

**Investment Promotion Sectoral Strategy 2005-2007:  
Pharmaceuticals**

Final Report

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## ABSTRACT

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This report evaluates Jordan's competitive position in the global pharmaceuticals industry and develops a three-year strategy to promote inward investment in the sector for implementation by the Jordan Investment Board.

## ABBREVIATIONS AND ACRONYMS

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AMIR	Achievement of Market-friendly Initiatives and Results Program
ASE	Amman Stock Exchange
CIS	Commonwealth of Independent States (former Soviet republics)
DDI	Domestic Direct Investment
DPCO	(India) Drugs Price Control Order
EGA	European Generics Manufacturers Association
EJADA	Euro-Jordanian Action for Development
EMEA	European Agency for the Evaluation of Medicinal Products
EU	European Union
EU-GMP	European Good Manufacturing Practice
FDA	(U.S.) Food & Drug Administration
FDI	Foreign Direct Investment
GLP	Good Laboratory Practice
GMP	Good Manufacturing Practice
IDA Ireland	Industrial Development Authority of Ireland
IPR	Intellectual Property Rights
IT	Information Technology
ITF	Investment Task Force
JAED	Jordanian Authority for Economic Development
JAPM	Jordanian Association of Pharmaceutical Manufacturers
JEDCO	Jordan Enterprise Development Corporation
JIB	Jordan Investment Board
JISM	Jordan Institute of Standards and Metrology
JUSFTA	Jordan-United States Free Trade Agreement
JV	Joint Venture
MCA	(U.K.) Medical Control Agency
MENA	Middle East and North Africa (Region)
MIT	(Jordan) Ministry of Industry and Trade
MNC	Multinational Corporations
MOH	(Jordan) Ministry of Health
MPA	(Sweden) Medical Products Agency
NCE	New Chemical Entities
PNA	Palestinian National Authority
PSPI	Private Sector Policy Initiative
QIZ	Qualifying Industrial Zone
R&D	Research and Development
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TBT	Technical Barriers to Trade
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UK	United Kingdom
US	United States
USAID	United States Agency for International Development
USDOC	United States Department of Commerce
WTO	World Trade Organization

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**TABLE OF CONTENTS**


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Data Page .....	ii
Abstract .....	iii
Abbreviations and Acronyms .....	iv
Table of Contents .....	v
Tables and Figures .....	vi
Executive Summary .....	1
CHAPTER 1: Introduction .....	3
1.1 Background .....	3
1.2 Objective .....	3
1.3 Methodology .....	3
CHAPTER 2: Sector Overview .....	6
2.1 Pharmaceuticals Sector in Jordan .....	6
2.2 Global Pharmaceutical Industry .....	14
2.3 Regional Pharmaceutical Industry .....	22
CHAPTER 3: Sector Analysis .....	26
3.1 Investment Location Criteria .....	26
3.2 SWOT Analysis .....	27
3.3 Competitive Benchmarking .....	30
CHAPTER 4: Recommendations .....	33
4.1 Subsectors and Niches .....	33
4.2 Outlook for Future Investment and Trade .....	35
4.3 Constraints and Remedies .....	36
CHAPTER 5: Three-year Promotional Strategy .....	39
5.1 Core Message .....	39
5.2 Main Selling Points .....	39
5.3 Target Markets .....	39
5.4 Target Investors .....	40
5.5 Annual Investment Targets .....	41
5.6 Resource Requirements .....	41
5.7 Knowledge Requirements .....	42
5.8 Promotional Approaches .....	42
ANNEX 1: List of Interviews Conducted .....	46
ANNEX 2: Summary of Meetings with Selected Pharmaceutical Companies in Ireland .....	47
ANNEX 3: Minutes of Stakeholders Meeting .....	49
ANNEX 4: Content of New Promotional Brochure .....	50
ANNEX 5: Sample Introductory Letter to Investors .....	52
ANNEX 6: Sample Letter to Local Companies .....	53
ANNEX 7: Relevant Industry Associations .....	54
ANNEX 8: Relevant Publications .....	56
ANNEX 9: Relevant Web Sites .....	58
ANNEX 10: Relevant Databases .....	60
ANNEX 11: Local Pharmaceutical Companies .....	61
ANNEX 12: Top Ten Global Pharmaceutical Companies .....	63
ANNEX 13: Global Generic Pharmaceutical Companies .....	66
ANNEX 14: JAPM-AI Razi Merger Press Release .....	68
ANNEX 15: Presentation for Stakeholders Meeting .....	70

## Tables and Figures

Table 1.1: ISIC Codes of Pharmaceutical Products.....	3
Table 2.1: Jordan’s Top Five Exports (2002).....	6
Table 2.2: Growth of Jordan’s Pharmaceuticals Exports (1999-2002).....	6
Table 2.3: Top 10 Global Pharmaceutical Firms (2002).....	16
Table 2.4: Global Pharmaceuticals Markets by Region (2002).....	16
Table 2.5: Top Global Pharmaceuticals Markets by Country (2002).....	17
Table 2.6: Top Five Drugs Worldwide.....	17
Figure 2.1: Activity by Company Type (As % of sales).....	19
Figure 2.2: Purchase of Drugs by Israeli Customers.....	23
Figure 2.3: Saudi Pharmaceutical Imports.....	24
Table 3.1: Competitiveness of Jordan’s Pharmaceuticals Sector.....	31
Table 3.2: Supporting Strengths and Countering Weaknesses.....	32
Table 4.1: Recommended Target Matrix.....	35
Table 4.2: Constraints to Growth of Pharmaceuticals Industry in Jordan.....	37
Table 5.1: Profile of Ventures Attractive to Targeted Investors.....	40
Table 5.2: Suggested Annual Investment Targets.....	41
Table 5.3: Annual Promotion Budget.....	41
Table A.1: Pharmaceutical Trade Associations and Information Portals.....	54
Table A.2: Pharmaceutical Trade Publications.....	56
Table A.3: Web Sites Relevant to Pharmaceutical Industry Research.....	58
Table A.4: Local Pharmaceutical Companies.....	61
Table A.5: Top Ten Global Pharmaceutical Companies.....	63
Table A.6: Global Generic Pharmaceutical Companies.....	66

## EXECUTIVE SUMMARY

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This report describes initiatives to support the Jordan Investment Board (JIB) in its efforts to promote foreign direct investment (FDI) to the domestic pharmaceuticals industry, and formulates a new three-year marketing strategy for the sector.

Jordan's pharmaceuticals manufacturing industry has modern and well-equipped manufacturing facilities, as well as well-educated and skilled staff. Most companies export to across the region, and a number of them have achieved international certification, enabling them to sell products in non-traditional markets. However, many of the smaller companies lack sales and marketing expertise, as well as the financial backing they would need to enter lucrative global markets such as the European Union (E.U.) and the United States (U.S.).

The current consolidation of the global pharmaceuticals industry makes it unlikely that enough new products will emerge over the next three to four years to ensure the survival of all major producers as independent entities. At the same time, most drug research has migrated to the U.S., in an effort by producers to cut costs. A third notable trend is the interest of E.U. companies in relocating their manufacturing bases to Eastern European countries, as well as India.

An analysis of the strengths and weaknesses of Jordan's pharmaceuticals industry suggests the country can differentiate itself from competitors on the basis of its skilled workforce, state-of-the-art pharmaceutical plants and reliable infrastructure, and the best intellectual property rights (IPR) laws in the region. In terms of labor costs, Jordan is less expensive than Israel, Turkey, and Saudi Arabia, but more expensive than Egypt and India. Jordan also scores well on taxation rates and double taxation agreements, but still needs to conclude double taxation agreements with a number of European countries.

The main weaknesses of Jordan's pharmaceuticals industry are its small and fragmented local market, the lack of direct government incentives for research and development (R&D), and its underdeveloped cluster of supporting institutions and supplier networks. The main consequence of these weaknesses is to limit Jordan's desirability as a destination for stand-alone investment, as it is hard to achieve economies of scale. This is not the case in other locations, such as India.

Jordan does have competitive advantages in existing product areas, such as antibiotics and anti-ulcerants, and in new niches, such as the production of hormones, anti-AIDS and anti-cancer drugs, biotechnology drugs, and herbal medicines. There is also a potential to target investment in new dosage forms, such as injectables, and selected phases of clinical studies.

In most of these areas, the focus for growth would be on generic products, except in special instances where ethical or branded prescription drug manufacturers might find it economically beneficial to outsource selected products to low-cost producers in order to fill the demand for affordable drugs in epidemic-stricken countries.

In summary, the following factors make Jordan an attractive destination for FDI and the manufacturing of pharmaceuticals under contract.

- Low risk on investment because of high-quality, existing production facilities
- Highly-skilled, low-wage workforce
- Zero tax on profits generated by drug exports
- High standards of local producers
- Strong legal protection and enforcement to protect IRP
- Extensive regional export base

- Favorable perception of Jordanian product quality
- Existence of toll and contract manufacturing law
- Relatively developed infrastructure for industry

Other selling points that that could enhance Jordan's compatibility with a specific target export market are the existence of a Bolar provision, which enables development work on a generic equivalent of a patented medicine to start prior to the expiration of the patent, and the country's proximity to Africa and South Asia, which offers opportunities to produce products for these markets, such as vaccines and anti-AIDS drugs.

Future efforts to promote investment should target European manufacturers of generic drugs. In later years, this focus can be expanded to include other manufacturers of generics, especially of hormone and anti-cancer drugs, as well as ethical producers of anti-AIDS drugs in the U.S.

Jordan, by adopting the three-year targets and plan laid out in this report, can attract at least seven new opportunities for investment per year, adding 825 new jobs and as much as \$42 million in new FDI and \$7.5 million in new contract or under-license production over the period.

## CHAPTER 1: INTRODUCTION

### 1.1 Background

The global, multibillion-dollar pharmaceuticals industry is large and growing, and is dominated by fully-integrated American and European companies. As an innovation-based industry, its long-term growth is driven by substantial investment in drug R&D, which leads to the periodical launch of new drugs.

Over the past few years, Jordan's pharmaceutical exports have grown quickly, but other components of the country's pharmaceuticals cluster have not developed at the same pace.<sup>1</sup>

#### Industry Definition

The products of the pharmaceuticals industry cover a large number of therapeutic classes, two markets – prescription and over-the-counter (OTC) drugs, and the following three product categories.

- Branded pharmaceuticals: ethical drugs that are manufactured under patent by large ethical pharmaceuticals firms that do all the original R&D
- Generic drugs: copies of patented drugs that are launched after the patent expiration (usually at much cheaper prices) by generics manufacturers
- Branded generics: Generic drugs launched by ethical pharmaceutical manufacturers, such as Novartis and Merck & Co.

The International Standard Industry Classification (ISIC) system codifies pharmaceuticals under division 24 of the manufacturing sector (D). See Table 1.1 for further information.

**Table 1.1: ISIC Codes of Pharmaceutical Products**

Division	Group	Class	Description
24			Manufacture of chemicals and chemical products:
	242		Manufacture of other chemical products:
		2423	Manufacture of pharmaceuticals, medicinal chemicals and botanical products, including:
			Manufacture of medicinal active substances
			Manufacture of medicaments
			Processing of blood
			Manufacture of chemical contraceptive products
			Manufacture of dental fillings and bone reconstruction cements
			Manufacture of medical diagnostics preparations
			Manufacture of botanical products for pharmaceutical use

Source: United Nations Statistics Division<sup>2</sup>

### 1.2 Objective

The objective of this consultancy is to work together with JIB to evaluate the competitive position of Jordan's pharmaceuticals sector, especially in light of global trends and changes in the industry, and to develop an appropriate three-year inward investment promotion strategy.

### 1.3 Methodology

This assignment was divided into two phases. The first phase involved reviewing the status of the Jordanian pharmaceutical industry and activities undertaken by JIB to promote pharmaceutical investment, assessing Jordan's attractiveness as an investment location,

<sup>1</sup> AMIR Program, "The Jordan Pharmaceutical Cluster: Analysis and Recommendations" (July 2002)

<sup>2</sup> <http://unstats.un.org/unsd/cr>

according to the main investment criteria used by international pharmaceutical companies, and recommending ways to better target and attract foreign direct investment.

It also involved exploring the interest of international pharmaceutical companies in Jordan as a site for investment, installing an investor database system at JIB and training its staff in its effective use, and assisting JIB to prepare for a promotional event. (Unfortunately, for reasons outside the control of the consultant, JIB's participation in the promotional event was not possible.)

The results of this phase were presented and discussed in a workshop held at JIB offices. Present at the workshop were representatives from local manufacturers, research centers, and pharmaceutical associations, as well as the Director General of JIB and selected staff. See Annexes 15 and 4 for the presentation that was delivered and the minutes of the meeting.

The second phase of the assignment involved a review of the local industry; a summary of international and regional investment trends; an analysis of the Strengths and Weaknesses, Opportunities, and Threats (SWOT) for the local industry; the identification of competitive product and market niches; the identification of constraints that impede the growth of the local industry; and the creation of a three-year promotional plan that incorporates Jordan's main selling points, target markets, profiles of potential investors, investment targets, and targeting tools and resources.

The methodology used in this study includes, but was not limited to, the following.

- Desk research on local, regional, and global trends in the pharmaceuticals industry, including a review of the literature mentioned in the consultant scope of work
- Interviews with selected stakeholders in the local market (See Annex 1 for further information.)
- Interviews with representative potential investors in the international market (See Annex 2 for further information.)
- SWOT analysis of the pharmaceuticals industry in Jordan

The focus of this study is to identify niche products and markets for FDI attraction, as well as to provide JIB with a practical promotional plan to approach potential investors. The study is not meant to be a sectoral study. Therefore, the sectoral analysis component of this study serves only as a means to identify target markets and provide profiles of potential investors who may be attracted to invest in Jordan.

Starting with an overview of the pharmaceuticals sector in Jordan, the study identifies existing trends in investment and trade, existing market access agreements, major players in the local market, current levels of operational costs and efficiency issues, as well as available technology and technical expertise.

Secondly, a review of the global pharmaceuticals industry is performed to determine trends in the global industry and to identify major importers and exporters. It is then followed by a brief discussion of the major regional players in this industry with the aim of identifying the additional potential for FDI in Jordan from within the region.

These local, global, and regional overviews are then used as the basis for a SWOT analysis of the sector in Jordan, the results of which are presented in comparison with other competitors in the global market. Based on this analysis, product and market niches in which Jordan has advantages over its competitors are identified and recommendations are made regarding the product types which JIB should target.

Finally, a three-year promotional strategy is developed that includes the following.

- Core message and selling points
- Identification of target markets and profiles of target investors
- Promotional approaches for JIB to follow in its targeting efforts
- Annual investment targets
- Resource requirements to prepare and execute promotional plans
  - Research tools
  - Personnel
  - Budget

## CHAPTER 2: SECTOR OVERVIEW

### 2.1 Pharmaceuticals Sector in Jordan

#### Demand Conditions: Trade and Investment Trends

Pharmaceuticals production is one of Jordan's largest and most significant industries, generating almost 20 percent of the country's gross domestic product (GDP) from manufacturing, or around JD190 million in 2002.

Its importance also stems from the fact that it is Jordan's only significant "next-generation" industry, as well as the fact that it is driven by exports. It is also "home-grown," with no substantial foreign investment to date (unlike garments, the country's top export), and is not based on natural resources, like potash, phosphates, and vegetables (the country's third, fourth, and fifth largest exports).

Jordan currently exports approximately 70 to 80 percent of its total pharmaceuticals production. As can be seen in Table 2.1, pharmaceutical exports were the country's second largest in 2002, accounting for around 10 percent of total exports and outstripping traditional resource-based commodities, such as potash and phosphate.

**Table 2.1: Jordan's Top Five Exports (2002)**

Commodity	Value (JD million)	Total Exports (%)
Textiles and clothes	374.6	24.2
Pharmaceuticals	142.7	9.2
Potash	136.7	8.8
Phosphate	96.5	6.2
Vegetables	95.2	6.1

Source: Department of Statistics

Furthermore, Jordan's pharmaceutical exports have been growing over time. These exports have more than tripled over the past 10 years. In particular, they have grown at an average rate of approximately 12.4 percent per year over the period 2000-2002, as can be seen in the following table.

**Table 2.2: Growth of Jordan's Pharmaceuticals Exports (1999-2002)**

	1999	2000	2001	2002
Total Exports (JD million)	101	111	130	143
Growth rate (%)	-	10	17	10

Source: Central Bank of Jordan

Arab countries are the main export destination for Jordanian pharmaceuticals, with 98 percent of total exports going to these markets. Of these, Algeria, Iraq, and Saudi Arabia account for the bulk of exports, nearly two thirds in 2002.

This creates a problem for Jordan of dependence on a volatile regional market. Recent regional events, especially the war in Iraq and its aftermath, affected 2003 exports. In the first ten months of 2003, pharmaceutical exports declined 11 percent to JD108 million from the same period in 2002, which saw exports of JD122 million.

This relatively small decrease in exports in a time of intense regional turbulence is a testament to the resilience of Jordan's pharmaceuticals industry: the substantial loss of one of the country's three main export markets reduced exports by hardly a tenth at its worst. Further evidence of this adaptability is that some manufacturers are already exporting to the European market: United Pharmaceuticals, for instance, exported \$50 million worth of generic drugs to the German market in 2002.

Most pharmaceutical imports, on the other hand, come from European countries. In 2002, pharmaceutical imports reached JD125 million, of which around two thirds came from European countries such as Germany, the United Kingdom (U.K.), Switzerland, and France. Pharmaceutical imports are of therapeutic classes that are not produced locally, such as cancer-treatment drugs.

The size of the local market, or total local demand, was around JD175 million in 2002, with imports satisfying some 70 percent of local demand and local production satisfying the balance.

Driven by the appreciation of the euro, the value of Jordanian pharmaceutical imports increased 21 percent in the first ten months of 2003 to JD126 million, compared to JD104 million in the same period of 2002. Thus, Jordan's JD18.3 million surplus in pharmaceuticals trade in 2002 was reversed to a JD18.5 million deficit in the first ten months of 2003, making the country a net importer of pharmaceuticals for the first time since 1999.<sup>3</sup>

As for the types of medication produced, 95 percent of locally manufactured drugs are generic. The remaining five percent are produced under license for sale in the Middle East.

Total investment in the sector reached \$400 million by 2002. The industry is wholly owned by the private sector, and ownership is almost exclusively Jordanian. FDI in the Jordanian pharmaceuticals sector is negligible, with the exception of the acquisition of a 21 percent stake in Pharma International Company by U.S.-based Schein Pharmaceuticals, a subsidiary of Watson Pharmaceuticals of California, the country's second-largest manufacturer of generic drugs. Pharma International now has an FDA-standard plant near Amman that produces a range of generics. Most of the other foreign brands produced in Jordan are manufactured under license, without major investments by the licensors.

### **Market Structure and Competition**

The Jordanian pharmaceuticals industry has a fair level of competition, with 17 manufacturers, six of which are listed on the Amman Stock Exchange (ASE). All are eager to gain entry to new export markets and are striving to capture a greater share of the small domestic market.

Prior to 1990, there were only six pharmaceutical manufacturers in Jordan. The increase in the number of manufacturers between 1991 and 1999 was primarily driven by the hope of new entrants to tap into the seemingly lucrative export markets for generic drugs that their predecessors had penetrated. These opportunists did not anticipate Jordan's accession to the World Trade Organization (WTO), which took place in April 2000, and the consequent requirements of adhering to stringent IPR and patent laws.

### **Firm Structure and Rivalry**

The Achievement of Market-Friendly Initiatives and Results (AMIR) Program's recent study of the local pharmaceutical cluster suggests that firm structure in Jordan is weak by international standards, and while pharmaceutical factory size varies, it is often considered to be below the scale needed for minimum efficiency.<sup>4</sup>

Average investment in a plant producing generic drugs in Jordan varies from \$4 to \$40 million, which is well below averages in the U.S. and Europe, and represents a low barrier to entry which partially explains the large number of firms.

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<sup>3</sup> Central Bank of Jordan, "Monthly Statistical Bulletin, December 2003"

<sup>4</sup> AMIR Program, "The Jordan Pharmaceutical Cluster: Analysis and Recommendations" (July 2002)

Strong firm rivalry, however, has proved to be good for innovation. Furthermore, when coupled with Jordan's WTO accession and the consequent opening of markets, it is driving firms to shape up or face demise.

The total sales for all Jordanian pharmaceutical firms, both at home and abroad, amounted in to JD195 million in 2002, of which 74 percent was exported. Three companies, each with average annual sales of at least JD25 million, dominate local production: Hikma Pharmaceuticals, Arab Pharmaceutical Manufacturers (APM), and Dar Al Dawa (DAD).

Jordan Pharmaceutical Manufacturing (JPM) and United Pharmaceuticals (UPM), each with total sales of JD9 million in 2002, are arguably the sector's only two medium-sized companies. Taken together, these five companies represent around 85 percent of total industry sales and are responsible for around three quarters of the total sales of domestically produced pharmaceuticals. The other 12 companies are small, each with an average of total annual sales of less than JD4 million over the past three years.

Intense domestic competition and excess capacity, coupled with the stringent regulatory regime required for protection of intellectual property rights by the WTO (TRIPS) and the Jordan-U.S. Free Trade Agreement (JUSFTA), is pushing the industry toward consolidation and beginning to squeeze smaller producers out of the market.

The first merger of two privately owned Jordanian companies – Rawhi Pharmaceutical Industries and Al Kindi Pharmaceutical Industries – took place in 2000. The resulting company is currently operating under the name of Al Kindi Pharmaceutical Industries. The second merger between the publicly listed Al Razi Pharmaceutical Industries (RAZI) and the privately-owned Jordanian Pharmaceutical Manufacturing (JPM) was approved in late 2003. According to JPM, the new company will be listed on ASE and will operate under JPM's name with a total paid up capital of JD16 million. (See Annex 14 for further information.) In April 2003, DAD signed a memorandum of understanding with APM to develop joint factories in Egypt and Algeria. Finally, in November 2003, the shares of both APM and Advanced Pharmaceutical Industries (ADPH) were suspended from trading at ASE after they announced their plans to merge.

### **Main Players**

#### **Hikma Pharmaceuticals**

Hikma Pharmaceuticals was established in 1978 as a private shareholding company with limited liability. The company is part of Hikma Investments Group, which owns subsidiaries in Tunisia, Saudi Arabia, Portugal, and U.S. Although much of its production capacity is outside Jordan, Hikma Pharmaceuticals is the country's largest pharmaceutical company in terms of sales. Hikma employs 550 people.

Exports play a major role in Hikma Pharmaceutical's Jordan operations due to the small size of the Jordanian market. Exports represented about 62 percent of total sales of JD48 million in 2002.

The company has three different production facilities: a general formulation plant built in 1978, a sterile formulation plant to produce powder and liquid injectables built in 1984, and – in compliance with current Good Manufacturing Practices (GMP) – a separate plant for penicillin and cephalosporin was built in 1988.

The company managed to get U.S. Food and Drug Administration (FDA) approval for two drugs and expects approval for another four in 2004. Hikma attained the approval of the U.K.'s Medical Control Agency (MCA) for both its penicillin and general pharmaceutical

plants. This approval has paved the way for Hikma to sell in the E.U. In 2002, it exported some \$10 million to the German market.

Hikma has also signed agreements with a number of multinational companies to manufacture and distribute drugs under license in the Middle East and North Africa (MENA) region, including Fujisawa, Dainippon, and Tanabe from Japan, Cheil Jedang from Korea, Rhodia from France, Gideon Richter from Hungary, and Ibsa from Switzerland.

Hikma has a portfolio of 169 drugs registered for sale in the MENA region, with sales of \$69 million in 2002 in 15 markets. It invests three percent of its sales in R&D, and has its own R&D center to develop analytical methods used to test the stability and quality of newly developed drugs.

Hikma's existing portfolio of drugs – available as generics, branded generics, and licensed drugs – cover a wide range of therapeutic classes, such as analgesics, anti-infectives, cardiovasculars, gastrointestinals, immunosuppressants, muscle relaxants, and psychotherapeutic drugs.

In June 2003, the International Finance Corporation signed an agreement to provide a \$15 million corporate loan to the Hikma Group to support implementation of its plan to further expand its operations and increase sales in the Middle East, U.S., and Europe. The agreement will help to enhance its facilities for production and R&D in Jordan, as well as to establish a new facility in Algeria, and expand its production facility in Portugal.

#### Arab Pharmaceutical Manufacturers (APM)

APM was established in 1962 as a public shareholding company and became the first producer of pharmaceuticals in Jordan. The company's initial capital investment of JD150,000 has gradually grown to JD27 million by end of 2002. With 800 employees, it is the largest pharmaceuticals employer in Jordan.

APM's total sales for 2002 were approximately JD25 million, a 13 percent drop from the previous year. Moreover, during the first half of 2003, APM posted another 15 percent drop in sales. As a result of consistent negative sales growth over the last few years, the company has lost its status as the leader of the Jordanian pharmaceutical sector. The negative growth is mainly due to increasing competition within APM's varied mix of products, and a loss of sales in the Iraqi market.

In 2003, APM began a four-year plan to renovate its old manufacturing facilities, at a cost of JD15 million, to improve the company's efficiency and productivity. Moreover, APM decided in November 2003 to merge its operations with Advanced Pharmaceutical Industries (ADPH) in order to be better prepared to face increasing competition within the pharmaceutical industry.

APM is still one of Jordan's leading exporters of pharmaceuticals, and exports constituted 73 percent of the company's total sales in 2002. Saudi Arabia is currently APM's largest export market, with exports representing 34 percent of total sales.

APM also has a licensing agreement with the Japanese pharmaceutical producer Takeda to manufacture and market four products, namely Biopress, Takepron, Danzen, and Actos, to the Gulf region.

Iraq represents one of APM's largest markets, at around 16 percent of total sales by the end of 2002. APM's future share of the Iraqi market will depend on political stability, as well as the company's ability to compete with international players.

## Dar Al Dawa (DAD)

DAD was established in 1975 as a public shareholding company and currently has paid-up capital of JD20 million. Sales increased in 2002 by approximately 12 percent to around JD27.5 million. In addition, during the first half of 2003, DAD posted a 4.8 percent increase in sales to reach JD14.5 million, compared to JD13.9 million during the same period of 2002. According to statistics compiled by the U.S.-based consulting firm IMS Health, DAD has ranked number one in Jordan for five consecutive years in terms of pharmaceutical sales to the private sector, in comparison to both local and multinational competitors.

DAD has 650 employees, and exports accounted for around 79 percent of revenues in 2002, compared to 18 percent from sales to the local private sector and 3 percent from sales to the government. Its main export markets are Saudi Arabia, Iraq, Algeria, and Gulf states.

DAD has been able to market its products in the E.U. since the Swedish Medical Products Agency (MPA) granted its approval in July 2002 in recognition of DAD's compliance with the European guidelines for "Good Manufacturing Practices" (EU-GMP). DAD was also the first pharmaceutical company and the ninth firm overall in Jordan to be awarded the ISO 9001 certification in 2001. Along with the EU-GMP certificate, this certification is expected to give the company an edge over local and regional rivals.

DAD currently manufactures ten products under license from Parke-Davis (now part of Pfizer) and agreed with Novartis AG in November 2003 to package and sell Novartis' products in the Jordanian market under license as well.

In 2001, DAD began to produce eyedrops from a factory in Algeria, in a joint venture with a local partner. DAD also owns the majority stake in a Saudi Arabian venture, which was completed in 2001.

Annex 11 includes a comprehensive list of other pharmaceutical firms operating in Jordan's domestic market and includes information on capital invested, markets, products, licenses, and number of employees.

## **Linkages, Related, and Supporting Industries**

### Pharmaceuticals Support Sector

The AMIR Program's recent study of Jordan's pharmaceutical cluster concluded that while it is growing quickly in terms of exports, it is not developing fast enough to strengthen other cluster participants.

The professional services sector that caters to the pharmaceutical industry, for instance, is quite underdeveloped. There are no specialty firms that deal with patent process litigation or patents protection. There is also no network of technical services for strengthening the operational standards within pharmaceutical companies, such as GMP and good laboratory practice (GLP). Traditionally, retired personnel from drug administration agencies have provided these technical services.

The Arab Center for Pharmaceuticals and Chemicals Company (ACPC) is one important exception, as it is the only plant in Jordan that manufactures empty, hard, bovine gelatin, base-free capsules of various sizes. ACPC has successfully manufactured and sold these capsules to local and regional manufacturers since 1984. By the end of 2002, ACPC's total sales reached JD4.6 million, of which JD2.7 million represented the sales of the hard gelatin capsules plant alone. According to the company, ACPC ranks first in the Middle East and the fifth worldwide in the production of these items, at a rate of 1.15 billion capsules per year.

## Regulatory Environment

While Jordan's Ministry of Health (MOH) has established a drug vigilance center or Drug Directorate, the agency still lacks the auditing and inspection standards of its peers in Europe or the U.S. Therefore, many Jordanian companies seek certifications from drug administration agencies abroad to demonstrate their compliance with international standards.

Jordan's accession to the WTO and the signing of JUSFTA have resulted in implementing IPR protection that is considered the best in the MENA region and among the most advanced in the developing world. While the WTO and JUSFTA have opened the doors for Jordanian pharmaceutical companies to enter nontraditional markets such as Europe and the U.S., they still need to be approved by any European Health Authority in the E.U. and by the FDA in the U.S., which provides an incentive to maintain the highest international standards in order to get access to these export markets.

Four Jordanian pharmaceutical companies – Dar Al Dawa, United Pharmaceuticals, Hayat Pharmaceuticals, and Advanced Pharmaceuticals – have pursued E.U. approval through the MPA, Sweden's official health certification body. Hikma Pharmaceuticals has also obtained approval to export to the E.U. through the U.K.'s MCA. Pharma International Co. obtained its E.U. approval from both Germany and Sweden, in October and November 2003, respectively. As a result, these companies have the opportunity to market their products in any European country since they comply with EU-GMP guidelines.

These certifications indicate that these four companies already meet the stringent European criteria for manufacturing quality. In addition to the EU-GMP certificate, a number of Jordanian companies are seeking to obtain approvals to enter other markets, such as U.S., via FDA approval. Hikma Pharmaceuticals is currently the only Jordanian pharmaceutical company that exports to the U.S., having gained FDA approval for two of its products.

## Research and Development Capabilities

Most leading multinational pharmaceutical firms conduct research primarily in the following five areas.

- Clinical
- Synthesis compound
- Bioequivalence
- Toxicological
- Formulation and stability

R&D to produce a new molecule and develop it into a commercial product is an expensive and lengthy process. The full cost of discovery through launch of a new drug can be up to \$500 million. Therefore, many small companies that engage in R&D work, especially in the area of synthesis compound study, depend on the sale of the results of their research to companies that have the capability and resources to develop the drug in order to bring it market. Midsize companies that develop new drugs also often license out production to rival pharmaceutical companies in other markets.

According to a study conducted by the Jordan's Ministry of Planning Competitiveness Unit, the country's pharmaceutical firms currently only conduct research in only two of these areas: bioequivalence and stability studies.

This work could be more accurately described as "development," since the technical capabilities, equipment, and resources are not currently available in Jordan to perform true research work.

In fact, almost all R&D done by Jordanian pharmaceutical firms is development work to ensure their generic products meets all necessary standards. This requires a high level of skill and expertise, but is not as costly as the R&D required for an original drug.

While five local companies have 11 registered domestic and foreign patents, none has yet managed to sell a patent to an international company or to successfully market those products outside of Jordan on their own.

While larger companies conduct development work in-house, smaller companies use the services of local R&D centers for bioequivalence or stability studies prior to introducing a new generic drug into the local or regional markets.

Lately, some companies have intensified their efforts to cooperate with universities in these areas of development as a first step to move into cooperation in research. This function can be strengthened by coordinating the efforts by local manufacturers and by forming fostering strategic relationships between manufacturers and local universities.

Jordan has four clinical research organizations (CRO), such as the International Pharmaceutical Research Center (IPRC). These organizations perform drug trials using their medical, clinical, and bioanalytical expertise before submitting their study to complete the registration process of the drugs.

At IPRC, studies are designed and conducted according to strict guidelines under the European Agency for the Evaluation of Medicinal Products (EMEA) and the U.S. FDA. According to IPRC, bioequivalence study costs between JD30,000 and JD50,000 in Jordan and between JD70,000 and JD100,000 worldwide, thereby offering the potential to attract generic investors wishing to have high-quality, low-cost bioequivalency research.

#### Taxation

Jordanian tax laws and regulations are generally favorable to FDI. With regards to attracting FDI to the pharmaceuticals sector in particular, however, certain areas need to be amended or clarified.

There are no current government incentives for R&D, which is deemed a “nonproductive” area in the short to medium term. Furthermore, it is not clear in terms of local accounting practices whether R&D in Jordan is considered an expense or an investment. While the law calls for such activities to be tax-deductible, in practice, according to local firms, this is not the case.

France is the only E.U. country with which Jordan has a double taxation treaty. This may not be attractive to E.U. companies. On the positive side, Jordanian regulations allow full repatriation of profits from Jordan. Such profits are not subject to a withholding tax.

#### **Market Access Agreements**

Since Jordan's domestic market is small, the country has attempted in recent years to enhance its ability to access other markets by acceding to the WTO and entering into several multilateral and bilateral free trade agreements, such as JUSFTA, the Jordan-E.U. Association Agreement, the Greater Arab Free Trade Agreement (GAFTA), and free trade agreements with Arab countries such as Egypt, Saudi Arabia, United Arab Emirates, Syria, and Tunisia.

However, medicines and pharmaceutical products already enter most countries, including the U.S., E.U. member states, and Saudi Arabia, free of duties or subject to reduced tariffs. For this reason, duty-free access to such markets does not have as much bearing on Jordan's

ability to attract FDI to pharmaceuticals as its compliance with high industry standards and international certifications.

Still, Jordan's accession to the WTO and compliance with JUSFTA required strict adherence to IPR laws, which has a potential to attract investors who demand patent protection in order to feel safe about investing their intellectual property overseas.

In the process of modernizing Jordan's legal framework to secure these market access agreements, a contract manufacturing law was issued which ensures that local firms meet a specific set of requirements to be able to manufacture (under contract) a product comparable to the original one and thus receive the same approvals for its production in that plant.

Moreover, even with market access agreements in place, Jordanian companies report technical barriers to trade (TBTs) in most Arab markets: Egypt and Syria are practically closed to Jordanian exporters, while Saudi Arabia and Lebanon, although financially lucrative, are difficult and costly to enter. Other markets, such as Libya, Algeria, Sudan, Tunisia, Morocco, and Yemen, are volatile, not highly profitable, and fraught with TBTs. Egypt, for instance, does not allow the registration of a drug if five equivalent formulae are available in the market, while Algeria requires that companies set up factories in the domestic market after a few years of exporting to the country.

### **Factor Conditions**

#### **Costs and Operational Efficiency**

In general, there are two types of pharmaceutical production facilities: bulk plants, also known as fine chemical plants, and finishing plants.

Bulk plants can base their production either in chemistry or fermentation, a form of biotechnology. They require high investment and expertise, but enjoy a handsome return on capital. Bulk plants commonly require an investment of over \$100 million.

Such plants are very sophisticated, and require skilled and highly educated staff. Typically, 60 percent of employees in bulk plants have advanced university degrees. Bulk plants are highly regulated, and must adhere to very strict standards of quality and hygiene. The U.S. FDA standard for bulk plants is commonly regarded as the benchmark.

Finishing plants, on the other hand, buy active and inactive ingredients from bulk plants and convert them into tablets, capsules, and so on. They do not require major investments, but are also not as profitable as bulk plants.

All plants in Jordan are finishing plants. The ones established more recently have state-of-the-art equipment. Since the current trend in international companies is not to invest heavily in land and building, the availability of these plants can be an asset in attracting FDI by mid-size international companies that do not wish to invest in buildings or machinery in Jordan at this stage. Industry participants in Jordan have reported that product development costs and marketing costs are the two biggest items in their cost structure, dwarfing such expenses as labor and plant costs.

#### **Technical Expertise and Workforce**

According to the Jordanian Association of Pharmaceutical Manufacturers (JAPM), the number of people directly employed by the pharmaceutical industry doubled to 4,022 employees in 2002 from 2,000 in 1992. It is worth noting, however, that indirect employment in the sector is almost as numerous as direct employment. According to the Pharmacists' Association, there are more than 6,200 registered pharmacists in Jordan. In addition, some 900 new pharmacists graduate annually from the country's eight pharmacy colleges.

Jordan's pharmaceutical workers are technically sophisticated, as is the country's sizeable pool of pharmacists. This workforce, at the operator level, is well educated, readily available, and skilled in both development and production. Furthermore, while salaries for technical and professional staff in the pharmaceuticals sector are almost double those in other domestic manufacturing industries, they are considerably lower than wages in Europe or in the Gulf states.

According to managers at pharmaceutical firms, worker productivity seems adequate, especially among females. Therefore, Jordan should be able to provide the local skill base and technical expertise to attract investments in this sector.

To further add to Jordan's appeal as a destination for foreign investment, top-level technical training, especially for R&D, is required, in addition to the adoption of international standards by the industry for manufacturing, quality assurance, and safety and regulatory measures.

## **2.2 Global Pharmaceutical Industry**

### **Global Investment Trends**

The past 20 years have been a time of relentless consolidation for the global pharmaceuticals industry. Mergers and acquisitions have cut the number of pharmaceutical firms operating around the world in half, with the exception of small startups, primarily in biotechnology. At the same time, the number of pharmaceutical firms in Arab countries has increased by 500 percent. This counterintuitive trend suggests that consolidation is also ultimately inevitable in the region as well.

After a year of slow growth, global pharmaceutical companies are divesting, cutting jobs, merging with former rivals, and investing in new drugs in the development pipeline. Many of the world's major pharmaceutical concerns have struggled to generate sales growth, which were in mid-single digits in 2003.

Analysts have estimated that earnings across the sector have grown by an average of 0.9 percent in 2003, down from 1.8 percent in 2002. Earnings growth, however, is expected by Raymond James analysts to accelerate to 8.4 percent in 2004, as new products reach the market and the threat of generic competition wanes.<sup>5</sup>

Beyond 2004, annual global market sales growth of 8.5 percent is expected. A number of forces challenge the industry's ability to get within striking distance of these expectations, such as decreasing R&D productivity levels, increasing R&D costs, rising marketing and selling expenses, and low average peak brand sales.

Some industry experts forecast the fully integrated pharmaceutical company model will not work for much longer, as companies cannot produce enough "blockbuster" drugs to drive long-term growth. The double-digit growth that once characterized the pharmaceutical industry has disappeared.

Growth in the high single digits is expected to return in 2004, however, as investments in productivity begin start to pay off. Large pharmaceutical companies that lacked enough new and near-market products to generate sufficient revenue have executed mergers or ramped up in-house R&D. In other instances, non-core businesses have been divested or spun off as companies streamline to improve efficiency. Changing regulations are forcing pharmaceutical companies to revise marketing practices and maximize returns to generate at least single-digit increases.

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<sup>5</sup> [www.rjf.com](http://www.rjf.com)

According to Barrie James, president of Pharma Strategy Consulting, the fully-integrated pharmaceutical company model has been a victim of its own success.<sup>6</sup> By 2010, he predicts that the only winners will be the companies that successfully adapt their strategies and create new business models that accommodate new market realities, such as innovative technologies, customer demands, and the a competitive pricing environment.

Through 2010, growth in the pharmaceutical industry will become more challenging as competition from new and generic drugs continues to increase. Although a few top pharmaceutical companies may be able to maintain momentum for some time, the majority will need to change their strategies to successfully meet these new market realities.

Among the many forces and challenges that are transforming the drug industry are the following.

- Unproductive development pipelines that produce few blockbuster products
- Patent expirations leading to increased competition from generics and slowing sales
- Diminishing returns caused by an expanding yet increasingly ineffective sales force
- Changes in the delivery of health care
- Prescription-to-OTC conversions
- Concern over high drug prices, especially in the U.S.
- Reimbursement levels in developed countries that restrict the extent of prescription drugs use
- Manufacturing issues
- Drug importation
- Reduced access to physicians in industrialized nations, as authorities seek to reduce the spiraling costs of health care for their aging populations

According to John Ansell of the John Ansell Consultancy, if the world's top 20 pharmaceutical companies can regain the productivity levels they achieved during the 1990s – 1.5 products per year per company – the industry as a whole should be able to sustain itself for a few years more.

However, the industry's future rate of annual growth should not be expected to correlate directly with the number of new products launched in a given year. New products take time to make an impact on total sales, which according to Ansell makes it unlikely that enough new products will emerge over the next three or four years to ensure the survival of all major pharmaceutical companies as independent entities. Beyond 2007, however, industry pipeline projections suggest a return to high levels of productivity that will enable the majority of surviving companies to prosper.

Some drug developers have reacted to these challenging circumstances with the tested practice of joining forces. The largest consolidation so far was the acquisition of Pharmacia by Pfizer that was completed in April 2003. Pfizer's merger with Pharmacia set a new standard for "big pharma" consolidation. Industry analysts, however, have questioned the sustainability of strategies that rely on mergers and acquisitions.

Other top pharmaceutical players, such as Bayer Group and Merck, the world leader, have chosen to initiate restructuring programs of layoffs and spinoffs to improve efficiency. At present, in the E.U., there is also trend towards relocating operations to lower-cost manufacturing locations such as India, Latvia, and the Czech Republic. Low tax rates and IPR protection are important in these relocation decisions, and this is where Jordan can stand out.

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<sup>6</sup> [www.pharma-strategy.com](http://www.pharma-strategy.com)

Another notable global trend is the migration of most research work into the U.S. This is due to the fact that the main economic factor driving firms to locate their R&D is the size and speed of potential profits. Since drug-pricing regimes in Europe have strict price ceilings that are around 60 percent below those in the U.S., big pharmaceutical firms have chosen to relocate advanced research and product development for their most promising new drugs to the U.S. At the same time, they are shifting their early stage research to low-cost countries, such as India.

### Global Market Characteristics and Players

In 1992, the world market for pharmaceuticals totaled \$137 billion. By 2002, it had grown by 160 percent to approximately \$356 billion. In 1992, the top 10 companies in the world accounted for 28 percent of total industry sales. By 2002, they accounted for 46 percent of total sales. Table 2.3 lists the top 10 companies in 2002, ranked by their total global sales.

**Table 2.3: Top 10 Global Pharmaceutical Firms (2002)**

	Company	Country of Origin	Total Sales (\$ million)
1	Merck & Co.	U.S.	51,790
2	Johnson & Johnson	U.S.	36,298
3	Pfizer	U.S.	32,373
4	GlaxoSmithKline	U.K.	31,830
5	Bayer	Germany	27,299
6	AstraZeneca	Sweden	22,230
7	Novartis	Switzerland	20,828
8	Aventis	France	19,441
9	Roche Holding	Switzerland	19,101
10	Bristol-Myers Squibb	U.S.	18,119

See Annex 12 for a more comprehensive list of the top 10 global pharmaceuticals companies, including a description of each company and its web site address. The ranking of the companies is based on overall global annual sales in terms of pharmaceuticals, as well as health-related services.

As Table 2.4 demonstrates, the U.S. accounted for almost 45 percent of the global market in 2002, followed by Europe with about 25 percent and Japan with 13 percent. In terms of exports, the U.S., Germany, the U.K., and France are the four biggest global exporters, respectively.

**Table 2.4: Global Pharmaceuticals Markets by Region (2002)**

Country/Region	Sales (\$ billion)	Market share (percent)
United States	158	45.0
Europe	88	24.5
Japan	47	13.0
Asia Pacific	24	6.5
Latin America	22	6.0
Middle East & Africa	10	3.0
Canada	7	2.0
<b>Total</b>	<b>356</b>	<b>100</b>

Source: IMS Health

Growth in drug sales through retail pharmacies in the 10 top markets reached around 7 percent in 2003. (See Table 2.5 for further information.) According to SCRIP Reports, a leading industry newsletter, estimated growth in the two main markets for pharmaceuticals, the U.S. and E.U., exceed 15 percent per year.

**Table 2.5: Top Global Pharmaceuticals Markets by Country (2002)**

Country	Sales (\$ billion)	Market Share (percent)
1 United States	158	45.0
2 Japan	47	13.0
3 Germany	20	5.7
4 France	19	5.4
5 UK	14	4.0
6 Italy	13	3.7
7 Spain	9	2.5
8 Canada	7.5	2
9 Mexico	7	2
10 China	6	1.7
Rest of World	55.5	15
Total	356	100

Source: IMS Health

Sales to date in the top five European markets have shown a 6 percent constant exchange growth, with Spain the best performer at 11 percent. In North America, the U.S. and Canada posted 10 year-on-year sales growth to August 2003.

By therapeutic category, the biggest increase in sales worldwide continues to be in the cytostatics and dermatological groups, both with 13 percent constant exchange sales growth. The single largest therapeutic subcategory in dollar sales continues to be the C10 Hypolipidemia Class, at \$21.4 billion with year-on-year sales growth of 14 percent to August 2003.

The best-selling drug year-on-year in August 2003 was still Lipitor, worth over \$8 billion with growth of 15 percent. (See Table 2.6 for further information.)

**Table 2.6: Top Five Drugs Worldwide**

Drug
1 Lipitor
2 Zocor
3 Norvasc
4 Prevacid (Ogastro)
5 Losec

Source: IMS Health

Competition among international pharmaceuticals producers is intense, and many new drugs introduced into the marketplace have little therapeutic advantage over existing drugs. Marketing, promotion, and product presentation become important factors in the ability of a drug to penetrate a market. Since prices in many countries are regulated and depend on reimbursement policies, product prices can vary enormously from market to another. Due to the huge cost of medicines, many countries are keen to promote the use of generic drugs.

### Global Generic Drugs Market

Growth expectations are even greater for the generic drugs market than the ethical drugs market, as a large number of patents are set to expire within the next two years. Generic drugs are rapidly gaining ground in the pharmaceutical marketplace. According to SCRIP Reports, global sales of generics totaled \$29 billion in 2003, up from around \$ 17 billion in 2002, and are projected to grow an additional 20 percent in 2004, compared to single-digit growth for the total pharmaceutical market.

As mentioned earlier, governments in many countries are encouraging the use of generic alternatives to ethical drugs to reduce cost to the consumer and to lower the overall cost of

health care. This, coupled with the expiration of many patents over the next two years, is driving the growth in the generics market. Generics already represent a high percentage of prescriptions written in the U.S.: 51 percent in 2002, up from 19 percent in 1984, as well as the U.K. and Germany, according to Graham Lewis, vice president of IMS.

Fewer branded drugs lost their patent protection in 2003, but more aggressive efforts by generic drug makers to develop and market their products early kept the spigot open on generic growth. Major branded drugs that lost patent protection in 2003 had sales of \$5 billion, down from \$12 billion in 2002 and \$8.5 billion in 2001. According to Standard & Poor's latest industry survey, "Healthcare: Pharmaceuticals," the branded pharmaceutical sector received some respite in 2003 from the "generic onslaught" following patent expirations in 2001 and 2002.

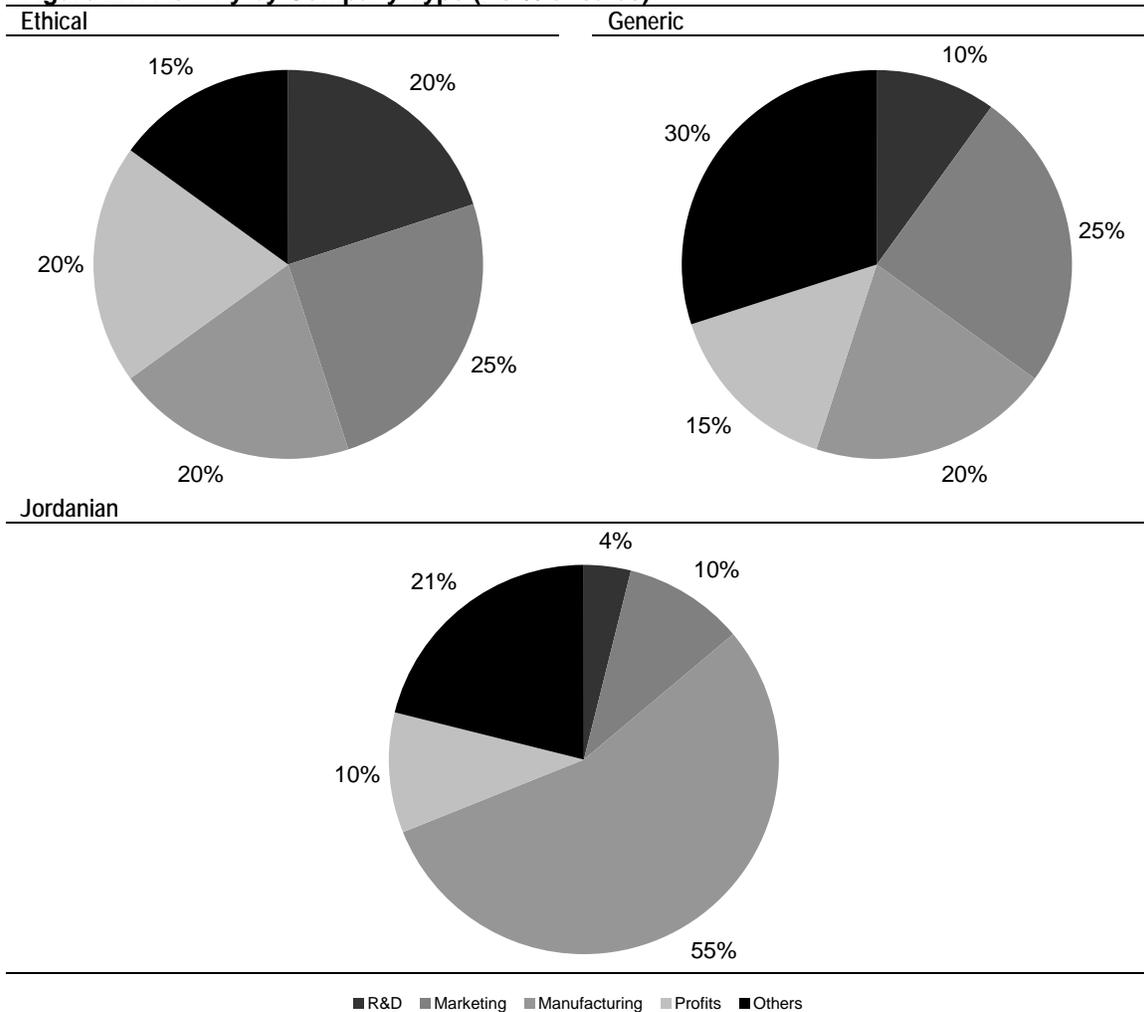
However, looking forward, the U.S. FDA projects that more than 200 brand-name medications will come off patent over the next several years. Drugs coming off patent present many opportunities for generic drug makers in 2004 and beyond, as products that currently generate approximately \$36 billion in sales for the 20 largest global pharmaceutical companies face generic exposure over the next four years.

Among the "blockbuster" drugs set to lose patent protection between now and 2006 are brand names such as Flovent, Flonase, Cipro, Diflucan, Lamisil, Xenical, Zocor, Prevacid, Zolof, Pravachol and Zithromax, according to the U.S. government and industry sources. This will further erode blockbuster franchises and will likely put an end to consistent double-digit gains in pharmaceutical sales and revenue.

### **Dynamics of Global Pharmaceuticals Industry**

The three main activities of the global pharmaceuticals industry are R&D, production, and marketing. R&D and marketing are the activities that differentiate the main ethical players from the rest of the market. They are also the activities where most resources are spent. While multinational producers of ethical drugs spend about 20 percent and 25 percent of their sales on R&D and marketing, respectively, Jordanian companies spend less than 15 percent for the two activities combined.

Generic companies spend considerably less on R&D, but their marketing costs are comparable to those of ethical producers. For these companies, the decisions to undertake product development and R&D are greatly influenced by whether or not they can do so before a patent's expiration, under the terms of the Bolar Provision, which is discussed below. The following graphs show the percentage of sales devoted to each activity for international ethical and generics pharmaceutical companies, when compared to their Jordanian counterparts.

**Figure 2.1: Activity by Company Type (As % of sales)**

### Bolar Provisions

Developing pharmaceuticals for commercial production is an expensive, time-consuming, and highly-risky business. In particular, the problem of further innovation and development comes into sharp focus in connection with development of generic drugs before patent expiry. Many patent systems allow scientific experiments as an exception to patent infringement, but only some allow clinical trials to provide the basis for a generic drug's regulatory approval to escape infringement of an existing patent. Patent infringement caused by clinical trials can thus be one component risk of implementing a generic drug development program. The Japanese Supreme Court ruled that clinical trials for regulatory approval were within the legislative experimental use exception, since banning them would *de facto* extend the life span of a patent. The U.S. resolved this problem by introducing a "Bolar provision" into law to ensure that such drug testing for regulatory approval would not be a patent infringement, reversing the decision in the case of *Roche Products v. Bolar Pharmaceutical*.

Thus, a Bolar provision allows all development, testing, and experimental work required for the registration of a generic medicine to take place during the patent period of the original product in order to ensure that there is no delay for these products to come onto the market

after patent expiry. Bolar provisions have become a common feature of patent law in most countries outside the E.U, including the U.S., Japan, Australia, Canada, and Israel.

In the E.U., it is only possible to submit registrations during the patent period after the expiry of the data exclusivity provision, which is presently six or 10 years after the first authorization of the original product. Moreover, under existing patent interpretation, it is not possible to develop the generic product during the patent period, to undertake trials, or to supply samples for regulatory approval. Consequently, E.U. generic companies are forced to develop their products in countries with Bolar provisions and then import after patent expiry. Therefore, while the E.U. benefits from generic competition, it has become dependent on imports, at least during the first years after patent expiry.

This is not the case, however, in a number of E.U. new member states. Hungary has a Bolar provision in its patent law. Poland and Slovenia have these provisions in their draft laws too. A WTO Panel decision<sup>7</sup> has upheld the right of pre-patent expiry development work. It stated that such legislation is compatible with obligations under the TRIPs Agreement. This means that accession countries only need to adopt international law.

To deal with this problem, the European Commission's Draft Directive of June 2003 in relation to medicinal products<sup>8</sup> included a proposed introduction of a Bolar provision into the laws of E.U. member states that do not yet have them, which would eliminate the risk that clinical trials to test a generic drug would infringe a patent.

The European Council's common position on the Draft Directive is expected in 2004. It is too early to determine when the Draft Directive might be transposed into the national laws of E.U. member states. However, it now seems Bolar provision will be extended across the E.U., although the precise form this will take cannot be predicted, and faces criticism from European pharmaceutical companies.

Such an important change in the law applicable to generic drug development will very significantly alter the landscape for European generic drug development. It is likely to result in earlier and more widespread post-patent expiry generic exploitation across Europe. Thus, this would limit the potential for Jordanian generic producers to penetrate the European market and beat European generic producers by launching products immediately after a patent's expiration.

The recent accession to E.U. membership by states with Bolar Provisions in place increases the urgency of acting to promote Jordan's Bolar benefits to the pharmaceutical industry before other countries start to directly compete with Jordan for Bolar-based investments. This is a pressing concern in the case of Hungary, as Poland and Slovenia may not be able to enact their draft Bolar legislation if it is deemed to conflict with existing E.U. law.

## **India**

In addition to the various regional markets discussed in the following section that are potential competitors to Jordan's pharmaceuticals sector in attracting FDI, the Indian market is one of the growing global markets that is already attracting FDI and is already a potent competitor of Jordan in this regard. Therefore, the following is an attempt to gauge this market's main characteristics, in order to include them in the upcoming analysis in Chapter 3.

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<sup>7</sup> E.U. vs. Canada, WT/DS114 of 17 March 2000

<sup>8</sup> The proposal for a Directive of the European Parliament on the *Community code relating to medicinal products for human use*, 2002/C/ 75/ E/216.

## Characteristics

Globally, the output of the Indian pharmaceutical industry ranks fourth in terms of volume and thirteenth in terms of value. In 2002, the domestic Indian pharmaceutical market was valued at \$4.5 billion and has been growing at an average of more than 15 percent over the past decade. India's pharmaceutical market represents 1.6 percent of the global marketplace and its share has grown at a rate of eight to nine percent per year. The industry produces about 60,000 finished medicines and roughly 400 bulk drugs, which are used in formulations.

Most of India's domestic demand for formulations is met by domestic industry. Imports represent only nine percent of the total local market and have grown at a rate of only two percent per year over the past five years. On the other hand, Indian manufacturers are also increasingly tapping export markets, which now make up for more than 38 percent of total domestic production and have been growing by 30 percent annually over the past five years. The main export markets are the CIS, East Asia, Africa and Latin America.

India's comparative advantage lies in the low cost of its bulk drugs. The penetration of the U.S. generics market and the continued exports of anti-AIDS drugs are expected to keep export growth high.

The market is very fragmented, with over 23,000 registered units at the end of 2001. Around 260 players constituted the organized sector, while some 6,000-8,000 players existed in the small-scale sector. The largest formulation players have a market share of less than six percent, while the top ten players account for 36 percent of the formulation market, compared with a 49 percent share for the top ten players in the global pharmaceuticals market.<sup>9</sup>

## Advantages and Disadvantages

India is on the threshold of a biotechnology revolution. The advantages the country has are its large pool of scientific talent available at a reasonable cost, a wealth of R & D institutions, rich and varied biodiversity, strong information technology (IT) skills and an English-speaking population. Venture capitalists are now keenly studying the Indian sector for opportunities, as well as MNCs wishing to team up with leading local producers.

However, India's rigid administrative price controls or Drugs Price Control Order (DPCO), a weak IRP regime – India currently recognizes only process patents and not product patents, as well as outdated and restrictive labor laws, high import tariffs, and taxes are significant barriers to the growth of FDI in the Indian pharmaceuticals industry<sup>10</sup>.

## Current and Future Developments Relevant to FDI in India

A number of current and future developments are contributing to making India a preferred destination for FDI in the pharmaceutical sector, especially in generics.

- During the period of 2002-05, the market for generic drugs is estimated at \$55 billion. India, with its technology, R&D facilities and trained human resources can capture a significant part of this market. Already, six out of the top ten drugs scheduled to lose their patents during this period are being produced by Indian firms.
- Developed countries like the U.S. are encouraging increased consumption of generic drugs. This is expected to further bolster the generic drug production and exports from India.
- The domestic market in India itself is estimated to be worth \$12 billion by 2010.<sup>11</sup>

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<sup>9</sup> ABN AMRO Bank. "Sectoral Report – Pharmaceuticals Industry in India – Update," 1 April 2003.

<sup>10</sup> <http://www.tradepartners.gov.uk/biotechnology/india/profile/overview.shtml>

<sup>11</sup> Ibid.

- India is bound to recognize product patents by January 2005, which will enhance its attractiveness for FDI by MNCs.
- The number of drugs affected by the DPCO has been cut by two thirds in 2003.
- The Indian government has recognized the pharmaceutical industry as a knowledge-based industry and is providing increased incentives for investment in the industry in the form of additional deductions under income tax laws for R&D expenses, rationalized excise duty, reduced interest rates on export financing, and permitting FDI up to 100 percent through the automatic route.

#### Industry Trends

- **Increased focus on R&D.** Major Indian companies such as Ranbaxy Laboratories, Dr Reddy's Laboratories, Cipla, Sun Pharmaceuticals, Zydus Cadila, Wockhardt and Nicholas Piramal are investing heavily in R&D. Dr Reddy's Labs and Ranbaxy have already discovered New Chemical Entities (NCE) and have launched Novel Drug Discovery Systems.
- **Marketing alliances.** Domestic players and MNCs have entered into marketing arrangements to increase market penetration and further strengthen their position in respective therapeutic segments. For example, Ranbaxy has tied up with Cipla, Glaxo and Hoechst Marion Roussell (HMR) for products in specific therapeutic segments, and HMR has tied up with Nicholas Piramal.
- **Product rationalization and acquisitions.** Most of the top pharmaceutical companies are consolidating their position in the domestic market either through product rationalization (e.g., Glaxo) or brand or company acquisitions (e.g., Nicholas Piramal and Cadila Pharmaceuticals are actively acquiring companies). HMR, Glaxo, Wockhardt, and Ranbaxy have cut down their product portfolio in order to be more focused. Similarly, companies such as Sun Pharmaceuticals, Nicholas Piramal, and Dr Reddy's Labs have opted for brand or company acquisitions to increase market penetration.<sup>12</sup>

### 2.3 Regional Pharmaceutical Industry

As demonstrated in Table 2.4, the whole region of Africa and the Middle East constitutes only three percent of the total global pharmaceuticals market, when measured in sales valued in U.S. dollars. Within this region, Turkey, Israel, Saudi Arabia, and Egypt are the countries that have the largest domestic demand for pharmaceuticals, as well as the comparatively most sizeable pharmaceutical manufacturing bases.

#### Turkey

Turkey's total consumption of pharmaceuticals was \$2.7 billion in 2002.<sup>13</sup> The market is broken down into \$1.5 billion in imports and \$1.2 billion in locally-produced pharmaceuticals. It is expected to grow by 15 percent for the next couple of years. Turkey exported \$140 million worth of medicine to the neighboring region. Turkey's per capita pharmaceutical expenditures are the lowest in Europe, at around \$50. By comparison, per capita spending on health care goods and services across Europe is \$2,140.

Turkey's pharmaceutical production makes it sixteenth among the world's 35 leading pharmaceutical producing countries. There are 84 manufacturers, 12 raw material producers, and 38 importers, all employing a total of 20,840 persons. These companies produce a wide variety of pharmaceuticals, and currently Turkey produces 3,100 different preparations.

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<sup>12</sup> <http://meindia.nic.in/indiapublication/pharmaceuticals.htm>

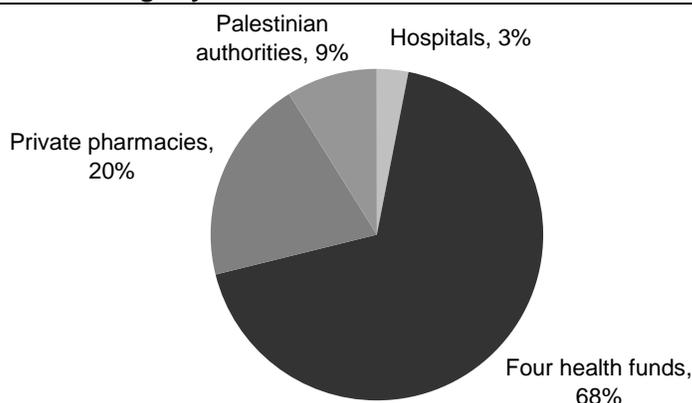
<sup>13</sup> USDOC, U.S. Commercial Service. "Industry Sector Analysis: Turkey's Pharmaceuticals Sector," May 2003.

The pharmaceutical sector is among Turkey's most foreign capital-intensive industries. Domestic pharmaceutical production is dominated by non-innovative preparations (including anti-rheumatoid, antibiotics, and analgesics), coupled with strict pharmaceutical registration procedures. There are 22,000 pharmacies in Turkey. There is a surplus of pharmacists in the country, where about 900 pharmacists graduate from pertinent universities each year. Anti-rheumatoid preparations and antibiotics continue to top the pharmaceutical sales charts.

### Israel

In 2001, pharmaceutical consumption in Israel amounted to \$675 million.<sup>14</sup> Of this amount, 60 percent was spent on imported drugs, particularly those protected by patents. Purchases of drugs by Israeli customers may be broken down as illustrated in Figure 2.2.

**Figure 2.2: Purchase of Drugs by Israeli Customers**



Local production of drugs reached \$1.25 billion, most of it generics for export. Manufacturing standards of the leading companies meet the FDA and EMEA requirements. The industry's flagship is Teva Pharmaceutical Industries Ltd., with global sales of \$2.2 billion. Teva, which recently celebrated its one-hundredth anniversary, is considered the global market leader in the manufacture of generic drugs.

In 1999, there were 24 pharmaceutical plants registered in Israel. The five leading plants (i.e., Teva, Agis, Dexton, Taro, and Rakah) comprise over 80 percent of locally-produced pharmaceuticals. Teva, Agis, and Taro have also acquired American-based plants as a first step towards entering the U.S. market. Teva is currently the largest generics manufacturer in the U.S., and Agis subsidiary Clay Park Laboratories is the largest dermatological cream manufacturer (in units) in the U.S.

In Israel, 5,400 people are directly employed by the pharmaceutical industry, 37 percent of whom hold an academic degree. The industry spends around \$140 million per year on R&D activities. Some of the main challenges facing the industry in Israel and affecting its competitiveness are a lack of trained workforce for the development of ethical drugs, especially in preclinical stages, insufficient infrastructure, lack of national vision for developing the sector beyond its current successes, and fairly limited private-public sector coordination and cooperation.

### Saudi Arabia

The Saudi Arabian market for pharmaceuticals continues to be the most dynamic in the region. Saudi Arabia consumes about 65 percent of all pharmaceutical imports to the Gulf Cooperation Council market. Total pharmaceutical consumption was estimated at \$1,351

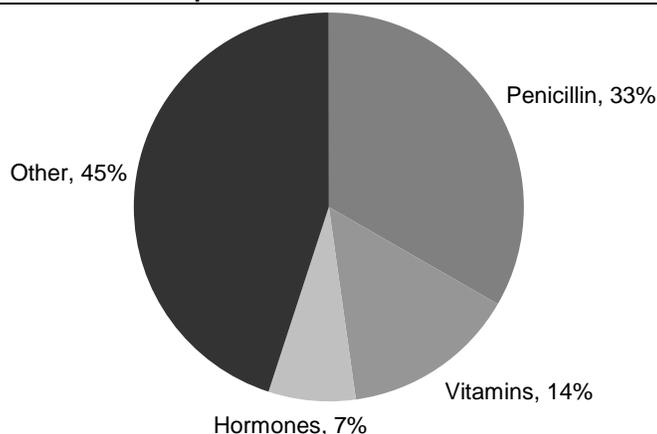
<sup>14</sup> Business Briefing Pharmatch 2002: The Pharmaceuticals Sector in Israel.

million in 2001, registering more than 15 percent increase over the previous year. Imports accounted for nearly 83 percent of the market. Local production, however, is gaining market share. With a population that is rapidly expanding, at a rate of 3.3 percent per year and expected to reach 30 million by 2010, coupled with a growing demand for improved health care, the Saudi pharmaceutical market offers potential for both established and new-to-market companies.

There are two pharmaceutical markets in Saudi Arabia, both of which are price-controlled by the Ministry of Health: the public and the private sectors. The public sector accounts for 42 percent of the market and consists of hospitals, clinics, and primary health centers. It usually issues tenders, negotiates prices, and generally disburses medicines free of charge. Generally, government allows a 15 percent margin for distributors, while retailers charge consumers another 14 percent.

Saudi Arabia imports most of its pharmaceutical requirements from the U.S., Western Europe, and the Arab countries. Imported pharmaceuticals are divided into categories as illustrated in Figure 2.3.<sup>15</sup>

**Figure 2.3: Saudi Pharmaceutical Imports**



Major diseases in Saudi Arabia include gastrointestinal disorders, tuberculosis and other respiratory diseases, malaria, diabetes, ophthalmologic diseases, and cardiovascular diseases. Some estimates put the number of people affected by diabetes at 12 percent of the total population.

All pharmaceutical companies must be registered with the Ministry of Health, which also approves and licenses both companies and their medicines sold in Saudi Arabia. The Saudi pharmaceutical industry mainly focuses on generic drug manufacturing rather than research and inventions. Local manufacturers import their ingredients either from their licensors or various other suppliers worldwide.

Saudi Arabia has more than 4,600 registered drugs, both generic and patented. Many of the generic drugs are manufactured locally under license. There are around 200 local pharmaceutical companies registered with the Ministry of Health, but only 20 of them control close to 70 percent of the market.

<sup>15</sup> USDOC, U.S. Commercial Service. "Industry Sector Analysis: Drugs and Pharmaceutical Products in Saudi Arabia," January 2002.

European companies dominate the Saudi import market with a 70 percent market share, followed by Arab manufacturers at 12 percent, the U.S. at nine percent, and other suppliers at eight percent.

As of 1999, Saudi Arabia's main suppliers in the region include the United Arab Emirates (UAE) at \$49 million, Jordan, with \$42 million, and Egypt, at \$17 million. The Gulf Pharmaceutical Company (Gulphar), based in UAE, is a major exporter to the region and has a competitive edge over other exporters in the Saudi market. Under a GCC agreement, pharmaceutical producers in member countries are not required to obtain registration or license to export medicines to Saudi Arabia.

### **Egypt**

The Egyptian drug industry focuses mainly on drug manufacturing rather than research. During 1999, the value of the pharmaceutical market was estimated to be \$1.45 billion.<sup>16</sup> Egypt is considered to be the largest supplier of pharmaceuticals in the Middle East, accounting for 30 percent of the MENA region. Pharmaceutical consumption has increased dramatically since the industry was established, with an annual growth rate of 14 percent throughout the last decade. A major driver for the growth of the pharmaceutical industry is Egypt's large population of 70 million, which is growing annually by 2.1 percent. Approximately 60 percent of the population is younger than 25 years. This, combined with rising health awareness, will stimulate demand for preventative OTC drugs, such as vitamins, which are sold at the industry's highest margins of around 40 percent.

Local production, based on 85 percent importation of raw materials, satisfies 92.5 percent of local demand. The remaining 7.5 percent are primarily advanced drugs for cancer, as well as cardiovascular and insulin disorders, for which local technology is not available. Local manufacturers import their ingredients either from their licensors or from numerous suppliers worldwide. The main sources for imports of both pharmaceutical raw materials and some final products are France, Switzerland, Belgium, Germany, and the U.K.

Section 3.3 compares Jordan to these regional players in terms of attractiveness for inward investment in the pharmaceuticals industry.

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<sup>16</sup> USDOC, U.S. Commercial Service. "Industry Sector Analysis: Drugs and Pharmaceuticals in Egypt," 2000.

## CHAPTER 3: SECTOR ANALYSIS

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### 3.1 Investment Location Criteria

Investors make decisions to relocate their factories or expand their businesses in new locations based on a variety of reasons related to achieving certain company objectives. These objectives necessitate adherence to a certain set of critical criteria that investors in a selected sector take into consideration when deciding on a location for setting up shop. The criteria can either be technical, or specific to a firm, industry, or country. This section's discussion contains a listing of the most relevant of these criteria for the pharmaceuticals sector.

The primary considerations in plant location for highly capital-intensive bulk or fine-chemical pharmaceuticals are as follows.

- Speed and efficiency with which plant can be constructed and commissioned
- Quality and availability of local labor force
- Taxation level and conditions for profit repatriation

Location costs, transport costs, and even labor costs are relatively unimportant.

For finishing plants, such as those that produce most generics, these three traditional cost considerations are more critical.

At present, the most favored locations for major bulk pharmaceutical plants are Singapore, which allows production for 10 years with no tax, Puerto Rico, with less than six percent tax, and Ireland, which will maintain a 12.5 percent tax rate until 2025.

Because of the huge cost involved in bringing a new drug to market, a low corporate tax rate is a major boost to achieving a quick recovery of costs incurred. At present, the largest single-site biotechnology plant in the world is under construction near Dublin, Ireland. The total cost of the plant will be approximately \$1.5 billion, and it will take more than five years since its inception in 1999 to build and commission.

Therefore, international pharmaceutical companies look at a number of factors when considering a location for a plant, especially when sizable investments are involved.

Following is a list of the criteria used by a pharmaceutical MNCs to evaluate regions or countries prior to making decisions on direct investment in them.

- Perceived country stability
- Human resources
  - Availability of skilled workforce (e.g., R&D, management/operations)
  - Workforce attitude and wages
  - Workforce skills
- Market access and market size
  - Local market size and accessibility
  - Access to regional and international markets
- Infrastructure
  - Transportation/telecommunication/sub-suppliers
  - Land and buildings availability/cost and suitability
- Taxation
  - Taxation rates/profit repatriation/double taxation agreements
  - Financial incentives
- IPR protection (i.e., regulatory environment and quality standards)

### 3.2 SWOT Analysis

The following sections highlight the strengths, weaknesses, opportunities and threats of the pharmaceuticals sector in Jordan, and how they relate to the above list of investment requirements as set by investors.

SWOT analysis is one of the strategic analysis tools that help organizations and companies understand their competitiveness in the ever-changing business environment. It looks at internal factors (Strengths and Weaknesses), as well as at external factors (Opportunities and Threats) posed by the environment and the competition.

#### **Strengths of Jordan's Pharmaceuticals Sector**

Extensive regional export base, coupled with excellent regional reputation

Jordanian pharmaceutical manufacturers export 70-80 percent of local production to more than 40 markets, primarily Arab countries. These exports have grown at an annual average rate of 14 percent since 1991.

Low risk on investment

Jordan has available a number of new and top-quality production facilities that use state-of-the-art equipment, which implies that foreign investors would not have to invest in fixed assets. This fact is an advantage in attracting FDI, in light of the trend for international companies not to invest heavily in land and building, and especially since such facilities can be utilized almost immediately upon acquisition. This is particularly helpful also in instances when the international investor is looking for a relationship such as contract manufacturing or manufacturing under license.

High standards of local producers

Several of the 17 companies operating in Jordan's local market are FDA or cGMP certified. Most other producers are in the process of pursuing equivalent accreditation to enable them to access non-traditional markets, produce under license for international firms, and secure joint ventures with global players.

Zero tax on profits generated by exports until 2007 and possibly beyond

Income tax is a major concern of pharmaceutical companies worldwide and a main factor in production relocation decisions. Jordan enjoys a WTO exemption that allows it to charge zero income tax on export earnings until the end of 2007, which may be extended based on negotiations between Jordan and the WTO.<sup>17</sup>

IPR protection

Jordan's accession to the WTO, the signing of the TRIPS agreement, and the ratification of JUSFTA have led to the passage of a strong IPR law in the country. Implementation of this is steadily improving. International companies contemplating cooperation with pharmaceutical companies in the region find Jordan a unique place to invest and operate due to these laws and agreements.

Highly-skilled, low-wage workforce

The workforce in Jordan at the operator level seems to be well-educated and readily-available, and skilled in development and production. For example, there are more than 6,000 pharmacists already in the market. Salaries for pharmacists and chemists are considerably

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<sup>17</sup> This is based on the decision of the WTO's Committee on Subsidies and Countervailing Measures, dated 22 November 2002.

lower than European wages and lower than those offered in Gulf countries. Worker productivity also seems to be adequate, especially among female workers.

#### Sufficient infrastructure

Transportation infrastructure is adequate in Jordan, while the country's IT infrastructure is considered among the best in the region. IT infrastructure is sophisticated enough for international companies that need voice, data, and online communication with their home office and with customers and suppliers.

#### Extensive knowledge of local and regional market

Jordanian firms have strong local and regional marketing capabilities and are strategically placed to provide key marketing information and partnership opportunities to American firms in the traditionally hard-to-monitor MENA market.

#### Existence of Bolar provision in Jordan

Jordan's Bolar provision allows development work to start on a generic equivalent of a patented medicine prior to the expiration of the patent. This privilege is currently not available to European production and development plants located in the E.U., with the exception of Hungary. A European company performing this development and production work in Jordan may do so prior to the patent expiry date. Then, on the expiry date, the medicine can be immediately marketed and sold in the E.U.

### **Weaknesses of Jordan's Pharmaceuticals Sector**

#### Low investment in R&D

Most of Jordan's producers are exclusively producers of generics, which account for 95 percent of local production, with the remaining five percent of products being produced under license. While some drug development work is being conducted locally, none of the 11 drugs patented in Jordan have received patent recognition abroad.

#### Product concentration

Most local producers focus on the same product categories, such as anti-ulcerants and antibiotics, due to their high profit margins and high local demand. This has led to product overlap, a narrow scope of expertise, and intense domestic competition.

#### Limited economies of scale

Due to product concentration and overlap, as well as the fragmentation of the market caused by the large number of players, Jordan's pharmaceutical companies do not enjoy economies of scale. This means that Jordanian producers have not become the efficient and cheap producers that their low-cost structure, in terms of skilled labor costs and taxes, would allow them to. It also means that they suffer at the same time from excess production capacity.

#### Low local market share

Local production in Jordan accounts for only 40 percent of the relatively small local market. With a small home base, local producers are vulnerable to regional uncertainties. This in turn limits their ability to invest and their attractiveness as partners or licensees of foreign manufacturers.

#### Small domestic market size

Jordan's small domestic market limits its attractiveness as a stand-alone destination for pharmaceutical investors.

#### Underdeveloped cluster of weak supporting institutions and supplier networks

The professional services sector catering to the pharmaceutical enterprises is relatively underdeveloped. There are no specialty firms dealing with patent process litigation or patents protection, nor is there a network of technical services for strengthening the operational standards within pharmaceutical companies.

#### Limited double taxation treaties with E.U. countries

France is the only European country that currently has a double taxation arrangement with Jordan. European companies prefer their investment locations to have such arrangements made with a country with lenient taxation regulations, such as the Netherlands. This allows them to repatriate their profits to Europe without further taxation.

#### Limited managerial skills

Most domestic producers, with the exception of the top tier, lack strategic vision and require direction at the level of upper management.

#### Restrictive drug pricing policy

MOH requires any product manufactured locally to be priced at a maximum of 80 percent from its originator price for the local market. In addition, if this product is exported to certain traditional markets, such as Saudi Arabia, it has to be sold at a price equal to its Jordanian price, which means less profit to the exporter. This makes Jordan less attractive for FDI since Jordan's cost advantage would be lost due to lower selling prices.

### **Threats to Jordan's Pharmaceuticals Sector**

#### High reliance on traditional export markets

Ninety percent of Jordan's exports go to Iraq, Saudi Arabia, and Algeria. These markets, such as Iraq, are prone to imposing TBTs, as well as being relatively unpredictable. Jordan's pharmaceutical producers can limit this exposure by tapping new non-traditional markets.

#### Regional political instability

The MENA region is considered politically unstable, and Jordan has relatively little influence on current events. As a result, international investors are often reluctant to approach the region.

#### High international industry standards and strict regulations

In order to tap non-traditional export markets in the U.S and the E.U., Jordanian manufacturers have to obtain FDA, MCA, and other regulatory approvals, in addition to complying with current GMP. Jordanian manufacturers have to invest more in R&D, process development, and product development in order to achieve these requirements, at a time when many local companies are experiencing cash-flow crises.

#### Brain drain to Arab Gulf countries

Many Jordanian pharmaceuticals experts that get trained and acquire substantial know-how and expertise in Jordanian firms are lured by much higher salaries to work in the Arab Gulf countries representing a constant brain drain and lost resources for the industry.

#### Instating Bolar provision into E.U. law

The process toward the introduction of a comprehensive Bolar provision into E.U. law has already started. Jordanian firms will suffer a loss of a potential market once the process is completed.

## **Opportunities for Jordan's Pharmaceuticals Sector**

### **Relocation from Europe due to wage and cost pressures**

Pharmaceutical companies operating in Europe are under pressure to reduce production costs. A number of such companies have relocated or made the decision to relocate to less expensive locations in Eastern Europe, the Baltic States, and India. Jordan could be added to this list of potential locations.

### **No comprehensive Bolar provision in Europe**

Until a Bolar provision-like law is established in the E.U. or in all of its member countries, Jordan can attract investments from European generics manufacturers wishing to launch their products immediately after patent-expiration. Since this window of opportunity might be closed in the very near future, Jordanian pharmaceuticals should try to link up with European manufacturers as quickly as possible, given that approximately 35 leading patents will expire soon. European generic producers will not be able to perform clinical testing for these drugs in Europe, since even if the Bolar provision is instated, it will come too late for this round of patent expiry, so they can do it in Jordan.

### **Expansion of global generics market**

The world generics market is expected to soar in value from \$17 billion in 2002 to \$34 billion by end of 2004, when some 35 leading molecules will be out of patent. Getting in fast would offer a golden opportunity for Jordanian producers to ensure the industry's long-term sustainability.<sup>18</sup>

### **IPR protection**

Accession to the WTO, the signing of the TRIPS agreement, and the passage of a stronger IPR law than other developing countries, provide Jordanian companies with a better chance to penetrate non-traditional markets, since local firms are well positioned to fulfill international regulatory requirements and standards.

### **Jordan's newly-passed toll and contract manufacturing law**

This law ensures that any Jordanian company manufacturing a product under contract from another local or international company is abiding by the specific requirements of that company to produce such a product, and thus receives its approvals and certifications. Since new Iraqi legislation requires drugs to have FDA approval, U.S. companies wishing to export to Iraq can manufacture in Jordan using the facilities of the FDA-approved local companies and export to Iraq.

JIB can use such an analysis of opportunities and threats to determine target markets and marketing messages for its promotional plans, as demonstrated in Chapter 6. In addition, it is important that JIB monitors local and international developments with regard to such opportunities and threats, and adapts its promotional plans accordingly.

## **3.3 Competitive Benchmarking**

On the basis of the investment decision criteria in Section 3.1 and the SWOT analysis in Section 3.2, Jordan's competitiveness was compared to that of major regional pharmaceutical countries, as well as India. Ranking was determined by how well each country satisfies the specific criterion, with the letter "A" denoting the highest level of satisfaction. Table 3.1 summarizes these results.

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<sup>18</sup> AME Info. "Jordan's Pharmaceuticals Go Global." ([www.ameinfo.com](http://www.ameinfo.com))

**Table 3.1: Competitiveness of Jordan's Pharmaceuticals Sector**

	Jordan	India	Israel	Saudi Arabia	Egypt	Turkey
Local workers						
Availability	A	A	C	C	A	B
Cost	B	A	C	C	A	B
Technical skills	B	B	A	C	B	B
Investment incentives (subsidies)	C	C	C	B	C	C
Infrastructure						
General (a)	A	B	A	B	B	B
Hi-tech plant and building	A	C	B	C	C	C
Taxation						
Rates and profit repatriation	A	B	B	A	A	B
Double taxation agreements	C	C	B	C	C	C
IRP protection	A	C	B	B	C	B
Perceived country stability	B	B	B	B	B	B
Local market size	C	A	B	B	B	A
Market access						
Regional markets	B	N/R	C	C	B	N/R
U.S.	C	C	A	C	C	C
E.U.	C	C	B	C	C	A

(a) Includes transportation quality, extent, and efficiency, the quality of telecommunications service, and the reliability of the electric grid. As such factors are difficult to measure quantitatively, qualitative information in the form of testimonials from manufacturers is used as an indicator.

The following observations that relate to investment promotion can be made from Table 3.1.

- Jordan can market itself strongly for its skilled workforce, especially pharmacists.
- Jordan can market itself as a location with not only reliable infrastructure, but also state-of-the-art pharmaceutical plants and equipment are available.
- Jordan can also market itself strongly as the country with the best IRP laws in the region and among other competitor countries.
- In terms of labor costs, Jordan is less expensive than such players as Israel, Turkey, and Saudi Arabia, but more expensive than Egypt and India.
- In terms of taxation rates and double taxation agreements, Jordan scores well in comparison to the countries on the list, but still needs to conclude double taxation agreements with a number of European countries.
- In terms of perceived country stability, Jordan is perceived as relatively unstable, due to its location between Iraq and Israel/PNA. Many other developing countries in the table are also perceived as relatively unstable. With proper promotion, investment promotion officers can dispel this misconception.
- Jordan's main weaknesses are its small, fragmented local market, its lack of direct incentives for R&D and for the pharmaceuticals sector, and its underdeveloped pharmaceutical cluster. The main implication of these weaknesses is that Jordan's attraction as stand-alone investment location is limited since it is hard to achieve economies of scale. This is not the case in other competitor locations, such as India.

As a part of its promotional effort, JIB can emphasize Jordan's strengths and counter inaccurate perceptions about its weaknesses. In order to make such arguments for each strength and weakness, JIB needs to use a variety of points, all of which must be supported by current and specific evidence from appropriate data sources.

Using two of Jordan's main weaknesses as examples – its perceived instability and small local market size – the following table demonstrates how the promotion officer can apply this technique to all strengths and weaknesses.<sup>19</sup> It includes generic points that can be used to

<sup>19</sup> Suggested solutions and responses to Jordan's other weaknesses are provided in section 4.2

support arguments emphasizing strengths or countering weaknesses, data sources for evidence to support such points, and specific examples of such points. JIB needs to continuously explore points that it might make, as well as the data sources that provide evidence to support such points.

**Table 3.2: Supporting Strengths and Countering Weaknesses**

1.	<b>Weakness</b>	Perceived country stability
1.1	<b>Generic Point</b>	Actual foreign pharmaceutical investment in Jordan, which demonstrates confidence of other investors in the stability of the country.
	<b>Data Source(s)</b>	Industry analysis and JIB investment statistics
	<b>Specific Example</b>	Watson Pharmaceuticals of California has acquired a 21 percent stake in Jordan's Pharma International.
1.2	<b>Generic Point</b>	Real economic growth, which is an indicator of country stability.
	<b>Data Source(s)</b>	Central Bank Monthly Bulletin
	<b>Specific Example</b>	The economy has been growing at the rate of 4.7 percent and 5.0 percent in real GDP terms in 2001 and 2002 respectively, despite the turmoil in neighboring countries.
1.3	<b>Generic Point</b>	Progressive national leadership and good governance, which is a guarantee of future country stability.
	<b>Data Source(s)</b>	Speeches made by H.M. King Abdullah II, especially in recognized, international venues. (Found on government web sites) Articles written about Jordan, especially in recognized, international periodicals. (Found in international press)
	<b>Specific Example</b>	His Majesty King Abdullah II is keen on pursuing actions that consolidate stability and economic growth, as demonstrated by the following quotations from a speech he delivered at Columbia University in September 2000. "We pioneered a democratic experience that is built on solid institutions of law, accountability and justice. We have also provided an example for making peace with our neighbors, a peace that upholds justice and provides security, a peace that creates effective frameworks for regional cooperation in resource allocation." <sup>20</sup>
2.	<b>Weakness</b>	Small domestic market size
2.1	<b>Generic Point</b>	The Jordanian industry is export-oriented and has strong presence in the regional market.
	<b>Data Source(s)</b>	Industry sources, newspapers, MIT publications
	<b>Specific Example</b>	Jordan exports more than 75 percent of its drug production to regional markets and is increasingly exploring to the E.U. and U.S. markets.
2.2	<b>Generic Point</b>	Pharmaceutical demand is growing in the local and regional markets.
	<b>Data Source(s)</b>	Central Bank of Jordan, US Department of Commerce (USDOC) for the Saudi Arabian market
	<b>Specific Example</b>	Demand for pharmaceuticals grew by 10 percent in Jordan in 2002, while demand has been growing at 15 percent per year in Saudi Arabia.

<sup>20</sup> <http://www.jordanembassyus.org/09102000001.htm>

## CHAPTER 4: RECOMMENDATIONS

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### 4.1 Subsectors and Niches

In order to be competitive in today's pharmaceuticals industry, a large production capacity that allows for economies of scale, generous investments in R&D, good infrastructure, and marketing expertise are all requirements. In addition, a reasonable cost structure, compliance with IPR regulations, and the acquisition of relevant industry approvals and standards are also critical for any export-oriented company. As the industry becomes more global, these factors acquire even greater importance.

Jordan's weaknesses, such as a small domestic market and limited R&D, could be compensated by the current availability in the country of a number of new and top-quality production facilities, an extensive regional export base enhanced by zero tax on profits generated by exports, and the availability of a skilled and inexpensive workforce.

In addition, Jordan's domestic healthcare spending is poised to increase, as its population grows by an average rate of 2.8 percent each year. Serious attempts by local firms to produce drugs under license, to acquire FDA and other accreditations, and enter nontraditional markets, as well as to improve their marketing techniques and define their strategic vision have enhanced and will further enhance Jordan's ability to attract FDI for pharmaceuticals.

Jordan has competed very successfully in the production of generics for the local and regional markets. Most of these drugs have been concentrated in a few therapeutic groups, such as antibiotics and anti-ulcerants.

However, the technical expertise of Jordan's workforce and of its local firms offers the opportunity to expand production into non-traditional product categories and different dosage forms. Currently, the most common dosage forms produced in the local market are syrups, tablets, and capsules. However, this strategic product diversification can only happen, according to JAPM and industry experts, if Jordan manages to attract a greater level of FDI.

Given Jordan's strengths, its existing industrial base, and level of expertise, as well as trends we have outlined in the global pharmaceuticals market, the country has the potential to become competitive in manufacturing the following product groups or niches, which JIB should initially target for investments.

- Antibiotic, anti-ulcerant, and any other generic drugs whose patents are set to expire over the next few years, for export to the European market, in order to maximize Jordan's Bolar provision advantages. There are currently 32 such leading molecules and drugs.
- Hormones, such as insulin, that require sophisticated technology and economies of scale to successfully produce, and for which global demand and market potential exist as identified by industry experts. Jordan can achieve the necessary economies of scale through an enhanced emphasis on exports.
- Anti-AIDS drugs, which also require sophisticated technology and are mostly ethical drugs, can be exported at cheap prices to poor countries where the epidemic is widespread, especially in Africa, without infringing IPR laws, according to the Doha Declaration of the WTO. Since developing and producing these drugs is very costly in developed countries, MNCs can set-up joint ventures (JV) or produce then under contract in Jordan to serve these markets at much lower costs, without sacrificing quality and standards.

- Anti-cancer drugs, which also require sophisticated technology, for which there are large and expanding local and regional markets, which can be better served by the lower cost basis for production in Jordan.
- Vaccines and sera, which are currently produced by less than five firms worldwide, require a very expensive cold storage environment chain which makes them costly to transport. Because of Jordan's relative proximity to South Asia and Africa, two of the largest markets for these drugs, it could be an attractive location for JVs that seek to produce for these markets.
- Biotechnology drugs, which are ethical by definition, are based on blood antibodies and antigens derived from DNA. They are increasingly under demand and require sophisticated expertise, large investment, and different technology than what is currently available in Jordan, and so would require JVs or greenfield investments.
- Herbal medicines, as well as natural products increasingly in demand in Europe and other developed countries, face fewer restrictions and requirements for production than other drugs. Jordan's horticultural variety offers lucrative opportunities to develop alternative products.

Hormones, anti-AIDS, and anti-cancer drugs are currently only produced by a few large ethical firms and would require independent premises to manufacture in Jordan, even though the machinery used is similar to that currently used in the country to produce anti-ulcerant and antibiotic drugs.

In addition to these product groups, Jordan has the expertise and ability to attract FDI to two additional sets of pharmaceutical activities.

- New dosage forms, such as injectables and patches, are rarely produced in Jordan even though they do not require any expertise over and above what already exists in the market. This is because their production would require separate production lines and separate plants, which in turn would require the kinds of substantial financial resources that can be obtained through FDI.
- Phase IV is typically the most expensive phase in clinical studies, as they need human volunteers and periodic blood monitoring, which are very expensive activities in industrial countries. Jordan recently passed a law that would such studies to be conducted by local and foreign firms. This part of the drug development process takes time and so is usually done either in-house by a pharmaceuticals firm either in-or as part of a JV. As Jordanian research centers, such as IPRC, already offer these services, there is an opportunity for Jordan to attract JVs in this area, as its cost basis is substantially lower than other in other locations.

Jordan's pharmaceuticals industry can offer a variety of modalities for FDI investment.

- Greenfield FDI, through which a foreign company sets up shop and operations from scratch
- JVs between local and foreign to produce new product categories
- Contract or toll manufacturing, through which a foreign firm subcontracts a Jordanian firm to manufacture some or most of the components of one of its drugs, whether ethical or generic, in order to lower production and development costs
- Licensing agreements, through which a Jordanian company manufactures a drug for a foreign one under license and sells it in either the local or regional markets, in order to make use of Jordan's lower costs of production, proximity to a certain market, or exporting presence in the target market
- A financial stake in a local pharmaceuticals company which needs additional financial resources to expand into new products or dosage forms, or lacks the financial means to attain certification to export its products to non-traditional markets

Based on the discussion above, it can be concluded that the following export markets offer good prospects for Jordanian pharmaceuticals.

- Existing regional markets. There are two ways to approach these markets: continue the existing pattern of exporting Jordanian generics, or formulate partnerships and produce under license or contract manufacturing for U.S., European, and Japanese firms that wish to market their products in the MENA region.
- European generics market. JVs or cooperation with European firms might be the best way for Jordanian firms to penetrate this market.
- African and South Asian markets for anti-AIDS drugs and vaccines, under contract from European or U.S. companies
- U.S. generics market. This market is a medium-term prospect.
- Selected ethical drugs markets, such as biotechnology and some anti-AIDS drugs

Table 4.1 summarizes the targeted product groups for FDI, as well as the suggested type of investment to target, and the potential export market for each.

**Table 4.1: Recommended Target Matrix**

Target Niche and Form	Investment Type	Export Market
Off-patent generics (2004)	JV, license, contract	Western Europe
Hormones	JV, contract	Europe, MENA
Anti-AIDS drugs	JV, contract	Africa
Anti-cancer drugs	JV, contract	Jordan, MENA
Vaccines and sera	JV, contract	Africa, South Asia
Biotechnology drugs	JV	Western Europe, U.S.
Herbal medicines	JV, license	Western Europe
Patches, injectibles	Financial investor	All
Phase IV clinical studies	JV	Western Europe, U.S.

## 4.2 Outlook for Future Investment and Trade

To be able to make a reasonable forecast of future FDI inflow into Jordan, a number of issues need to be taken into consideration like past trends, Jordan's strengths and weaknesses, and the opportunities and threats that arise from the changing environment in which the global pharmaceuticals industry operates.

A review of investment trends in Jordan shows that all of the capital for pharmaceutical ventures in Jordan has been local, except for the recent acquisition of a share in United Pharmaceuticals by California's Watson Pharmaceuticals.

Analysis of the three potential markets for attracting FDI into Jordan reveals the following about investors in each market.

**Global ethical** market players, when evaluating a site for investment and JVs, require a large local market, access to a large regional market, a local workforce that is highly skilled in R&D, a highly-developed support cluster, assurances on long-term investment incentive privileges by local authorities, and commitment by the government for huge investment in supporting infrastructure and facilities. None of these requirements are currently available in Jordan. Therefore, competing in this market should remain a long-term goal.

The **U.S. generics** market is easier to penetrate than the ethical market. However, while its characteristics are similar to the generics market in Europe, as discussed below, a number of reasons make it more difficult for Jordan to access in the near future.

- The FDA's stringent regulations and approvals process make certification more difficult to attain in the U.S. than in Europe, and they require greater financial resources.

- U.S. generics manufacturers lack awareness about the status and capabilities of Jordan's pharmaceutical sector and companies.
- The Bolar provision is currently availability for U.S. companies.

The **European generics** market is the second-largest market for generics in the world. Despite the time and effort local companies must invest to attain the certifications and skills required to access it, it should be Jordan's leading target market for exports and FDI attraction for the following reasons.

- Its players are more aware of the Jordanian pharmaceutical industry, as a number of factories have already obtained the certification required to sell their products in Europe, and a few of them have already started producing under license for European companies.
- Jordan's relative proximity to Europe allows firms there to become familiar with Jordan's industry, which Jordanian firms can capitalize on by offering their state-of-the-art facilities as manufacturing bases for European companies, which can maintain their R&D and management offices in Europe.
- The incentive for E.U. generics producers to cooperate with Jordanian firms in the form of contract manufacturing, production under license, or joint ventures stems from the inexistence of Bolar provisions in Europe currently, as well as the cost pressures that these companies are currently feeling in Europe. This creates a perfect match between Jordan's current strengths and the European generics manufacturers' current weaknesses.

In summary, the generics market is experiencing high growth, offers great prospects in the near future, and is the one in which Jordan can compete. Therefore, attracting FDI to Jordan from manufacturers in the generics market, especially European ones who are geographically closer and whose market is easier to access, is the route we recommend to promote investment in Jordanian pharmaceuticals. (See Annex 13 for further information regarding generics manufacturers.)

One would expect that future investments would come from the following sources, in order.

- Manufacturers of generic pharmaceuticals in Europe
- Manufacturers of generics anti-cancer drugs and hormones in the U.S.
- Ethical manufacturers of vaccines, anti-AIDS drugs, and biotechnology products

### **4.3 Constraints and Remedies**

#### **Constraints**

Our interviews with local market participants and meetings with relevant staff in government ministries, when reviewed in light of the with the results of the SWOT analysis we performed, revealed a set of constraints that affect or may affect the growth of the pharmaceuticals sector in Jordan, as well as its ability to attract FDI.

The main constraints that were identified are listed below, along with their perceived levels of impact on the industry, based on statements made by interviewees and relevance of each constraint to the relocation motives listed in Section 3.1. Impact levels are divided into three categories A, B and C, with A denoting the highest level of impact on the growth of the industry.

**Table 4.2: Constraints to Growth of Pharmaceuticals Industry in Jordan**

Constraint	Level of Impact
Fragmented local market	A
Underdeveloped local cluster	A
Regional non-tariff barriers to trade	A
Inadequate local capabilities in R&D	A
Lack of local skills in licensing	B
Limited local skills in marketing and management	B
Inadequate standard of packaging services	B
Lack of clarity about the accounting treatment of R&D expenditure	B
Limited investment incentives for international companies	C
Limited number of double taxation treaties with European countries	C
Lack of marketing expertise in European and U.S. markets	C

These constraints can be grouped into three different categories, as follows.

- Policy constraints
  - Regional non-tariff barriers (A)
  - Lack of clarity about the accounting treatment of R&D expenditures (B)
  - Limited number of double taxation treaties with European countries (C)
  - Limited investment incentives for international companies (C)
- Structural constraints
  - Fragmented local market (A)
  - Underdeveloped local cluster (A)
  - Inadequate local capabilities in R&D (A)
  - Lack of local skills in licensing (B)
- Marketing and management constraints
  - Inadequate standard of packaging services (B)
  - Limited local skills in marketing and management (B)
  - Lack of marketing expertise in European market (C)

### Remedies

In light of these, following are some suggested remedies that aim to address the current constraints to the growth of the pharmaceuticals industry in Jordan and seek to improve the environment within which the industry operates. These remedies are divided into the same three categories as the constraints listed above.

#### Policy Constraints

Double taxation agreements are required with relevant E.U. countries to allow profits to be repatriated without extra taxation. At present, France is the only E.U. country with which Jordan has such an agreement. An agreement has been agreed, but not yet signed, with the Netherlands. This agreement would be a major advantage for Jordan, as protection from double taxation with the Netherlands would be more attractive to pharmaceutical investors than the same protection with France.

Clarification is also required regarding the accounting treatment of R&D activities in pharmaceutical companies involved in production. The law calls for such activities to be tax-deductible, but actual practice does not bear this out. Ensuring that R&D is treated according the law would encourage existing companies to increase such activities, adding to the advantages Jordan has to offer for international pharmaceutical investors.

### Structural Constraints

The establishment of a pharmaceutical auditing authority would be of major benefit to potential investors, as well as to the local industry. Such an authority should have the expertise to certify local factories according to international standards. Such an authority would also ensure that local companies satisfy other international requirements. In this way, the image of Jordan's pharmaceutical sector would improve not only in the MENA region, but also worldwide.

In addition, strengthening cooperation between the universities, research centers, and local pharmaceuticals players is also essential to solidify the local support cluster and allow for greater R&D and for the development of substantial forward and backward linkages. This can be achieved through encouraging the creation of joint research projects and centers that are both academically and commercially viable.

### Marketing and Management Constraints

Marketing pharmaceuticals in the E.U. not only requires getting the proper certifications, but also a lot of effort in understanding each local market and establishing links to retailers. Therefore, setting up an entity through which Jordanian companies can cooperate on marketing in Europe, which is linked to specialized European marketing firms, would be cost-effective and would provide the knowledge required to compete in the European market. It can also give recommendations on how to better package products for these markets.

## CHAPTER 5: THREE-YEAR PROMOTIONAL STRATEGY

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### 5.1 Core Message

Jordan's most significant advantages over rival pharmaceuticals producers are its availability of a well-educated, skilled, and inexpensive workforce; top-quality production facilities with state-of-the-art equipment that are ready for use; strong IRP protection; zero tax on profits generated by exports, a Bolar provision, and adequate infrastructure. In light of these, the following is a core promotional statement that JIB can build on to articulate its own final core message.

*Jordan's readily-available, skilled and inexpensive workforce; top-quality production facilities, and high standard of IPR protection make it possible for foreign investors to easily locate in this pharmaceuticals market, which is growing both locally and within the region. Jordan's Bolar provision and proximity to Europe also make it possible to export there. Profits derived from these and all export operations are exempt from income tax and may be fully repatriated out of the country.*

*Jordan's pharmaceutical industry already enjoys an international reputation for quality, as evidenced by the extensive regional presence of the country's products and firms, many of which have already earned certification in the U.S. and Europe.*

### 5.2 Main Selling Points

Based on the SWOT analysis outlined in Section 3.2, the following are the points most likely to attract FDI to Jordan's pharmaceuticals sector.

- Low-risk investment
- Highly-skilled and low-wage workforce
- Zero tax on profits generated by exports
- High standard of local producers
- Strong IRP legal protection and implementation
- Developed infrastructure for industry (roads, electricity, communication)
- Extensive regional export base and favorable perception of Jordanian product quality
- Existence of a toll and contract manufacturing law

The following are additional selling points that are relevant to specific target markets.

- Jordan's Bolar provision
- Proximity to Africa and South Asia

The relative importance of each of the above points depends on the target market under consideration for a specific investment promotion event. Thus, if an outward mission to Germany is planned, highlighting Jordan's Bolar provision, quality of production, labor skills, certifications and infrastructure is essential. However, for U.S., investors, Jordan's appeal when compared to other locations is its proximity Africa and South Asia, in addition to its expertise and certifications.

### 5.3 Target Markets

We recommend that initial efforts to promote investment in Jordan's pharmaceuticals industry focus on attracting European manufacturers of generics who would like to make use of the existence of a Bolar provision to manufacture some of the 30-plus drugs that will go off-patent by 2005.

At a later stage, U.S. generics manufacturers of anti-cancer drugs and hormones could be attracted to Jordan to manufacture these drugs and sell them in epidemic-stricken countries, primarily in Africa, as allowed for by the Doha Declaration of the WTO. Jordan's proximity to these markets, its good level of expertise and low costs, would enable manufacturers to comply with the Doha mandate to sell cheaply in such markets.

Finally, ethical manufacturers of vaccines, anti-AIDS drugs, and biotechnology products can be attracted to Jordan in the medium term.

In other words, Jordan's first-year strategy to promote investment in pharmaceuticals should target investors in Europe interested in the production of generics, while the second and third years can include broader overseas missions to Europe and the U.S.

Jordan's major target markets for investment promotion in Europe are the U.K. and Germany. While France is a major producer of pharmaceuticals, it is not a major investor in overseas manufacturing. (Its overseas investments are more commonly in infrastructure.) Spain generally attracts inward investment, Italy is not a major outward investor, and the Benelux and Nordic countries are relatively small markets. Therefore, Jordan's missions to Germany and the U.K. should be given priority.

The U.S. pharmaceutical industry is firmly based in the states of New Jersey, Pennsylvania, and New York. The biotechnology industry is located primarily in California and Massachusetts. There is some concentration of pharmaceutical firms in the Carolinas. However, these are primarily the R&D arms of larger pharmaceutical firms. Therefore, a Jordanian mission to the U.S in the second and third years of the investment promotion plan should target producers of generics in these states.

Gulf states should also be considered as potential sources of new financing, and therefore as primary targets for promotion. However, it is not recommended that JIB dedicate specific trips to locate investors in these countries. It can promote investment opportunities in this sector to business delegations and persons who are looking for investment opportunities in Jordan.

## 5.4 Target Investors

Jordan's target investors in the pharmaceuticals sector are as follows.

- European generics manufacturers
- American generics manufacturers
- Global ethical manufacturers

The targeted average investment size should be around \$5-7 million, in line with the size of existing ventures, such as Watson Pharmaceuticals' stake in United Pharmaceuticals. Average employment per plant should be around 75 employees. A brief profile of the type of venture that would make an attractive destination for FDI from overseas investors is presented in Table 5.1.

**Table 5.1: Profile of Ventures Attractive to Targeted Investors**

Project Size (including buildings)	\$5-7 million
Employment	75 workers
Markets	European generics market or Africa
Typical Product Categories	Anti-ulcerant and anti-biotic drugs. Drugs going off patent in 2005. Vaccines, hormones, anti-AIDS/cancer drugs.

## 5.5 Annual Investment Targets

This focused promotional plan starts by targeting new pharmaceuticals investments of \$5-7 each in size, which would employ around 75 workers, in the markets identified above. The following table summarizes the amount of investment that might be expected as a result of implementing this targeting effort.

**Table 5.2: Suggested Annual Investment Targets**

Type of Project	Number of Projects	Value per Project (\$ million)	Jobs Created
Joint ventures	1	5-7	75
Contract manufacturing	2	0.25-0.5*	25
Under license	3	0.25-0.5*	25
Financial investors	1	5-7	75

\* This represents estimated contract sales value, and not investment value

## 5.6 Resource Requirements

To achieve the above targets, JIB needs to have the following resources in place.

### Personnel

One investment promotion officer should be dedicated full time to investment promotion functions directly related to pharmaceuticals sector. One part-time researcher trained in the effective use of the databases and other research tools should assist the promotion officer to identify potential investors.

### Research Tools

A database on the pharmaceuticals industry that provides information on trends, agreements, and latest developments in the sector, as well as general information on public companies is required. JIB already acquired the SCRIP database in 2003. Databases on selected regions that have more specific information on associations and companies operating in that region that include technical and market trend-related articles are also helpful. However, these are usually obtained through monthly subscriptions.

### Financial Resources

JIB needs to allocate a set annual budget for pharmaceuticals promotion activities and expenses. The budget should cover tickets and costs associated with two outward missions and one pharmaceuticals trade show, as well as the cost of subscriptions to industry publications, investor site visit expenses, and communication costs. Table 5.3 estimates the budget required per function.

**Table 5.3: Annual Promotion Budget**

Function	Unit Cost/Unit (\$)	Total
<b>Outward Missions</b>		
Tickets	1	1,000
Accommodation and travel expenses per day	7	300
Other (e.g., presentation material, equipment rental, seminar hall, and restaurant expenses)	1	2,000
Subtotal		5,100
Total number of outward missions		3
Total outward mission costs		15,300
Magazine and site subscriptions		1,500
International communication expenses		2,000
Site visit expenses in Jordan (e.g., logistics)		1,500
<b>Total annual expenses</b>		<b>20,300</b>

## 5.7 Knowledge Requirements

Finally, JIB promotion staff should continually upgrade their skills, in order to be able to compete with investment promotion officers from investment promotions agencies around the world, all of which are trying to reach and attract a similar group of investors in each sector. Areas in which the investment promotion officers need to be competent are industry expertise, research and investor identification, targeting, effective communication with investors, presentation, and preparation for and execution of promotion missions.

See Annexes 7-10 for lists of relevant information sources that can help investment promotion officers to fulfill these knowledge requirements. In addition, Annex 6 contains a sample letter to the local companies that investment promotion officers can use to collect original information about the sector in Jordan.

## 5.8 Promotional Approaches

Jordan's ultimate goal for investment promotion should be on-site visits by investors. The presence of investors on site can be used to make the most convincing case of the country's comparative advantages.

Identifying the markets and profiles of investors likely to be interested in Jordan (performed earlier in this report) is the first step in a focused promotional process, known in the industry as targeting. The subsequent steps are explained below.

### Research and Profiling

An investment officer can use databases specific to the industry, markets, and region, as well as free and fee-based web sites, and contacts with relevant industry organizations to generate leads about potential investors. Leads are critical at this stage, as the objective is to collect as much information on different investors in selected markets and regions as possible, regardless of how sketchy this information may appear at first.

The best way to identify the main players in targeted sectors is to maintain a comprehensive information base, and to update it on a regular basis. The SCRIP Pharmaceutical Fact File, which the JIB has already acquired, would serve as an important industry resource in this regard.

Other sources of information that may generate leads, or strengthen initial leads, are commercial attachés in target countries, chambers of commerce, industry-specific associations, and personal contacts with investors in each target country.

JIB officers working to promote investment in pharmaceuticals can start to familiarize themselves with the industry's activities, operations, and players through the following steps.

- Read articles on the pharmaceuticals industry and become familiar with each target market.
- Visit existing pharmaceutical manufacturing companies in Jordan to better understand the industry and the particular needs and capabilities of existing companies.
- Acquire and review specialty publications.
- Attend at least one pharmaceuticals trade show during the course of each year. Events that are exclusive to the pharmaceuticals industry would be of particular interest.

Note that trade shows and events should be staffed by two officers, who can simultaneously entertain inquiries from interested individuals and network with other show participants. It is recommended that one or more local industry representatives accompany JIB officers on these trips to provide technical and industry-specific support. Such trade shows are

particularly relevant to promoting contract and under-license manufacturing in Jordanian plants.

After identification of the main players in the target sectors, it is important to narrow down the comprehensive list of “target” companies to those more likely to be interested in investing in Jordan once approached.

A blind approach to companies is almost certain to fail. It is also highly unlikely that a company will be ready to make an investment decision on the day it is approached. So a commitment to ongoing contact is necessary.

Once a compelling reason to relocate in Jordan has been identified, the process of approaching a company can begin. Contact with the right people at targeted pharmaceutical companies is of critical importance. While this sounds obvious, all too often the wrong person is approached, or the targeted company itself misdirects unsolicited inquiries. Senior executives in the areas of manufacturing, licensing, R&D, tax, and finance are the people to meet. The usual approach is by letter, followed by a telephone contact.

### **Correspondence and Missions**

#### **Initial Contact**

The next step is to contact potential investors by sending introductory letters, introduction through industry associations, or by direct invitation to attend functions hosted by the investment officer in the target country. While introductory letters may seem to be the most logical first step, in practice a simultaneous combination of these methods often proves to be the most effective.

Introductory letters must be credible, highlight Jordan’s main advantages, address the potential concerns of investors, and be concise – investors have little patience to read general mail and constantly receive mail from similar agencies in other countries. Whenever possible, it is beneficial to name the person or agency that furnished the investor’s name to the investment officer.

An effective introductory letter should include the following elements.

- Name of the person or agency who offered the contact to JIB and the officer’s relationship with that source
- Benefits from operations in Jordan to the contacted company, which include the main selling points relevant to the country in which the company operates
- Existing negative conditions for the company that will improve by locating operations in Jordan (e.g., market-access constraints, high operating costs, low profit margins). Awareness of specific constraints is the fruit of research via databases and other sources.
- International certifications achieved by local pharmaceutical manufacturers
- Introduction to JIB and its role as a facilitator in the investment process
- Indication of next steps, such as a follow-up call from a JIB officer or an invitation to an upcoming event planned by JIB
- Attachment enclosing JIB’s sector brochure (See Annex 4 for suggested content for such a brochure.)

See Annex 5 for a sample introductory letter.

By this stage in the process, the investment officer is trying to build a relationship with the prospective investor. Therefore, any reply from the investor, in whatever form, must be responded to without delay, to build on the interest generated by the introductory letter.

### Follow-up Communication

In most cases, investors will not reply to introductory letters, and follow-up letters or phone calls must be made in order to prompt a response. Follow-up letters may highlight developments in the pharmaceuticals industry as they affect Jordan or the investor, or about events that are planned in Jordan, in the region or investors' markets. Following are topics that are suitable for inclusion in follow-up communication.

- Developments on market access to regional countries
- Success stories of Jordanian pharmaceutical companies
- Success stories of companies and investments that have located to Jordan
- Jordanian government actions to improve the climate for investment
- Events planned by JIB in Jordan or target market
- Developments in the company's performance, as available
- Developments in European Bolar Provision legislation

### Missions

Once a number of investors have been identified and contacted in a certain market and relationships built with associations in that market, the time is ripe to execute a promotion mission and try to arrange meetings.

To help arrange for meetings with the right persons at the targeted company, personal contacts are usually very important. For a country like Jordan, which has few expatriates in senior industry positions in the U.S. and Europe, one must look for alternative contacts. Following are a few examples.

- Leaders of local industry who have ties to Jordan
  - John Chambers, the CEO of Cisco Systems, is a good example. His recent visit to Jordan was an opportunity to ask him to facilitate contacts with senior executives in associated companies so they might meet senior officials of the JIB within a few weeks of his visit.
- "Big Four" accounting firms
  - Ask the Jordanian branches of "Big Four" accounting firms to arrange meetings, or even seminars, through their offices in targeted markets. Almost all the big players in the pharmaceutical industry are clients of Ernst & Young, PriceWaterhouseCoopers, KPMG, and Deloitte & Touche.
- Leading figures in Jordan
  - His Majesty King Abdullah II has volunteered to contact the chief executives of major pharmaceutical firms in the U.K. and to arrange for their senior personnel to meet with industry representatives and relevant public officials from Jordan.

These meetings can take place during either scoping or promotion missions.

### Scoping Missions

A scoping mission to each target country should take place during the first year it is targeted as a market. These missions allow JIB promotion officers to familiarize themselves with the dynamics of the local pharmaceutical sector and industry associations in each market. The first scoping mission suggested as a part of this plan is to Germany, followed by one to the U.K. These trips will each require about one month of planning and preparation. It is suggested that JIB use these scoping missions to enlist assistance from overseas pharmaceutical associations or other organizations such as local chambers of commerce and industry.

## Promotion Missions

Promotion missions should follow each scoping mission by approximately four to six weeks. In the first year of this plan, outward promotion missions are suggested to Germany and the U.K. In years two and three, follow-up missions to these markets are recommended, as well as a first promotion mission to the U.S. Outward promotion missions are most effective in countries that have active and centralized pharmaceuticals industry associations, whose members are within reasonable proximity of the association's headquarters. For this reason, these types of promotion missions are typically easier to organize in European markets than in regional markets.

First-time missions include sector-specific seminars, conducted by the investment officer with the possible support of an expert in the field, followed by introductions to audience members and an informal exchange of business information. This typically takes place at a dinner hosted by the promotion agency.

One-on-one meetings are then planned for the days that follow the seminar, in which the promotion officer has the first real chance to meet with investors and to personally convince them in detail of the benefits Jordan has to offer. This is a very critical stage of the process, so the promotion officer must be prepared and possess the necessary skills of persuasion and presentation to channel the investor into finding real value in the Jordanian option.

Follow-up missions might be required before any of the investors met on the first trip are convinced to visit Jordan.

## Site Visits and Aftercare

When an investor decides to visit Jordan, little must be left to chance. Therefore, the promotion officer needs to accompany him or her throughout the trip, making sure that all questions and concerns are answered and a positive impression of Jordan is given and retained. While not every investor who visits will ultimately invest, this should be the goal of any promotion officer.

The relationship between the investor and the officer continues even during the setup stage of the investment, when the officer acts as facilitator to expedite the processing of all requirements on behalf of the investor. In selected industrial areas, a representative of the zone manager might perform all registration and permitting functions on behalf of the investor to ensure there are no difficulties in the process.

## ANNEX 1: LIST OF INTERVIEWS CONDUCTED

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### **Local Industry**

Hayat Pharmaceutical Industries Co.: Ms. Raghda Kurdi (Board Member)

Advanced Pharmaceutical Industries: Dr. Rakan Irsheidat (Managing Director)

United Pharmaceuticals: Mr. Thomas Ericson

Jordan Pharmaceutical Manufacturing: Dr. Adnan Badwan (Director)

Hikma Pharmaceuticals Co.: Mr. Mazen Darwazeh (Chairman of the Board)

### **Research Centers**

International Pharmaceutical Research Center (IPRC): Mr. Naji Najib (Director)

### **Agents of International Companies**

S. Sabbagh: Mr. Mohammad Sabbagh

Amin Shocair Establishment: Mr. Ibrahim Beirouti and Ms. Samira Qussous

The Jordan Drug Store: Mr. Haif Banayan (General Manager)

### **Support Organizations**

JAPM: Mr. Maher Matalaka

Saba & Co./Deloitte Touche: Mr. Asem Haddad (General Principal)

IBLAW: Ms. Nesreen Haram and Ms. Nancy Dababneh

### **Line Ministries**

Ministry of Health, Directorate of Medicine: Ms. Maisaa Al Saket (Director)

Ministry of Industry & Trade: Mr. Amer Hadidi (Director of Industrial Development)

Ministry of Industry & Trade: Mr. Samer Tarawneh (Expert on IPR laws)

### **Medical Equipment Sector**

Private Hospitals Association: Dr. Mahmoud Al Taher (Head of Association)

## ANNEX 2: SUMMARY OF MEETINGS WITH SELECTED PHARMACEUTICAL COMPANIES IN IRELAND

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In January 2003, meetings and discussions were held with companies in Ireland relating to Jordan as a prospective industrial location. The feedback was varied but mainly not very encouraging. Clearly, there was a lack of background information.

### **Stada**

*German generics company, which has purchased an Irish subsidiary, Clonmel Chemicals*

The chief executive of the Irish company, Mr. Rory O’Riordan, has now become a senior manager within the parent company with wider responsibilities, including for plants elsewhere in Europe. He had been based in the Gulf for two years with a previous employer and had visited Amman on a few occasions. Despite this, he had little knowledge of the pharmaceutical industry in Jordan. At present, he is chairman of the European Generics Manufacturers Association (EGA) and offered to arrange for a short presentation on the merits and attractions of Jordan for generics manufacturers to be made to the Board meeting of EGA in Brussels in February 2003, which was expected to have 30 companies represented.

### **Ivax**

*U.S. generics companies. One of the largest in the world.*

The Irish operation, formally Norton Healthcare, is the largest generics employer in Ireland with approximately 500 employees. The company recently purchased a plant in the Czech Republic because of growing operating costs in the U.K. Jordan was not considered as an option for this investment.

### **Forest Laboratories**

*U.S. ethical company*

The company has two operations in Ireland and does not have plans to expand in the European market. More likely, it will build up the Irish operation which is very profitable. The company has recently set up a sales and distribution network in the Arab world which included a distributor in Amman for the Jordanian market (for a product called Sudocreme for psoriasis). The company has no knowledge of what Jordan offers to investors, and no interest in investing at the present time.

### **Aventis**

*One of the top 10 pharmaceutical companies in the world*

Aventis has a small plant in Ireland. The general belief is that Jordan is not of interest to Aventis, because of perceived instability in the region.

### **Chanelle**

*Irish generics company*

Chanelle began as a veterinary products producer and subsequently expanded into human products. The owner has been doing business in Jordan for many years and has business relations with three Jordanian pharmaceutical companies. He believes that breaking into the E.U. market is the only chance of survival for many firms, but that few of them have the resources or the will to tackle what will be a time consuming and difficult process.

The owner of the company visits Jordan regularly and has offered assistance in helping Jordanian companies to get European registration. He is discouraged by the lack of progress he has witnessed in that regard between one visit and the next.

### **Fujisawa**

*Japanese ethical company. One of the largest in Japan.*

Fujisawa has a finishing plant in Ireland that makes FK 506, a transplant anti-rejection drug, and has a distributor in Jordan for the product made in its Irish plant.

The Japanese chief executive recently relocated to Ireland from the company's European headquarters in Munich. He has no knowledge of Jordan as a potential manufacturing location but has agreed to contact his headquarters in Osaka, Japan to inquire about Jordan's reputation as an investment location.

### **IPCMF**

*Federation of ethical manufacturers in Ireland*

All members are subsidiaries of overseas companies and have no knowledge or interest in Jordan. This is not surprising as their mandate is to administer the Irish plants of their parents.

### **Generics Manufacturers Association**

The Generics Manufacturers Association has interest in getting more knowledge about Jordan. Most of its members are subsidiaries of overseas companies.

### ANNEX 3: MINUTES OF STAKEHOLDERS MEETING

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A workshop as held at JIB's premises on 28 January 2003, to present and discuss the findings of this assignment.

Senior management from JIB, from JAPM and from the pharmaceutical manufacturing sector participated.

Key comments emerging from the discussion were as follows.

- Generic companies in Europe are interested in buying products, when their patents expire, from countries where the Bolar provision does not apply (like Jordan).
- Tax incentives for R&D activities may be provided for by the law, however, in practice they are not exercised.
- Although the U.S. market is potentially attractive, FDA standards are very high and the whole industry in Jordan needs to be upgraded to enter that market.
- The image of any player in the local market affects the whole sector, hence it is critical to upgrade the whole sector to maintain and improve image of Jordan's pharmaceutical sector globally.
- There is a need to upgrade local inspector's capabilities and skills. The AMIR Program was requested to get involved in funding for capacity building.
- The pharmaceutical sector needs to show global presence, by participating in annual meetings of the pharmaceutical industry as one option. Joint public private participation was encouraged.
- Clinical research for the European market, performed by multinational US and Japanese, is done in the UK mostly. Moreover, existing clinical research companies in the region are relocating to Ireland. This was an answer to the potential of attracting clinical research companies to Jordan.
- Apart from targeting Europe, Jordan must target the U.S.
- There is a need to upgrade Standards (of auditing / inspection) in Jordan. This should be done through the Ministry of Health.
- The Jordanian pharmaceutical companies desire to get help from JIB in identifying sources of new – contract manufacturing – business in Europe.
- JIB should dedicate resources to finding such business in Europe.
- Economies of scale are difficult.
- It was suggested that a Higher Pharmaceutical Council be established in Jordan.
- All agreed that there is a need for the JIB to be represented at one or more key international pharmaceutical events, each year. It was felt that the major event for 2003 is the event that takes place in Lisbon, Portugal on 30 June 2003.
- There is good potential for development of the Clinical Research Organizations in Jordan. One limiting factor, however, is the need to get these organizations accredited to world standards.
- There is a need to research and target sub-sectors beyond generics. More detailed targeting (by product) should be carried out.
- There is a strong need to get European / FDA accreditation of the pharmaceutical companies here. This might be financed partly by JAPM and partly by JIB.
- Jordan could do part of the product development work that big international firms need to have done.

## ANNEX 4: CONTENT OF NEW PROMOTIONAL BROCHURE

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### **Jordan for Industrial Investment**

#### General Information

Official Name: Hashemite Kingdom of Jordan

Population: 5.2 million

Area: 90,000 km<sup>2</sup>

Capital: Amman (population 1.2 million)

Official Language: Arabic. English is widely spoken in business.

Currency: Jordan Dinar (JD). Equivalent to US\$ 1.41 (fixed rate).

#### Air Travel

Royal Jordanian Airlines links Amman with many of the capitals of Europe, Asia, the Arab world, and operates wide-body jets to the United States. International Airlines including BA, Lufthansa, KLM, Air France, fly regularly to London, Amsterdam, Paris, Brussels, Frankfurt, and so on.

#### Hotels

Most of the international chains have modern hotels in Amman, including Four Seasons, Sheraton, Intercontinental, Le Meridien, Marriott, Hyatt, Mövenpick, and so on.

#### Telecommunications

Excellent direct telephone, mobiles, fax and internet communications and services are available at international standards. France Telecom has a 40% stake in Jordan Telecom.

#### Transport

Air and sea facilities are available from Jordan to European locations.

#### Time

GMT + 2 in winter

GMT + 3 in summer

#### Working Days and Hours

Industrial working days amount to 290 per year.

Friday is the weekly holiday. 13 days national holidays. Paid leave 14 days.

According to Jordanian labor law, most workers are limited to 48 hours per week.

#### Wages

Wage rates for industrial workers start at US\$130 per month rising over 5 years to approximately US\$200.

Average for lab technicians is US\$360, pharmacists US\$500 per month.

#### Expertise

Highly skilled workforce; good educational system; excellent university network; very competitive wages levels compared to western Europe or the USA;

## **Foreign Investment in Jordan**

Jordan has dramatically changed its status as an investment location over the past few years with its accession to WTO and the signing of the U.S-Jordan FTA and the Jordan-EU partnership Agreement. Among the industrial sectors, the pharmaceutical sector is one of the most dynamic and offers great opportunities to foreign companies for high quality and profitable investments.

### **Pharmaceutical Investment Incentives**

- Exporters pay no tax on income.
- There is no restriction on foreign ownership.
- Full repatriation of profits is allowed.
- Double taxation agreements exist with several countries.
- International trade agreements ensure low cost access to USA and Europe.
- Raw material imports are exempted from customs duties.
- Fixed assets for the project are exempted from customs duties.
- IPR laws are compatible with TRIPS.
- Jordan also complies with the Bolar Provision.

### **Pharmaceutical Industry in Jordan**

There are 16 Jordanian companies, all basically generic manufacturers. They employ 4,000+, and export approximately 70% of output. Some of the companies are GMP, cGMP, ISO, FDA qualified.

To date Jordanian companies have established business links with major foreign companies including Pfizer, Roche, Mundipharma, Aventis, Novartis, Organon, Fujisawa, Takeda, Chanelle. Since joining the WTO growing interest has been shown by foreign companies in developing JVs, licensing and contract manufacturing agreements with Jordanian companies.

The market size in Jordan is small at \$200 million. The Middle East markets amount to approximately \$10 billion, and traditionally are the target markets for companies in Jordan.

The focus is moving from a concentration on local and Middle East markets to the E.U markets where manufacturing costs are becoming ever more critical. Jordan offers an attractive and cost effective alternative location.

The companies are all based in the Amman area. Between them they manufacture an extensive range of products including antibiotics, analgesics, steroids, antimicrobials, antiviral, antidepressants, soft and hard gelatin capsules, and so on.

Information on individual companies is available outlining their capabilities, range of expertise, equipment potential, and so on.

Jordan Investment Board (JIB) is the sole Government agency responsible for marketing the country abroad for foreign investments. JIB will make all arrangements necessary to make your visit to Jordan successful.

## ANNEX 5: SAMPLE INTRODUCTORY LETTER TO INVESTORS

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Dear [ ]

Through my research on pharmaceutical companies in Europe, I was able to locate your name from our research database SCRIP Pharmaceutical Companies Fact File.

The pharmaceutical sector in Jordan offers unique opportunities for European companies, as will become evident in this letter.

Regarding the investment climate in Jordan, the pharmaceutical sector enjoys a set of attractive incentives, including: no income tax on exports, no restriction on foreign ownership, full repatriation of profit, double taxation agreement with several countries, exemption of raw material imports from custom duties, IPR laws compatible with TRIPS.

The above benefits coupled with the U.S-Jordan Free Trade Agreement and the Jordan-Euro Partnership Agreement have resulted in a number of major international players to establish business links in Jordan.

To date, Jordanian companies have established business ventures with leading international companies, including: Roche, Novartis, Fujisawa, Takeda, Pfizer, Chanelle, Mundipharma, Aventis, Organon.

Not only is the cost structure in Jordan very competitive, but also the quality of local manufacturers has become of such standards that out of the 17 companies, two have attained FDA certificate, five have secured European GMP, and the rest currently seeking international certifications.

Of particular relevance to European pharmaceutical manufacturers, the Bolar Roche provision applies to European companies wishing to perform Research & Development work in Jordan, capitalizing on the state-of-the-art factories that have been recently set up/renovated.

JIB, acting as a liaison between national and foreign investors, stands ready to provide you with details about the opportunities of cooperation with Jordanian companies. I'll be delighted to give you a call in a week time to follow up on my letter.

While thanking you for your kind attention, please accept my best regards,

## ANNEX 6: SAMPLE LETTER TO LOCAL COMPANIES

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Dear [ ]

JIB has started its promotional program for identification and targeting foreign pharmaceutical companies in Europe and the U.S, based on the marketing strategy developed with an international consultant from the AMIR Program.

In this regard, we are looking to establish contacts with international companies to encourage them to establish business ventures with local companies. And in order to better utilize our resources, specifically the SCRIP Pharmaceutical Companies Fact File database that includes profiles of 1,500 companies, we shall be very grateful if you would provide us with information on the therapeutic classes that your company deals with/interested in to facilitate our search.

Looking forward to receiving your reply by filling the table below and emailing/faxing it back to us at your earliest convenience.

While thanking you for your kind attention, please accept my best regards,

## ANNEX 7: RELEVANT INDUSTRY ASSOCIATIONS

Table A.1 presents a list of relevant pharmaceuticals associations, including region-specific and country-specific associations in Germany, the U.K., the U.S., and Japan. This list summarizes the focus of each association and provides its Internet address.

**Table A.1: Pharmaceutical Trade Associations and Information Portals**

Trade Association	Association and Site Description	Internet Address
Canadian Drug Manufacturers Association	The Canadian Generic Pharmaceutical Association (CGPA) represents the Canadian-based pharmaceutical industry: a dynamic group of companies which specialize in the production of high quality, affordable generic drugs, fine chemicals and new chemical entities.	<a href="http://www.cdma-acfpp.org/index.html">http://www.cdma-acfpp.org/index.html</a>
Drug Information Association	DIA is a member-driven organization encompassing the full continuum of disciplines in the pharmaceutical and related industries and to be valued as the professional development authority.	<a href="http://diahome.org/docs/index.cfm">http://diahome.org/docs/index.cfm</a>
DCAT The Drug, Chemical and Allied Trades Association, Inc.	An association of member companies who manufacture, distribute or provide services to the drug, chemical and associated industries.	<a href="http://www.dcat.org">http://www.dcat.org</a>
European Generic Medicines Association	The EGA is the representative body for the European generic pharmaceutical industry. Formed in 1992 it represents over 400 companies either directly or through national associations from throughout the European Union, Croatia, Cyprus, the Czech Republic, Hungary, Macedonia, Poland and Slovenia	<a href="http://www.egagenerics.com/">http://www.egagenerics.com/</a>
British Generic Manufacturers Association	A guide to UK generics market	<a href="http://www.britishgenerics.co.uk/bgma.htm">http://www.britishgenerics.co.uk/bgma.htm</a>
British Institute for Regulatory Affairs	Regulatory Affairs Professionals join BIRA, the foremost association for drug registration professionals.	<a href="http://www.bira.org.uk">http://www.bira.org.uk</a>
The Canadian Drugstore	A guide to the Canadian generic manufacturers	<a href="http://www.tcds.com">www.tcds.com</a>
European Proprietary Medicine Manufacturers Association	The Association of the European Self-Medication Industry (AESGP) was founded to contribute to the improvement of responsible self-medication at the European level and to ensure that the views and interests of the manufacturers of non-prescription medicines and self-care products - including food supplements - in Europe are recognised in pharmaceutical and health matters.	<a href="http://www.aesgp.be/index.html">http://www.aesgp.be/index.html</a>
European Society for the Regulatory Affairs	ESRA is the largest Network of Regulatory Affairs Professionals working in the Pharmaceutical Drug Registration Field	<a href="http://www.esra.org">http://www.esra.org</a>
Non-Prescription Drug Manufacturers Association	The Nonprescription Drug Manufacturers Association of Canada is the national association representing manufacturers, marketers and distributors of self-care products including nonprescription medications, herbal remedies/natural health products, nutritional supplements, home diagnostic kits and other personal care products.	<a href="http://www.ndmac.ca/">http://www.ndmac.ca/</a>
Biotechnology Industry Association	Industry statistics, publications, speeches, press releases, and other issues on laws and IPRs.	<a href="http://www.bio.org/">http://www.bio.org/</a>
American Pharmaceutical Association (APhA)	A national society of pharmacists, the APhA provides professional information and education and advocates for improved health of the American public	<a href="http://www.aphanet.org">http://www.aphanet.org</a>
Association of the British Pharmaceutical Industry	A trade association for about a hundred companies in the UK producing prescription medicines. Its member companies research, develop, manufacture and supply more than 90 per cent of the medicines prescribed through the National Health Service (NHS).	<a href="http://www.abpi.org.uk">http://www.abpi.org.uk</a>
International Pharmaceutical	The world wide Trade Association of Manufacturers and users of Pharmaceutical Excipients	<a href="http://www.ipec.org">http://www.ipec.org</a>

**Table A.1: Pharmaceutical Trade Associations and Information Portals**

Trade Association	Association and Site Description	Internet Address
Excipients Council		
Pharmaceutical Outsourcing Management Association (POMA)	Information on POMA, as well as member-only resources for best practices, member contact database, forms, standard practices, events information, news, and communications tools.	<a href="http://www.pomasite.com">http://www.pomasite.com</a>

## ANNEX 8: RELEVANT PUBLICATIONS

Table A.2 provides a list of periodicals that specialize in news related to pharmaceuticals.

**Table A.2: Pharmaceutical Trade Publications**

Publication Name	Description	Contact Information
Kathy Blankenhorn and David Lipson. "Business Watch, 2001 in Review." IMS Health. May 2002.	Industry global overview.	<a href="http://www.imshealth.com/vgn/images/portal/cit_759/2006112572bus2.pdf">http://www.imshealth.com/vgn/images/portal/cit_759/2006112572bus2.pdf</a>
"Pharmaceutical Business News." Published by Informa Pharmaceuticals and Healthcare	A newsletter that is Published every two weeks. It provides up-to-date news, analysis, forecasts, and inside information on new product introductions and joint venture agreements. The newsletter also contains round-ups of essential interim and year-end company financial performance and results, plus news on acquisitions and mergers.	<a href="http://www.healthcare-info.co.uk/IPHLS0191/?source=healthcare">http://www.healthcare-info.co.uk/IPHLS0191/?source=healthcare</a>
Pharmalive Newsletter Series	Offers one daily and seven weekly newsletters. Each newsletter covers areas like financial markets, Drugs development, law reviews and others	<a href="http://www.pharmalive.com/enewsletters/">http://www.pharmalive.com/enewsletters/</a>
"Top 50 Pharmaceutical Company Pipelines."	Special report series from PharmaLive.com	<a href="http://www.pharmalive.com/specialreports/sample.cfm?reportid=3">http://www.pharmalive.com/specialreports/sample.cfm?reportid=3</a>
"Companies that Specialize Ranked by Revenue"	Special report series from PharmaLive.com	<a href="http://www.pharmalive.com/specialreports/">http://www.pharmalive.com/specialreports/</a>
"From Pipeline to Market 2003"	Special report series from PharmaLive.com	<a href="http://www.pharmalive.com/specialreports/sample.cfm?reportid=1">http://www.pharmalive.com/specialreports/sample.cfm?reportid=1</a>
"The Top 400 Prescription Medicines by Worldwide Sales"	Special report series from PharmaLive.com	<a href="http://www.pharmalive.com/specialreports/sample.cfm?reportid=4">http://www.pharmalive.com/specialreports/sample.cfm?reportid=4</a>
"Approvals Over Time."	Special report series from PharmaLive.com	<a href="http://www.pharmalive.com/specialreports/sample.cfm?reportid=9">http://www.pharmalive.com/specialreports/sample.cfm?reportid=9</a>
"Pharmaceutical Outsourcing." Advest. June 2001.	-	<a href="http://www.eyeforpharma.com/pharma/papers/advest.pdf">http://www.eyeforpharma.com/pharma/papers/advest.pdf</a>
"Medical Industry Week." Produced by: Espicom	Medical Industry Week (MIW) is a weekly newsletter (46 issues per year) providing the latest information on companies and their products.	<a href="http://www.pharma-i.com/publications/publication_details.asp?chn=0,0,0&amp;sref=1103025510668090516&amp;id=120">http://www.pharma-i.com/publications/publication_details.asp?chn=0,0,0&amp;sref=1103025510668090516&amp;id=120</a>
"Pharma Business." Produced by: Euromoney Books	A business magazine edited specifically for the international pharmaceutical community. Pharma business covers news, issues, events, clinical research, and marketing activities affecting pharmaceutical companies and their products. Readers are presented with charts that rank and text that profiles the leading pharmaceutical companies, biotechnology companies, new drug approvals, leading contract research organizations, and the world's best selling drugs.	<a href="http://www.pharma-i.com/publications/publication_details.asp?chn=0,0,0&amp;sref=1103025510668090516&amp;id=124">http://www.pharma-i.com/publications/publication_details.asp?chn=0,0,0&amp;sref=1103025510668090516&amp;id=124</a>
"A Healthy Business Guide to the Pharmaceutical Industry." By Urch Publishing	The guide follows the development of a drug from the early R&D stages through to clinical trials, launch, post marketing and product life-cycle. The author examines how companies are built, what has been successful, future growth area and where the industry is headed as a whole	<a href="http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/">http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/</a>
"WTO and Patents – The Impact on the Pharmaceutical Industry."	reviews patent protection and its role within the global pharmaceutical industry. This unique report assess the importance of the TRIPS framework as a step toward	<a href="http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/">http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/</a>

**Table A.2: Pharmaceutical Trade Publications**

Publication Name	Description	Contact Information
By Urch Publishing	globalization of legal requirements and reviews the role of the WTO.	
Stuart Schweitzer. "Pharmaceutical Economics & Policy." January 1997.	This book employs the tools of economic analysis to explore the conflicting priorities and aims of the pharmaceutical industry, from both a US and worldwide perspective. The author discusses the industry both as a manufacturer of products and as a major player in the making of health-care decisions. The author also analyzes the reasons and results of the shift in the locus of demand for pharmaceuticals.	<a href="http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/">http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/</a>
Madhu Agrawal. "Global Competitiveness in the Pharmaceutical Industry." January 1999.	-	<a href="http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/index1.htm">http://www.rbookshop.com/business_books/p/Pharmaceuticals_Industry/index1.htm</a>
"Pharmaceuticals: More Arguments Within the Drugs Industry Over New Rules." Europe Information Services	Article	<a href="http://eisnet.eis.be/Content/Default.asp?PageID=484">http://eisnet.eis.be/Content/Default.asp?PageID=484</a>

## ANNEX 9: RELEVANT WEB SITES

Table A.3 provides a list of web sites that are may prove useful for pharmaceutical industry research.

**Table A.3: Web Sites Relevant to Pharmaceutical Industry Research**

Organization	Internet Address	Description
International Trade Center (ITC)	<a href="http://www.intracen.org/">http://www.intracen.org/</a>	The ITC (UNCTAD/WTO) is the focal point in the United Nations system for technical cooperation with developing countries in trade promotion. ITC produces and disseminates market research and trade analysis for exporters, importers and trade support institutions in developing countries and transition economies. Market analysis activities provide in-depth analyses of international trade flows ("TradeMap program") and the development of analytical tools for market analysis and trade promotion accessible through 2 Market Analysis Portals: Country and Product MAPs).
The Economist: country briefings	<a href="http://www.economist.com/countries/">http://www.economist.com/countries/</a>	News, country profiles, forecasts, statistics and more on over 60 countries, from the online version of The Economist magazine, a leading independent global economic and political news and analysis source.
The Economist Intelligence Unit	<a href="http://www.eiu.com/">http://www.eiu.com/</a>	Database of over 3,000 publications provides economic and political analysis and forecasts for 200 countries and regions. Key titles include country reports, profiles, and forecasts.
EU Statistical Office (EUROSTAT)	<a href="http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat">http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat</a>	Statistical research and market and data analysis from the EU
World Bank	<a href="http://www.worldbank.org/">http://www.worldbank.org/</a>	Country-specific and regional data, reports (projects, policies and strategies).
JAYDE	<a href="http://dir.jayde.com">http://dir.jayde.com</a>	A B2B search engine
AME Info	<a href="http://www.ameinfo.com">www.ameinfo.com</a>	Middle East focused business directory, news & articles, exhibitions & events.
Datamonitor	<a href="http://www.datamonitor.com">www.datamonitor.com</a>	A business intelligence database that offers global and sectoral market information, industry and country profiles, business directories, etc.
Reuters	<a href="http://www.investor.reuters.com/home.aspx">http://www.investor.reuters.com/home.aspx</a>	A business intelligence database that offers information on the industry highlights, overviews, and key developments.
Informa Bookshop	<a href="http://www.informabookshop.com">www.informabookshop.com</a>	A showroom of products and services, from online services, CD-ROM products, daily newspapers, magazines and books.
US Food and Drug Administration	<a href="http://www.fda.gov/">http://www.fda.gov/</a>	Industry information, products, news, and activities
Pharmaceutical Research and Manufacturers of America	<a href="http://www.phrma.org/">http://www.phrma.org/</a>	The Pharmaceutical Research and Manufacturers of America (PhRMA) represents the US leading research-based pharmaceutical and biotechnology companies. It encompasses industry, and country profiles, publications, news, and economic and trade policies.
The Website for the pharmaceutical Industry	<a href="http://www.pharmaceutical-technology.com/industry/">http://www.pharmaceutical-technology.com/industry/</a>	A Directory of the pharmaceutical organizations by country.
Headline Spot	<a href="http://www.headlinespot.com/subject/industry/pharmaceutical.htm">http://www.headlinespot.com/subject/industry/pharmaceutical.htm</a>	Pharmaceutical Industry news.
IMS Health	<a href="http://www.imshealth.com">www.imshealth.com</a>	A consultants website that offers global pharmaceutical market intelligence information and services.
NERA Economic Consulting	<a href="http://www.nera.com">www.nera.com</a>	NERA Economic Consulting is an international firm of economists who offers global sectoral publications

**Table A.3: Web Sites Relevant to Pharmaceutical Industry Research**

Organization	Internet Address	Description
PharmaLive	<a href="http://www.pharmalive.com">http://www.pharmalive.com</a>	Industry news, conferences, databases, newsletters, and special reports.
Eye for Pharma	<a href="http://www.eyeforpharma.com">http://www.eyeforpharma.com</a>	Industry news, articles & features, research & reports, case studies, and presentations.
Pharma-i	<a href="http://www.pharma-i.com">http://www.pharma-i.com</a>	B2B portal for the pharmaceutical Industry
Pharma Browser	<a href="http://www.pharmabrowser.com">http://www.pharmabrowser.com</a>	Company Research & Business Information Tool for the Pharmaceutical Industry

## ANNEX 10: RELEVANT DATABASES

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Following is a description of a number of fee-based databases that are useful for gathering market and company-specific information.

### **SCRIP Pharmaceutical Fact File**

For the pharmaceutical sector, perhaps the most valuable source of information is the SCRIP Pharmaceutical Fact File, which provides information on 1,400 companies worldwide. This database can be purchased on CD ROM for \$1,600 or \$2,000 for a printed copy. JIB has already purchased this database in 2003.

In addition, SCRIP magazine, widely regarded within the industry as its most reliable reference, provides considerable insights twice weekly to the marketing professional that will assist him or her make informed decisions on how and whom to target for investment. SCRIP's annual subscription cost is approximately \$1,500.

### **Business Browser**

"Business Browser" from OneSource Information Services, Inc. is a web-based information tool that integrates comprehensive and up-to-date business and financial information on over one million public and private companies from more than 25 information providers drawing on over 2,500 sources of content. These sources include both textual information, such as news, trade press, executive biographies and analyst reports, and numeric information such as company financial results, stock quotes and industry statistics. This database is available in a global edition, as well as specialized versions for the U.S. and Canada, the United Kingdom, Europe and Asia Pacific, and with varying degrees of company and executive coverage in each package.

The annual subscription fee for this database is \$20,000 for the European edition, which includes ample information on European, Middle Eastern and Asian companies.

More details and sample screens from this service can be found at the following web address.

[http://www.onesource.com/products/content\\_107.asp](http://www.onesource.com/products/content_107.asp)

### **InSite**

"InSite" offers the latest news and in-depth analyses reported in the trade, business and popular press: competitive intelligence that helps make key business decisions. There are several modules within this family of products, including Business InSite, Market InSite, Consumer InSite and Company InSite, each offering a different focus on a breadth of indicators and analyses.

The annual subscription fee for this database is \$5,200.

Further details on this service can be found at the following web address.

<http://www.iac-insite.com/about.htm>

### **World Market Watch, Inc.**

"World Market Watch, Inc." is a software tool designed to simplify business intelligence gathering and houses information on over one million companies, with up to 33 different types of business information on each company. It contains access to industry-specific products as well as country-specific reports.

Subscription rates are currently at US\$29.95 per thirty days.

## ANNEX 11: LOCAL PHARMACEUTICAL COMPANIES

**Table A.4: Local Pharmaceutical Companies**

Company Name	Paid Capital	Company Type	Markets	Main Therapeutic Classes	Licenses	No. of Employees
Advanced Pharmaceutical Industries Co. Ltd.	JD7.7 million	Public	Iraq, Algeria, Bahrain, Libya, Qatar, Syria, Yemen, Sudan, and Uganda	Cardiovascular, advanced antibiotics, analgesics and chemotherapeutic agents	Tiberal: Roche for Jordan, Iraq & Algeria Disflatyl: for Solco Switzerland	143
Amman Pharmaceutical Industries Co. (API)	JD1.75 million	Private	Jordan, Oman, Romania, Algeria, Yemen, Bahrain, Kuwait, Saudi Arabia, Sudan, Tunisia, Bosnia, Libya, Iraq, Qatar, Tanzania, United Arab Emirates, Somalia, Syria	Eye, ear and nose drops & ointments. Tropical semisolids & lotions. Oral liquids.	N/A	70
Arab Center for Pharmaceuticals and Chemicals (ACPC)	JD5 Million	Public	Qatar, Iraq, Lebanon, Syria, United Arab Emirates, Yemen, Bahrain, man, Algeria, Albania, Sudan and Egypt	Tropical Plain Steroids/ Tropical steroids & anti-infective combinations/ Tropical plain anti-infective/ Tropical steroids & antifungals/ Tropical antiviral/ Tropical antipsoriasis/ Antilice and scabicides/ Tropical antipruritics jeratolytics Disinfectant and cleansing/ Local antiseptics/Laxatives/ ointments & creams	N/A	270
Al-Razi Pharmaceutical Industries Co. (PLC)	JD12.8 million	Public	Jordan	Analgesics anti-inflammatory drugs, anti-asthmatic drugs, antihyperglycemics, anti-hypertensive, Antimicrobials, antiparkinson drugs, antivirals, cholesterol lowering agents, Antieoagulents, antipaprasites, Gastrointestinal drugs, Anxiolytics and antidepressants	N/A	120
Hayat Pharmaceutical Industries Co. Ltd.	JD4.73 million	Private	Algeria, Iraq, Saudi Arabia, Yemen, Sudan, Libya, Lebanon, U.A.E., Oman. Bahrain, Qatar	Skin preparations, Antibiotics, Local anesthetics, antihypertensive agents, Gastrointestinal preparations, Antifungals, Anti-inflammatory agents, anti-diabetic preparations.	N/A	136
The Jordanian Pharmaceutical Manufacturing Medical Equipment Co. Ltd. (JPM)	JD2.8 million	Private	Algeria, Azerbaijan, Bahrain, Bulgaria, Bosnia, Ethiopia, Iraq, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen	Antiulcer, antihypertensive, gastrokinetics, anti-emetics, antispasmodic, suppressants, laxatives, antidepressants, vitamins, antilipemics, antibacterial, bronchodialators	N/A	269
Middle East Pharmaceutical and Chemical Industries	JD9.45 million	Public	Jordan and the Middle East	Cephalosporine, antibiotics, analgesics, antirheumatic, antifungals, antidiabetics, cardiovasculars, and antihypertensives, gastrointestinal and antiulcerants, vitamins and hematinics, and over the counter products	N/A	150

**Table A.4: Local Pharmaceutical Companies**

Company Name	Paid Capital	Company Type	Markets	Main Therapeutic Classes	Licenses	No. of Employees
Ram Pharmaceutical Industries Co. Ltd	JD4.41 million	Private	Iraq, Yemen, Sudan, Algeria, Saudi Arabia, Bahrain and Oman	Antibiotics, antiparasitics, antivirals, anxiolytics and antidepressants, antiparkinson drugs, capillary regulators, central nervous system stimulants, peripheral and cerebral vasolidators, antihypertensives, antiestrogens, analgesics and antiinflammatories, respiratory drugs, gastrointestinal drugs, iron preparations, antihyperglycemic agents, diuretics, antihyperuricemia, cholestrol lowering agents, antiprolactin hormone, vitamin B6, antihelminithics and antimalarials	N/A	160
The United Pharmaceutical Manufacturing Limited Co. Ltd	JD3.5 million	Private	Saudi Arabia, United Arab Emirates, Oman, Qatar, Bahrain, Iraq, Algeria, Yemen, Libya, Romania and Algeria	Tablets, soft and hard gelatin capsules, liquids, dry, suspensions, creams and ointments, suppositories and ovules	Rhône-Pulenc Rorer Mundipharma AGF. Trenka	185

## ANNEX 12: TOP TEN GLOBAL PHARMACEUTICAL COMPANIES

**Table A.5: Top Ten Global Pharmaceutical Companies**

Company Name	Country of Origin	Annual Sales (\$ million)	Company Brief	Internet Address
Merck & Co., Inc.	U.S.	51, 790	Merck & Co., Inc. is a global research-driven pharmaceutical products and services company that discovers, develops, manufactures and markets a broad range of products to improve human and animal health, directly and through its joint ventures. The Company also provides pharmacy benefit management services through Medco Health Solutions, Inc. Merck's operations are comprised of two business segments: Merck Pharmaceutical and Medco Health. Merck Pharmaceutical's products consist of therapeutic and preventive agents, sold by prescription, for the treatment and prevention of human disorders. Medco Health provides pharmacy benefit services, including sales of prescription drugs through managed prescription drug programs. In August 2003, the Company completed the spin-off of Medco Health. The Company sells its human health products primarily to drug wholesalers and retailers, hospitals, clinics, government agencies and managed healthcare providers.	www.merck.com
Johnson & Johnson	U.S.	36, 298	Johnson & Johnson is engaged in the manufacture and sale of a broad range of products in the healthcare field. The Company's worldwide business is divided into three segments: Consumer, Pharmaceutical and Medical Devices & Diagnostics. The Consumer segment's principal products are personal care products, including nonprescription drugs, adult skin and hair care products, baby care products, oral care products, first aid products, women's health products and nutritional products. The Pharmaceutical segment's principal worldwide franchises are in the antifungal, anti-infective, cardiovascular, contraceptive, dermatology, gastrointestinal, hematology, immunology, neurology, oncology, pain management, psychotropic (central nervous system) and urology fields. The Medical Devices & Diagnostics segment includes a broad range of products used by, or under the direction of, physicians, nurses, therapists, hospitals, diagnostic laboratories and clinics.	www.jnj.com
Pfizer Inc.	U.S.	32, 373	Pfizer Inc. is a research-based, global pharmaceutical company. The Company discovers, develops, manufactures and markets prescription medicines for humans and animals, as well as many consumer products. The Company operates in two business segments: Pharmaceuticals and Consumer Products. The Pharmaceuticals segment includes prescription pharmaceuticals for treating cardiovascular diseases, infectious diseases, central nervous system disorders, diabetes, urogenital conditions, allergies, arthritis and other disorders; products for livestock and companion animals, and the manufacture of empty soft-gelatin capsules. The Consumer Products segment includes self-medications for oral care, upper respiratory health, eye care, skin care, gastrointestinal health and other products. In April 2003, the Company merged with Pharmacia Corporation. The combined operations of the companies enlarges Pfizer's portfolio of consumer healthcare brands and expands its animal health business.	www.pfizer.com
GlaxoSmith Kline plc	U.K.	31, 830	GlaxoSmithKline plc is a global healthcare group engaged in the creation and discovery, development, manufacture and	http://www.gsk.com

**Table A.5: Top Ten Global Pharmaceutical Companies**

Company Name	Country of Origin	Annual Sales (\$ million)	Company Brief	Internet Address
			marketing of pharmaceutical products, including vaccines, over-the-counter medicines and health-related consumer products. The Company's principal pharmaceutical products include medicines in the following therapeutic areas: central nervous system, respiratory, anti-virals, anti-bacterials, metabolic and gastro-intestinal, vaccines, oncology and emesis, cardiovascular and arthritis. Its principal consumer healthcare products are divided into three major areas: over-the-counter medicines, oral care and nutritional healthcare. GlaxoSmithKline sells its products worldwide through an extensive network of subsidiaries, licensees and distributors. The major markets for the Company's products are the United States, Japan, France, Germany, the United Kingdom and Italy. For the nine months ended 30 September 2003, GlaxoSmithKline plc's turnover increased 3% to 16.06B. Net income attributable to ordinary shareholders increased 24% to 3.69B. Turnover reflects increased Pharmaceutical sales and higher Healthcare revenues due to the acquisition of a number of dermatological products. Net income benefited from improved gross margins, lower selling & administrative costs, and decreased research & development expenses.	
Bayer AG	Germany	27, 300	Bayer AG is a global company offering a wide range of products, including ethical pharmaceuticals, diagnostics and other healthcare products; agricultural products; polymers, and chemicals. 2002 was a year of change for Bayer: the new structure consists of a management holding company and four independent operating subgroups: Bayer HealthCare, Bayer CropScience, Bayer Polymers and Bayer Chemicals. These entities are supported by the service companies Bayer Business Services, Bayer Technology Services and Bayer Industry Services.	<a href="http://www.bayer-ag.de">http://www.bayer-ag.de</a>
AstraZeneca PLCB	Sweden	22, 231	Manufacture and sale of pharmaceutical products	<a href="http://www.astrazeneca.se">http://www.astrazeneca.se</a>
Novartis AG	Switzerland	20, 828	Development, manufacture and marketing of a wide range of chemical products for healthcare (pharmaceuticals, generic drugs, lens care); consumer health (OTC, health and functional and medical nutrition) and animal health. The company is organised into the following units: Pharmaceuticals; Generics; Consumer Health; Ciba Vision; Animal Health	<a href="http://www.novartis.com">http://www.novartis.com</a>
Aventis	France	19, 441	Aventis is dedicated to treating and preventing disease by discovering and developing innovative prescription drugs and human vaccines. In 2002 Aventis invested 3.1bn Euros in research and development	<a href="http://www.aventis.com">http://www.aventis.com</a>
Roche Holding AG	Switzerland	19, 102	Holding company with interests in research and development, manufacture and sale of pharmaceuticals, vitamins and fine chemicals, diagnostics; research in the genetic and genomic fields. On 8 June 2000 the Fragrances and Flavours Division was spun off as an independent group. In 2002 the company reaffirmed its decision to demerge the Vitamins and Fine Chemicals Division. In February 2003 the company completed the realignment of its activities around its two core businesses, pharmaceuticals and diagnostics	<a href="http://www.roche.com">http://www.roche.com</a>
Bristol-Myers Squibb Co.	U.S.	18, 119	Bristol-Myers Squibb Company is a producer and distributor of pharmaceuticals and other healthcare-related products. The	<a href="http://www.bms.com">www.bms.com</a>

**Table A.5: Top Ten Global Pharmaceutical Companies**

Company Name	Country of Origin	Annual Sales (\$ million)	Company Brief	Internet Address
			Company has three reportable segments: Pharmaceuticals, Nutritionals and Other Healthcare. The Pharmaceuticals segment is a maker and supplier of branded and generic ethical pharmaceuticals. Through the Nutritionals segment, the Company produces and markets nutritional products such as infant formulas. The Other Healthcare segment consists of ConvaTec, Medical Imaging and Consumer Medicines.	

## ANNEX 13: GLOBAL GENERIC PHARMACEUTICAL COMPANIES

**Table A.6: Global Generic Pharmaceutical Companies**

Company Name	Country of Origin	Annual Sales (\$ million)	Company Brief	Internet Address
Agis Industries Ltd.	NA	NA	Manufactures a wide range of products including cardio-vascular, antibiotics, and dermatological pharmaceuticals as well as generic drugs mainly in the field of private label O.T.C. products focusing on topical-dermatology products	<a href="http://www.agisgroup.com">http://www.agisgroup.com</a>
Alza	NA	NA	ALZA Corporation is a provider of drug delivery solutions with technology platforms, including oral, transdermal, implantable and liposomal technologies. ALZA partners with pharmaceutical and biotechnology companies to develop and manufacture pharmaceutical products that enhance healthcare for millions of patients worldwide.	<a href="http://www.alza.com">http://www.alza.com</a>
antas Pharma	NA	NA	Specialized in generic drugs this company is developing and manufacturing in Spain, Latin America, and the Middle East. Site covers company profile and news as well as product information	<a href="http://www.antaspharma.com">http://www.antaspharma.com</a>
Beacons Chemicals	Singapore	NA	Generic pharmaceutical manufacturer in Singapore, specializing in therapeutics in the form of tablets, capsules, ointments, creams and liquids	<a href="http://www.beacons.com.sg">http://www.beacons.com.sg</a>
Bilims Pharmaceuticals	NA	NA	Developer, manufacturer and marketer of high quality generic medicines. Bilim is the 4th ranking pharmaceutical company in Turkey. Information to products and services.	<a href="http://bilimpharma.com">http://bilimpharma.com</a>
DrugMax, Inc.	U.S.	292	DrugMax, Inc. is a full-line, wholesale distributor of pharmaceuticals, over-the-counter products, health and beauty care aids, nutritional supplements and other related products. The majority of the Company's sales are in the pharmaceutical product line. The Company's pharmaceutical products are divided into generic and brand products. In general, brand products offer smaller margins than generic products or the other products it offers. Accordingly, while the Company continues to distribute brand products as requested by its customers, it is focusing its efforts on growing its generic pharmaceutical, over-the-counter and other products lines.	<a href="http://www.drugmax.com">www.drugmax.com</a>
Elan Pharma Ltd	U.K.	61	Marketing and distribution of pharmaceuticals products	<a href="http://www.elan.com">http://www.elan.com</a>
Forest Laboratories, Inc.	U.S.	2,246	Forest Laboratories, Inc. develops, manufactures and sells both branded and generic forms of ethical drug products, which require a physician's prescription, as	<a href="http://www.frx.com">www.frx.com</a>

**Table A.6: Global Generic Pharmaceutical Companies**

Company Name	Country of Origin	Annual Sales (\$ million)	Company Brief	Internet Address
			well as non-prescription pharmaceutical products sold over-the-counter.	
GEA Pharmaceutical Manufacturing Company	NA	NA	Produces generic medicine in Nordic countries.	<a href="http://www.gea-pharm.com">http://www.gea-pharm.com</a>
Indukern Canada, Inc.	Canada	NA	Manufacturer of generic OTC pharmaceuticals, skin creams, food- and feed-additives	<a href="http://www.indukerncanada.com">http://www.indukerncanada.com</a>
Ranbaxy Pharmaceuticals USA Inc.	U.S.	NA	A research-based pharmaceutical company that produces quality generic, OTC and branded drug products for the US market.	<a href="http://www.ranbaxyusa.com">http://www.ranbaxyusa.com</a>
Spear Pharmaceuticals	NA	NA	Produces identical Generics to a Dermatologist's Specifications.	<a href="http://www.spearpharma.com">http://www.spearpharma.com</a>
Taro Pharmaceutical Industries, Ltd.	U.S.	NA	Develops, manufactures, and licenses generic prescription and over-the-counter drugs. Site provides also information and tools for pharmacists, a product guide, press releases and a section with company news	<a href="http://www.taro.com">http://www.taro.com</a>
Teva Pharmaceutical Industries, Ltd.	NA	NA	Teva develops, manufactures and markets generic and branded human pharmaceuticals, active pharmaceutical ingredients, medical disposable and veterinary products	<a href="http://www.tevapharm.com">http://www.tevapharm.com</a>
Upsher-Smith	NA	NA	Manufacturer of branded generics pharmaceuticals	<a href="http://www.upshersmith.com">http://www.upshersmith.com</a>
Watson Pharmaceuticals	U.S.	1,223	Watson Pharmaceuticals Inc. is engaged in the development, manufacture, marketing, sale and distribution of branded and off-patent (generic) pharmaceutical products.	<a href="http://www.watsonpharm.com">www.watsonpharm.com</a>

## ANNEX 14: JAPM-AL RAZI MERGER PRESS RELEASE

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### **JMP and Al Razi Mark Jordan's First Merger in the Pharmaceutical Sector**

By Rana Awwad

AMMAN — The Jordanian Pharmaceuticals Manufacturing Company (JPM) and Al Razi Pharmaceutical Industries Company will be joining their businesses from early next year marking the first merger in the pharmaceutical sector.

The new firm, set to be launched early 2003, will manufacture more than 150 pharmaceutical products, said Mohammad Ghanayem, board chairman and CEO of Al Razi.

The merger decision serves two ends as it will solidify the financial position of Al Razi on the one hand and expand the operations of JPM, officials at both sides said.

Al Razi has been a loss-making project since its launch in 1994.

“We had a shortage in our working capital and production has only started in the year 2000,” said Ghanayem.

The public shareholding company had accumulated about JD6.5 million of losses by end of last June compared to JD4.45 million of losses by end of last year.

The company reported JD193,000 of sales during the first half of 2002 compared to around JD343,000 worth of sales in the same span of 2001.

Al Razi recorded JD1 million in losses during the first half of this year compared to a JD852,000 loss during the same period of last year.

No figures were available on JPM financial results as it is a privately-held firm. But it is known to be a profitable company as its exports reach many markets around the world.

Established in the 1970s, JPM is a pan-Arab venture and is one of Jordan's oldest pharmaceuticals company.

“The merger step falls within our expansion scheme,” said JPM General Manager Adnan Badwan.

“The JPM needs a pharmaceutical plant and Al Razi's facilities suit that purpose,” he told The Jordan Times.

The official merger is pending the assessment of a committee set up to evaluate the assets of both sides.

The findings of the committee will determine the stake each company will hold in the new entity and the number of seats they will occupy on its board of directors.

The vast majority of the workforce at both companies are expected to keep their posts.

“Nearly 95 per cent of Al Razi's 85 employees will not be laid off,” according to Ghanayem.

Badwan also confirmed that none of JPM 270 employees will be dismissed.

The new firm, which will keep operating under the JPM's name, will be a public shareholding company and will be listed on the Amman Stock Exchange.

The Jordanian Association of Pharmaceutical Manufacturers welcomed the step and described it as “positive.”

“Mergers help firms strengthen their financial position, cut expenses, and boost their market share,” said association's Chairman Mazen Darwazeh.

He predicted other mergers in the local market over the coming few years.

Jordan's pharmaceutical sector comprises 17 companies whose combined working capital stands at around \$400 million.

The pharmaceutical industry provides around 8,000 direct and indirect jobs.

The sector is a major foreign currency earner, ranking second on Jordan's exports list in the last nine months of this year. Around 60 per cent of its production is exported and the remainder goes for local consumption.

Wednesday, 27 November 2002

ANNEX 15: PRESENTATION FOR STAKEHOLDERS MEETING

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# Sectoral Marketing Strategy for Inward Pharmaceutical Investment

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Presentation to Jordan Investment Board  
January 28, 2003





# Marketing Focus

Companies: Generics based in Europe

Investments: Contract manufacturing  
Manufacturing under license  
Joint ventures

Market: Europe

- In the future, Jordan may become attractive for greenfield investments from ethical companies with less than \$250M in sales or small-scale R&D investments



# Why Generics Companies?

- Generics companies in Europe are under increasing pressure to reduce costs
- Recent trend of European Generic companies investing in Eastern Europe and India





# Jordan's Competitive Advantages

- Low-risk investment:  
Existing top-quality facilities
- Zero tax on exports
- High-skill / low-wage workforce
- Bolar Provision



# Perception

“The greatest gift that God can give us is to see ourselves as others see us”

Robert Burns

How do we see Jordan as an investment location?

How do potential investors see Jordan?





# Analyst Perspective

## Perception

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Research capability

Skilled workforce available

Access to Arab markets

Attractive tax environment

Attractive today for large-scale, ethical greenfield and R&D investments

## Reality

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Development capability

“Brain drain”

Barriers to trade

Insufficient guarantees

Attractive today for limited generic investments





# Investor Perspective

<b>Criteria</b>	<b>Grade</b>
Perceived Stability	C
Human Resources	B
Market Access	B
Market Size	D
Infrastructure	B
Taxation	
Rate	A
Double Taxation Agreements	C
“Incentives”	D
IPR Protection	A
Lifestyle	B





# Investor Perspective

Jordan is not currently under consideration for large-scale investment by any major player

Current marketing approach is unsuccessful





# Promotional Approach

## Research

- Good intelligence
- Constant education

## Focused Promotion

- Targeted, relevant correspondence
- Capitalize on referrals
- Personal contact through overseas visits
- Professionally-handled site visits

## Follow-up

- Cyclical promotional activity
- Leverage support of commercial attachés





# Initiatives

- Database bought for JIB
- Presentation for EGA Board arranged
- New investor-targeted brochure



# The Irish Model (IDA)

## Staffing

- 8 executives and assistants at HQ
- 4 executives in Europe and USA

## Support

- Databases
- Membership of Associations
- Subscriptions to magazines/journals
- Speaking/attending seminars and conferences
- Regular contact with industry, universities, accountants, banks, lawyers, etc.





# Three-Year Promotional Targets

## Investment

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*Contract manufacturing, Manufacturing under license, Joint ventures*

Number of Projects	12
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Value of Projects	\$60M
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Jobs Created	600
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## Potential for Backward Linkages

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*Hard and soft gelatin capsules, Plastic injection molding, Packaging (Including Design and Printing)*





# Sectoral Marketing Strategy for Inward Pharmaceutical Investment

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Presentation to Jordan Investment Board  
January 28, 2003





# Three-Year Promotional Program

Component	Cost
Industry Database	✓
Journal Subscription	\$4,200
Brochure	\$1,500
Telecommunications	\$3,600
12 Scoping Missions (1 person)	
Airfare	\$8,400
Per Diem	\$25,200
12 Follow-up Missions (2 people)	
Airfare	\$16,800
Per Diem	\$25,200
50 Site Visits	\$15,000
<b>TOTAL</b>	<b>\$99,900</b>

