time, such as three to five years.

Opportunity Cost - The potential benefit forgone by rejecting one alternative while accepting another.

Overapplied Manufacturing Overhead - The excess of the manufacturing overhead applied to work in process with a predetermined rate during a given period over the actual manufacturing overhead incurred.

Overhead Application Rate - A rate used to assign manufacturing overhead costs as product costs.

Payback Period Method - A measure of the length of time required to recover the cost of an investment from the net cash inflows it generates.

Period Costs - Costs charged to the income statement of the period in which they are incurred, rather than being inventoried as product costs.

Practical Capacity - The maximum production capacity of a firm less reasonable allowances for departures from an optimal performance.

Predetermined Overhead Rate - The rate determined by dividing estimated manufacturing overhead for a period by some measure of the estimated production activity and used to apply overhead to work in process.

Process Costing - A cost accumulation system with which costs are accumulated for a processing center during a specified period of time.

Product Costs - Costs inventories as assets during the production process and charged to the income statement when the related finished goods are sold.

Profitability Index (PI) - The present value of the net cash inflows from an investment divided by the cost of the investment.

Raw Materials - The cost of the basis materials and parts that have been purchased by a manufacturing firm and are available for conversion into salable products.

Relevant Costs - Expected future costs that will differ between alternatives.

Relevant Range - The range of activity within which a business expects to operate and incur variable costs with constant slopes, as well as fixed costs that are constant in total amount.

Relevant Revenues - Expected future revenues that will differ between alternatives.

Residual Income (RI) - The net operating income earned in excess of a certain minimum rate of return on operating assets.

Return on Average Investment Method - A capital budgeting method that provides a rough approximation of an investment's profitability, in terms of net income from the income statement.

Return on Investment (ROI) Analysis - A technique used to evaluate the profitability of segments of a business or of the business itself.

Split-Off Point - The point in the production process at which joint products become separate products.

Standard Costs - Carefully predetermined costs that should be incurred to produce a product or perform an operation.

Standard Cost Variance - The difference between standard costs and actual costs, which can be used in the application of management by exception.

Sunk Costs - Costs that are not relevant in decision making, because they have already been incurred and cannot be changed.

Tax Shield - The total amount of a tax-deductible expense, such as depreciation, that shields that amount of revenue from being taxed.

Transfer Pricing - The prices charged by one segment of a decentralized firm for products or services transferred to another segment.

Unavoidable Costs - Either future costs that will not differ between alternatives or sunk costs.

Underapplied Manufacturing Overhead - The excess of the actual manufacturing overhead incurred during a particular period over the manufacturing overhead applied to work in process.

Variable Cost - A cost that will vary in total amount proportionately with some measure of business activity.

Variable Costing - The inventory valuation method used for internal reporting purposes by a manufacturing firm. Only variable manufacturing costs are charged as product costs with this method.

Variance - A measure of the difference between a planned financial performance and the actual results achieved.

Weighted Average Method - The flow assumption used with process costing in which the beginning units and costs are combined with those of the current period.

Work in Process - Inventory that has been partially converted into finished products.