U.S. Agency
for International Development
Financial Sector Devlepment Project

USAID/New Delhi

OVER THE COUNTER EXCHANGE OF INDIA

FINAL REPORT

July 6, 1992

Office of Government Services
1801 K Street, N W
Washington, DC 20006
Telephone 202 296 0800

Price Waterhouse

June 2, 1992

Mr. Jon O'Rourke
USAID/New Delhi
American Embassy
New Delhi, India
110 021

Mr. R. Ravimohan
Chief Executive
OTC Exchange of India
92-93 Maker Towers "F"
Cuffe Parade
Bombay, India
400 005

Dear Messrs. O'Rourke and Ravimohan:

Re: AID/PRE Financial Sector Development Project
Contract No. PDC-2206-Z-00-8191-00
USAID/New Delhi - Over the Counter Exchange of India

Enclosed please find 35 copies of the Final Report regarding our assessment of the Over the Counter Exchange of India prepared by Price Waterhouse, prime contractor under FSDP.

It has been a pleasure working with USAID/New Delhi and the people of the OTCEI on this important assignment. We look forward to further collaboration in the future.

Sincerely,

J. Richard Breen
Project Director, FSDP

Enclosures

GLOSSARY OF TERMS

OTCEI	The Over the Counter Exchange of India.
BSE	Bombay Stock Exchange.
Sensex	The 30 stock index of the BSE.
Lahk (lac)	Indian unit of measure, equivalent to 100,000 units.
Crore	Indian unit of measure 100 lahks or 10,000,000 units.
Member	A member of the OTCEI who can sponsor scrips for listing for exchange trading, and serves as a market maker for such scrips.
Dealer	Appointed by the OTCEI to serve as a counter offering retail service. May serve as a market maker.
Scrip	A share of stock. May also refer to an issue (i.e. all the shares of stock outstanding for a particular company.)
Issuer	A company qualified to sell its shares in the primary market.
Primary market	A sale of an Issuer's scrips by the company to the public, including an Initial Public Offering (IPO).
Secondary market	All trading between holders of the scrip after the primary sale by the company.
SRO	A membership organization of firms engaged in the securities business, created for the purpose of providing peer regulation of its members and organized so that it can effectively do so, usually with statutory powers under governments supervision.
OTC Committee	The OTC Committee which has received delegation from the Board of OTCEI to conduct the operations of the exchange, make rules, and enforce them.
CCI	Controller of Capital Issues. A unit of the Indian Government which is empowered to set the price at which an issue may be sold by a company in the Primary market.
SEBI	Securities and Exchange Board of India. Empowered to act as the Regulator of The Indian Capital Markets.

Counter A Member or Dealer of the OTCEI and/or the place where they offer services to the public.

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I. EXECUTIVE SUMMARY

A. Background

The Indian capital markets have experienced steady growth throughout the eighties. Estimates from market participants indicate that the primary market has grown from the approximate equivalent of $700 thousand dollars in 1980, to approximately $5 billion dollars today. In terms of liquidity growth, the secondary market has gradually picked up pace as well. In late 1991 the Sensex index of the Bombay Stock Exchange began a steep upward swing to the current level of above 4000.

As part of the government's effort to improve the operations of the capital markets, the Over the Counter Exchange of India (OTCEI) was established in 1990 to be the country's first electronic stock exchange to operate as a nationwide network. Organizational activities have been underway throughout the past 18 months, and as of late March 1992 the OTCEI had 30 Members, and over 100 Dealers.

A small but dedicated staff, under able leadership, has been able to elaborate the general concept of this market as a Self Regulatory Organization (SRO); design and adopt detailed operating procedures; formulate regulations and business rules; and design and implement an automated quotation and trading system.

The first company, Co-Nick Alloys, is in the advanced stages of gaining government (CCI) approval to be listed for trading on the OTCEI. The company, which has approximately 18 months of operating history, will launch approximately 20% of its authorized shares sometime in late April 1992. At this point it is already clear that the OTCEI is introducing several major innovations into the capital markets of India.

In early 1992, the OTCEI Chief Executive, R. Ravimohan, requested the assistance of a team of experts, familiar with the operations of over the counter markets in other countries, principally the NASDAQ, SESDAQ, and SEAQ, to assess OTCEI's current operational capabilities and to make recommendations for its further development. USAID/New Delhi agreed to sponsor the assignment through A.I.D.'sFinancial Sector Development Project. Consequently, a team of four (the Team) traveled to Bombay, India in March 1992.

The team members were:

J. R. Breen	Director, FSDP, Price Waterhouse
Frank J. Wilson	Former Executive Vice President, National Association of Securities Dealers (NASD)
Brian Taylor	Securities Industry Consultant, CBP International
Neil Scott	Information Technology Consultant, CBP International

The work of organizing designing and creating a new market has been done very well. As the first company is now ready to bring its shares public and list on the Exchange, this is an opportune time for the Team's recommendations to be addressed.

B. Scope of Work

The purpose of the work was to review the issues concerning the organization, business strategy, business policies, rules, regulatory activities and information technology programs of the OTCEI. In addition, the Team was to provide recommendations for additional or revised policies and programs that would improve the operations of the OTCEI in the future.

To perform the assignment, the Team conducted numerous interviews. It met with OTCEI management, OTC staff and key members of the financial community and Government of India. Their research focused on the following major areas:

- Market Administration
- Regulation, Compliance and Surveillance
- Communication Systems
- Technology

The Team focused on gathering information in response to the list of issues and data questions posed by the OTCEI in the Official Scope of Work. Attachment I and II contain the complete set of responses to the questions posed.

C. OTCEI as Innovator

i. Price Transparency

First among the many innovations introduced to India by the creation of this market is price transparency. The trading system has been designed to ensure that effective market prices are known to all participants in the market, which includes investors as well as brokers and traders.

ii. Market Liquidity

Market liquidity is to be assured by a system of market makers after the example of the highly successful NASDAQ market in the U.S.. Members of the OTCEI must, and Dealers may post quotations to both buy and sell a given security. This system is most significant in the development of a liquid retail brokerage market serving individual investors.

iii. Retail Brokerage

The Members and Dealers of the OTCEI are required to provide service to the retail brokerage client. This is another innovation in the Indian market, as most brokers or Dealers in the market today prefer not to do business with smaller accounts or individual investors.

iv. Self Regulation

Finally, the OTCEI has been organized to be a regulated market in accordance with modern standards of capital markets regulation and to embody the concepts of a true Self Regulatory Organization. Through its development of a Code of Conduct, the OTCEI is the first in India to promote investor protective measures, such as prohibitions against churning a customer's account, or recommending purchase of securities that are inappropriate for the client's economic position or ability to take risk.

The OTCEI has expressed its intent to prohibit such widespread practices as the abuse of insider information, manipulative practices, price rigging. It also intends to enact regulations that govern the way in which the Member/Dealer ("counter") conducts his relationship with the client.

These are all key provisions of the regulatory framework of the NASDAQ and other advanced markets, and represent excellent work by the staff of the OTCEI. However, it must also be recognized that the effectiveness of any SRO depends on strong Government support. While this has yet to manifest itself in India, the the Government has recently urged all exchanges to implement effective regulatory measures against manipulation and insider trading, and for the examination of firms, and generally, protection of the public.

D. Comments and Recommendations on the OTCEI

i. Compliance and Enforcement

OTCEI should strengthen its regulatory posture. It should appoint a senior official of the OTCEI, reporting directly to the Chief Executive, to be in charge of compliance and enforcement programs. These are essential firsts step in ensuring that OTCEI can become a true SRO. In addition, its compliance effort should be augmented through increased staffing for surveillance, and the creation of Regional Business Conduct Committees of the Members/Dealers to act as the principal enforcement mechanisms of the Code of Conduct.

ii. Business Strategy

The OTCEI will disseminate quotation and transaction information and provide for inquiry of such data. Members and Dealers will input this data and will use the trading system to execute transactions.

In addition to the above, OTCEI should establish a new line business. As the information to be disseminated by the Exchange is one of the Exchange's most valuable "products" it should be considered a source of revenue. This revenue could facilitate the process of making the Exchange self-sustaining. To this end, the Exchange should establish a subsidiary company to market all of the price and trade dissemination information to the public. Presently, OTCEI is required to pay the only vendor of such services, the Press Trust of India, to disseminate the information.

This subsidiary information-marketing company, in the longer term, could become a valuable source of revenue for the Exchange and an innovator in the financial information vending industry. The lack of competition in this sector within India provides a valuable market opportunity for the Exchange.

iii. Tariffs and Charges Structure

The Exchange should determine the tariffs it will charge subscribers and its Members/Dealers for each of the above services. Such a determination will be necessary to build a revenue model, and to design the most appropriate technology architecture and system size. At this stage, it is recommended that the charges have a high degree of usage related content, to cover the central system costs. Fixed plus transactional tariff are recommended to cover the telecommunications costs.

iv. Automated Quotation and Trading System

Computer systems have been developed to support the automated quotation system, a crucial element of price transparency. The findings from the review of the systems and technology platform were encouraging. A very cautious and prudent approach has been adopted to technology acquisition and design. This is further enhanced by the design of a system in which much functionality has been developed over a short time frame.

Nevertheless, it is believed that the automated system, as currently configured, will not be able to support the quantity of transactions that has been anticipated for the first year. As a temporary measure, it is advised that the five processes be distributed onto multiple processors to accommodate the projected volumes for the year end and to ensure that the response times are maintained.

In phase two design work, modifications to increase the functionality and flexibility of the system should be implemented. The Exchange should develop an automated billing module to supplement the five functional processes already defined and implemented.

v. Networking Capabilities

In the longer run, however, the limitations of India's telecommunication system will force the Exchange to look for alternative means of communicating as it expands into other areas across India. Its current options are very limited. Our possible solutions are outlined and presented but the feasibility of these in terms of available resources would have to be the object of further study.

a. Alternative Systems

The OTC Exchange, should conduct a detailed investigation into alternative broadcast systems. The cost of providing such a system will initially be higher than the PTI system, but it is believed that this is the only way for the Exchange to be able to handle the volume of quotes and transaction reports in the short to medium term. This investigation should consider the following technologies:

- The television broadcasting system to send data across a Teletext system or the use of a separate television broadcast channel
- The use of leased lines to all "active" brokers and market makers for both price broadcast and trading
- The use of VHF radio to transmit price information in a digital format to all system users
- The use of a satellite broadcast system to disseminate price information

b. **Cost and Viability Assessment**

The cost and viability of each of the technologies should be determined and a recommendation made as to the most appropriate technology and approach. It would then be possible to recommend a networking strategy. This strategy would probably involve a mixed network containing a number of telecommunications technologies.

vi. **Human Resources and Organization**

The Team believes the staff assembled by the Chief Executive to be highly qualified and enthusiastic. The Team recommends that the OTCEI take advantage of a number of training opportunities which are available. These programs would help the OTCEI staff increase their experience base. This will necessitate sending some of these staff members to classroom and on-the-job training assignments in other countries, such as the United States, the United Kingdom, and perhaps Singapore.

It is believed that certain training classes of the NASDAQ in the U.S. could be opened to staff members of the OTCEI. Opportunities could also be explored for observation visits to NASDAQ's Members and Dealers to familiarize the staff with various methods of operating in the over the counter market, including underwriting, market making and trading. It is felt that these training and observation experiences are necessary to prepare staff members for the future growth of the OTCEI. Appendix E is an Organizational Chart of the proposed OTCEI management structure.

II. OTCEI CORPORATE STRATEGY AND OBJECTIVES

The Team found that the OTCEI's corporate strategy addressed four major objectives. The corporate objectives can be summarized as the following:

- To function as an efficient primary market for small companies offering securities to the public.
- To encourage a liquid aftermarket (secondary market) for retail investors.
- To function ethically and with the highest standards of conduct.
- To be accessible to all categories of investors throughout India.

In general, the Team found the strategies and objectives of the OTCEI to be sound and achievable. Each of these strategic objectives reflects the role OTCEI plays as an innovator in the capital markets of India. The Team felt that the pursuit of these objectives would greatly enhance India's overall financial sector capabilities.

A. Primary Market Efficiency

The review of the companies under current consideration for listing on the OTCEI confirms that the OTCEI can provide a unique vehicle or "entry port" to the capital markets for small entrepreneurial companies just emerging from the venture capital stage. The first company (Co-Nick Alloys) to list on the Exchange is an excellent example of innovation. ICICI, a venture capital firm that brought this company to life, will sell its share. Thus, the existence of the OTCEI now gives the financier an opportunity to "exit" profitably, and redeploy its capital in new ventures.

The company itself will not collect any of the resources of this offering of 20% of its shares, but its future needs for capital are more assured because it is listed on the OTCEI. A secondary offering, therefore, will be evaluated by existing holders who will have some knowledge and experience as investors in the company.

The Team's limited survey of sponsors (i.e. Members) suggest that it will be feasible to list approximately 50-100 small companies on the OTCEI over the next year. The wide range in this projection reflects the fact that the process is new and subject to unanticipated delays, as the Members gain experience.

B. Secondary Market: Retail Investors

Another key corporate objective of the OTCEI is to promote a system of retail "counters" maintained by the Members and Dealers to provide service to those members of the public who wish to trade on the OTCEI. This represents a real innovation in practice in the Indian capital markets.

Virtually every broker/dealer the Team consulted explained that they prefer to deal only with Institutional clients. There are, therefore, numerous complaints that individuals with small amounts of shares cannot readily sell them through established brokers. The only resource these individuals have would be to deal with irregular agents operating in the curb market. These agents collect exorbitant markup by suppressing knowledge of the true market price obtained on the floor of the Exchange.

With the automated quotation and transaction reporting system, each customer has price information necessary to make an informed buy/sell decision, and would not have to rely on the curb market for executing orders.

The Team found that, in large part, the development of the retail brokerage business is repressed by the practices of government intervention, particularly the selling of shares on the primary market through "lottery" type processes at concessionary prices. As a consequence, this whole area of business, the buying side of the primary market, is precluded from the brokerage industry. It is not surprising that when these "winners" of the "lottery" desire to sell their shares and collect their profits, the regular brokerage houses have little incentive to offer their services to them.

It is recommended that the Board of the OTCEI seek whatever permission is necessary to allow the OTCEI member to sponsor a scrip through a fixed price firm underwriting process. This would allow the underwriter to arrange to buy the shares from the issuer and to resell them through their networks of OTCEI Members/Dealers. The investors who purchase shares of new companies through the Members/Dealers of the OTCEI could have no trouble finding service on the sell side of the transaction. A further advantage to this process is that the Members/Dealers of the OTCEI are obligated to observe the rules and standards of the OTCEI as it concerns their selling practices.

C. Promoting Integrity and Ethical Conduct

The OTCEI aims to provide both Members/Dealers and customers with a regulated market to assure fair play for issuers, investors and brokers. To this end, OTCEI has adopted a "Code of Conduct for Members and Dealers", and draft "Business Rules" applicable to its Members and Dealers. These codes are more advanced than any existing regulatory framework in India. Practices which are not controlled on the conventional stock exchanges, such as insider trading, manipulation of prices, unethical selling practices etc. are, or will be specifically prohibited by the OTCEI codes.

D. Market Expansion Plan

At the present time, all Members/Dealers appointed by the OTCEI are confined to the City of Bombay, the country's most important financial center. New issuing companies can come from any part of the country. In Bombay alone, some thirty Members, and approximately 100 Dealers have been selected through an extensive process of interviews and review of written applications.

Once the market is operational, it is the clear goal of the OTCEI management to expand the coverage of the market throughout India. The business plan for this growth objective is indeed ambitious, and seems to be driven by a need to demonstrate presence in other major cities and towns around India, rather than questions of cost effectiveness or financial feasibility.

By the end of 1993, the OTCEI plans to appoint over 1000 new Members and Dealers in seven major urban areas of India. The clearest barrier to operation on a national scale is the lack of effective telecommunications to allow interactive computer-to-computer flow of data necessary to support the automated quotation transaction and order processing systems. The plan for expansion into new areas in 1993 is anticipated to be as follows:

Location	Members (a)	Dealers
Bombay	100	500
Delhi		150
Calcutta		150
Madras		75
Hyderabad		50
Amedabad		100
Pune		25
Bangalore		50
Total		1100

(a) The number of Members in the new locations is expected to keep approximately the same ratio to Dealers as is planned for Bombay.

The Team believes that expansion into these other areas of the country is desirable. The telecommunication constraint is so serious, however, that there can be little expectation of successful integration of automated operations between all these areas in the near future. Later in this report certain studies are recommended to develop the optimum combination of technologies capable of integrating new areas of the country into the OTCEI market operation.

In the absence of a professional sizing exercise and benchmark testing of the computer system, the Team was unable to validate whether the current system design would be able to handle the volume of transactions that is compatible with the anticipated pace of expansion..

E. Need for a Business Plan

The Team believes that OTCEI's current long range plan is more a set of stated goals for expansion, and not a true business plan. The plan does not assess these goals in the context of financial resources i.e., revenues and costs of operation, as well as the cost of capital investment. Obviously, any plan of expansion, no matter how ambitious, is feasible, in financial terms, as long as there are no resource constraints.

As mentioned elsewhere in this report, the initial operations of the OTCEI have been well supported by the initial capital commitments of the organizing shareholders and assurances of future support have been made. For the longer run, however, the realism of such an assumption is doubtful. Resource issues should be brought into planning discussions even at this early date. Eventually, the OTCEI will have to prove that it can generate resources sufficient to support its operations and capital needs for the future.

In this connection, it is recommended that the staff and management of OTCEI prepare a new version of its future long range plan for expansion and capital investment in the form of a financial budget and model.

F. Recommended Business Strategy

The OTCEI will disseminate quotation and transaction information and provide for inquiry of such data. Members and Dealers will input this data and will use the trading system to execute transaction. OTCEI has determined that it will disseminate quotation and transaction information on a real time basis and provide for inquiry of such data. Members and Dealers will input them later and will use the trading system to execute transactions.

In addition to the above, OTCEI should establish new line business. As the information to be disseminated by the Exchange is one of the Exchange's most valuable "products" it should be considered a source of revenue. This revenue could facilitate the process of making the Exchange self-sustaining. To this end, the Exchange should establish a subsidiary company to market all of the price and trade dissemination information to the public. Presently, OTCEI, will be required to pay the only vendor of such services, the Press Trust of India, to disseminate the information.

This subsidiary information-marketing company, in the longer term, could become a valuable source of revenue for the Exchange and an innovator in the financial information vending industry. The lack of competition in this sector within India provides a valuable market opportunity for the Exchange.

III. ORGANIZATION AND OPERATION OF THE OTCEI

The organizational structure of the OTCEI is innovative and capable of handling the needs of the market. It is composed of the following management and operations groups:

- The OTC Committee
- The Board of Directors
- The OTC Staff
- The Members/Market makers
- The Dealers

A. The OTC Committee

The OTC committee is the principal executive committee of the Exchange. It derives its powers from an extensive delegation from the Board of Directors. The functions of the Committee include establishing rules, enforcing standards, arbitrating disputes between Members/Dealers and between Members/Dealers and the public, and in general supervising operations of the OTCEI.

The Committee, convened by the Chief Executive of OTCEI, is composed of various members appointed by the Board. These include no more than four from among the Members, and no more than four from among the Dealers and representatives of the public.

Given the experience of other OTC markets, it is advisable that the OTC Committee always have as members, at least two high profile representatives of the public. This is not frequently required.

B. The Board of Directors

The organizing shareholders of the OTCEI are eight of the most important and prestigious financial institutions in India. All are predominately owned by the state. The Board of Directors is composed of one representative of each of the shareholding institutions which are the following:

Shareholder	% Shareholding
Unit Trust of India (UTI)	20
Industrial Credit and Investment Corporation of India Ltd. (ICIC)	20
Industrial Development Bank of India (IDBII)	17
SBI Capital Markets (SBI Caps)	11
Industrial Finance Corporation of India (IFCI)	8
Life Insurance Corporation of India (LIC)	8
General Insurance Corporation of India (GIC)	8
Canbank Financial Services Ltd. (CANFINA)	8
	100%

C. The OTC Staff

The proposed organizational chart for the OTCEI staff is shown in Appendix E. At the time of the Team's visit, the total staff numbered about 15, and recruiting was in progress to bring that number up to about 25-30. In later sections of this report recommendations for certain organizational modifications, as well as for the further training of staff members are discussed. The Team believes the staff assembled by the Chief Executive to be highly qualified, even though they lack specific experience with organized markets exchanges. As it is not possible to find this experience in India, it is believed that the staff would benefit greatly from further technical training.

There are a number of training opportunities which are available which would assist in overcoming the experience gap, and would prepare staff members for the future growth of the OTCEI. Recommendations concerning training are made in Chapter VII - Human Resources and Training.

D. The Members

The principle operators in the market are the Members. There are currently thirty Members in the Bombay area who have been selected and have paid their initial subscription. The role of these Members is critical to the success of the market.

The primary role of the Members is to research prospective companies that would make good candidates for listing on the OTCEI. Once selected, the Members assist the company in preparing for a public issue including the preparation of a prospectus. Once listed, the Member undertakes to make a market in the trading of that company's shares for a minimum of three years and to enlist a second Member to be a Market Maker who is required to do so for one year.

The role of market makers is a clear innovation in the Indian market. While investment firms in many countries advise and assist firms in offering their shares to the public, they do not, thereafter, obligate themselves to make a market in that company's shares.

E. The Dealers

More than 100 Dealers have been appointed in the city of Bombay. Dealers do not "sponsor" or underwrite new issues. Rather these Dealers operate principally in the secondary trading market, and may serve as retail "counters" to service clients. They can apply to be recognized as market makers for a particular issue, and may trade in securities for their own account or for a client. If offered for market making in a security they are committed to do so for at least 90 days.

IV. MARKET OPERATIONS

The operations of the Exchange have been well-researched and developed, and are presented in various documents published by the OTCEI. The Team appraised each of the major facets of the proposed operations of the OTCEI, and in several areas believes that there are improvements that should be added in the coming months.

- Key Listing Criteria
- Pricing and Distribution Policy
- Market Making and Trading Rules
- Secondary Market Liquidity
- Clearance and Settlement Procedures

A. Key Listing Criteria

Appropriate listing criteria is critical to the longer term success of the OTCEI's goals and objectives. The Team analyzed and evaluated current key listing criteria.

The key criteria that OTCEI has adopted, in order that an issuer be quoted and traded on OTCEI, are as follows:

- the company must be a listed company on the OTCEI in order to be quoted and traded on the Exchange;

- the company must be a "small" company, (i.e., with an issued capital of between Rs 3 million and Rs 250 million or US$ 100,000 - 8,300,000);

- the company does not need a trading history in order to be listed;

- the company must be "sponsored" by an OTCEI member which must make a market, and must appoint an additional market maker, and a registrar (from the approved list) in order to be listed.

Three additional issues that are key to the successful generation of new issues at OTCEI, but have yet to be finalized are:

- issue pricing is intended to be free market pricing (the precise definition of this is yet to be decided);

- For listing, quotation and trading on the OTCEI, the issuer need only issue 20% of the total issued share capital of the company;

- The company applies to the OTCEI for consent for listing; and once granted, the OTCEI shall verify the issuing price.

B. Listing Criteria Observations

With respect to the OTCEI's key listing criteria the team had several observations

i. The company must be a listed company on the OTCEI in order to be quoted on the Exchange

In effect, this policy prohibits cross listing of issues ie., listing of issues on the OTCEI, that also might trade on another exchange. In the short term, this rule will assist the OTCEI in creating a niche market in small companies; and if thoroughly policed and enforced, should avoid the development of a curb market. In the longer term, however, the rule may prove to be a business constraint for the market and its Members.

In the longer term, it is recommended that the OTCEI urge the Government to relax this restriction and adopt a strategy that is similar to other Indian exchanges, which would permit cross listing of issues listed on other Indian or foreign exchanges.

ii. The company must be a "small" company (ie with an issued capital of between Rs 30 lakhs and Rs. 25 crore)

This rule has been constructed in order to distinguish the OTCEI issuers from those on the other exchanges, and thereby to avoid dual listings. Economically, this rule represents a great asset to the country (small issuers now have a chance to tap the equity markets to lower their cost of capital.) By lowering their cost of capital small companies will improve their chances of growth. On a national scale it is felt this will have the effect of improving the GNP and the balance of payments.

The establishment of OTCEI can be seen as part of a worldwide trend toward providing organized market facilities for smaller companies. The historic example is the NASDAQ in the USA though it now includes many large companies and has segmented these larger companies into the NASDAQ National Market System. It has also recently created another system, NASDAQ, OTC, Bulletin Board for public companies not listed in NASDAQ. The most recent small companies exchange market to be established is the American Stock Exchange's Emerging Company Marketplace ("ECM"), created as a competitor to NASDAQ.

iii. The company does not need a trading history in order to be listed

This practice is not unique to the Indian markets or to the OTCEI. It is however more prevalent in India, than in the U.S. or London markets. In those markets, ventures that are brought directly to market without operating experience tend not to sell well, and are frequently constantly under suspicion. Disclosure requirements force the backers of these ventures to emphasize the lack of operating history.

In the case of the OTCEI it was noted that most of the projects reviewed were able to present at least some operating history. Nevertheless, the fact that sponsors of new ventures are required to make a market in those shares for three years offers some comfort that the investor will be supported.

The other aspects of the rules of operation of the OTCEI also offer investor protection against churning and inappropriate selling practices. The protection offered by these rules would be reinforced if ventures were supported by a true "underwriting" policy.

iv. The company must appoint a sponsor, an additional market maker, and a registrar (from the approved list) in order to be listed

These requirements are necessary to implement the market maker system, and to reinforce the responsibility of the Members who sponsor or underwrite issues in the market for bringing good quality companies to the Exchange. The significant innovation required here is that the company appoint only an approved registrar.

The registrars in the Indian capital markets are not regulated. By taking this step, OTCEI rightly intends to supervise the registrar's handling of the company's share transfer and corporate action programs, and to ensure service to the retail customer. This is an excellent step, and one which should be emulated in the other stock exchanges of the country, and at the level of the regulator of the capital markets (SEBI).

However, looking at the long term objective of promoting settlement efficiency, it is recommended that the number of registrars be steadily reduced and/or centralized as the OTCEI expands into other markets in India. OTCEI should grow together with the best registrar(s) and invest with them in the required market infrastructure for supporting the registration process of the OTCEI market. If this investment process is kept to a smaller list of registrars then it will reduce the transaction costs and improve efficiency in the market place as a whole.

v. **The company applies to the OTCEI for consent for listing, and once granted the OTCEI shall verify the issue pricing**

This procedure contains two aspects which we will discuss separately below:

1) OTCEI issue consent
2) OTCEI issue pricing

a. **OTCEI issue consent**

This procedure is necessary to permit the OTCEI to confirm that the listing requirements have been met. Also, in this instance the OTCEI is assuming the role of regulator of the marketplace. The consent process is a necessary tool of the regulator, which, without approving the prospectus, assures that it meets the test of full material disclosure.

b. OTCEI issue pricing consent

The OTCEI issue pricing consent represents undue interference in the market process. It is recommended that this practice be discontinued, and replaced by the firm underwriting method described above.

vi. Issue pricing is intended to be free market pricing

The Government has announced that it intends to terminate the current process in which the initial price of a new issue is determined by a government official (the Controller of Capital Issues.) This development is applauded as a forward step to improving the efficiency and effectiveness of the capital markets. Indeed, it is recommended that this authority to set prices in the market be dropped from all governmental authority.

As a temporary expedient, the CCI has permitted the OTCEI to approve a Member's application for a listing price. The CCI has agreed to accept the recommendation of the OTCEI without further review. Again it is believed that this governmental interference in the processes of the market, even when effected through the OTCEI which is market oriented, represses the market and does not allow it to perform its function. The practice should be discontinued with immediate effect.

C. Pricing and Distribution Policy for OTCEI

Under the system outlined in various Indian laws and ministry regulations, a company's shares must be sold through an allotment (or lottery) system whereby subscriptions are sought by the issuer from the public at large, and those successful in the lottery receive shares. Collection centers, a minimum of 57 throughout India, are used to collect the public's subscriptions. There could be any number of banks that are used as well.

The OTCEI is permitted to use only four of the collection banks, making its offerings more efficient and less expensive. In the primary offering, the underwriter is primarily an advisor and does not participate in the actual distribution process. Firm commitment underwriting is non existent.

As noted above, the price of the share is determined by the CCI usually at a price referred to as par. The Team found that this concept of par seems to carry with it a presumption of fairness i.e., anything over par is presumed to be unfair to the investor. This is despite the overwhelming evidence to the contrary in the secondary markets of India.

In place of this system, it is recommended that the price of a new OTCEI issue be set by negotiation between the issuer and the underwriter. Under this system it is the underwriter, or Syndicate Manager, who will take responsibility for selling the shares, usually through a selling group.

The aim of the price setting negotiation between the Issuer and Underwriter is to achieve a price that is at once fair to the Issuer and fair to the Investor. In new issues, there is no objective measure of the correct price. Underwriters usually attempt to price the issue according to indications of interest which are received from the syndicate (i.e. selling groups) members who are in touch with their Retail and Institutional customers. At the time of the pricing, the issuer can always reject the price offered by the underwriter. In such a case the offering will not proceed and the Issuer will lose what it has expended during the preparatory period. It is more normal for the two (Issuer and Underwriter) who have accomplished all the work of the offering together to come to agreement based on their shared understanding of all the market information they have gathered during this process.

When the price is agreed, the OTCEI Member/Sponsor will purchase the shares of the Issuer at that price. He then distributes the shares through the selling group which, in turn, resell them to their clients at the official offer price. The lead manager also distributes a share of the fees of the offering proportionate to the purchases of the selling firms. The quantity of shares allocated to each firm is usually negotiated according to the following criteria:

- indication of interest levels during the pre-launch phase of the offering
- demand
- issuer objectives
- reciprocity within the syndicate group
- placement capability of the firm

It is worth taking note of the criteria that the market will use over time to judge the effectiveness of the Investment firm or underwriter who has brought the issue public.

Most analysts believe that investment bankers must be careful to make sure that both sellers and buyers of their securities are satisfied. Even though it is not always easy to achieve, an investment firm will thrive in the long run only to the extent that its reputation for good pricing decisions is intact. A firm with a reputation for overpricing its securities will lose it's investor base over time.

With regard to the payment of the issuer and underwriter, the lead manager/underwriter pays the issuer on the closing date the total value of the issue, net of fees and expenses, and in turn distributes the fees to the underwriting group on a timely basis. This prompt distribution of the proceeds of the offering is in marked contrast to the long periods (up to six months) where the money from the sale of the shares through the lottery remains idle. It is, therefore, unavailable to the issuer as it remains in an account until the long allotment process is completed.

It is recommended that a professional approach to the selling and distribution of securities be adopted. It is believed that this is more appropriate to the types of issues and the quantity of shares to be sold on the OTCEI. It offers many advantages over the allotment system, including less cost, fewer delays in processing, and a stimulus to the development of the retail brokerage industry.

Training of the staff and management of some of the OTCEI Members may be necessary. This training is best arranged in the form of observation visits with U.S. and U.K. investment firm's banks. Other, more formal training opportunities, are available at such institutions as the New York Institute of Finance. Further information is continued in Chapter VII - Human Resources and Training.

vii. <u>For listing, quotation and trading, the minimum issue may be as low as 20% of the issued share capital of the company.</u>

This measure compares with minimum issue requirements as high as 60% of authorized share capital on the Bombay Stock Exchange. While this is an attractive inducement to company owners that wish to retain majority control of their company's shares, the measure has implications for secondary market liquidity. The 20% minimum will result in fewer of shares available for public trading. For example, the entire primary issue of Co-Nick Alloys will amount to only 600,000 shares. It is impossible to predict whether this amount will be sufficient to sustain a liquid secondary market.

It is recommended that the OTCEI adopt a listing requirement that the issuing company demonstrate its ability to attract a minimum number of investors. For example, it could require that its shares be held by at least three hundred stockholders in the public markets. A public stockholder threshold is a requirement by NASDAQ and US Exchange listings. As exemplified by NASDAQ and other U.S. exchanges, this should assist in simulating secondary market trading.

D. Business Rules: Market Making and Trading Requirements

OTCEI's draft business rules which are designed to regulate market making and trading procedures are very comprehensive and necessarily quite lengthy. It is believed that these rules are carefully drawn and provide a sound basis for regulating market makers during market operations. However, it is felt that in the longer run, the OTCEI will face certain issues which may call for modification of certain rules.

Suspension of Offerings Quotations if Combined Inventory of The Compulsory and Additional Market Makers Is Less Than Five Percent of Floating Stock --Prohibition On Short Sales By Market Makers

OTCEI's By-laws and Draft Business Rules restrict the aggregate inventory of the Compulsory and Additional market makers in an issue to no more than 5% of the outstanding float of the issue and permit one or the other of them to cease quoting an offering side of the market if their aggregate inventory is less than 5%.[1] Further, market makers are required to refrain from publishing offering quotations if their inventory is exhausted, and they are prohibited from selling stock short.[2]

[1]It should be noted that this will almost always permit one of the market makers to make a one sided market since it is not likely that a combined inventory will always be exactly at 5% of the outstanding float. Also, there is nothing in the rules which states what happens if the aggregate inventory exceeds 5%. Does someone have to withdraw from the bid side of the market?

[2]While we were told that short sales by market makers are prohibited, we find no provisions in the By-Laws or Draft Business Rules specifically so stating The Draft Business Rules at Section 12, Settlement, seems to presume a prohibition on short sales as to investors in that it states "as over the counter trading does not permit either short selling or forward buying by investors, all deals are assumed to be concluded the moment they are confirmed by the over the counter central computer . . ." However, a specific prohibition does not appear in the By-laws or Rules, and there does not appear to be a statement anywhere that relates to market makers. Nevertheless, we will presume that short selling by market makers is prohibited because statements to that effect were made to us by OTCEI staff.

It is the expressed intent of OTCEI to create a quotation driven system with competitive, multiple market makers. However, permitting a market maker not to quote a two sided market and prohibiting short selling by them is inconsistent with that concept which envisions that a market maker will always stand by a published two sided market quotation and that in doing so he necessarily, albeit involuntarily, may be required to go short on occasion to properly discharge his market maker responsibilities. This could happen at any time during the trading day in order to fill an order[3]; indeed, it could happen more than once during the day. In reviewing the ramifications of these OTCEI requirements, several leading market makers in the United States were interviewed and each was firm in his position that a quotation driven system cannot long survive under a rule prohibiting market maker short sales or requiring a market maker to withdraw from the offer side of the market when his inventory is exhausted. Each emphasized that short sales add liquidity and stability in a rising market, because the market maker must cover his short, and that the function of short selling assists in carrying out the price discovery function of the marketplace.

While we do not advocate **investor short sales** in the OTCEI market at this time, we do, however, strongly recommend that market makers *always* be required to quote a two sided market and that short sales by market makers be permitted in order to satisfy this requirement. The necessity of permitting short sales by market makers was emphasized by the National Association of Securities Dealers, Inc. (NASD) recently when for the first time it imposed short sale regulation in connection with short sales in its NASDAQ market. The proposed rule, however, contains an exception for qualified market makers, under certain criteria, and the NASD used strong language in justification of the need therefor. It said that:

> " . . . an exception from the short sale rule for bona fide market making activity is considered fundamental to avoid disrupting traditional dealer activity . . . The . . . proposal contains an exemption for qualified market makers so that dealer activities that provide liquidity and continuity to the NASDAQ market will continue uninterrupted."

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[3]For instance, if his investment was on 1500 shares and he received an order for 2000 shares, upon execution he would be short 500 shares. Alternatives would be to turn down the order (which isn't consistent with our orderly market) or attempt to partially fill the order which the customer could reject.

> "... a short sale rule must be formulated in a manner to preserve market maker depth and liquidity in NASDAQ/NMS securities. Qualified market makers must have the unfettered ability to effect short sales to balance their positions at any time during the trading day, and therefore the proposed rule has been designed to include an exemption that does not hamper a dealer's ability to buy and sell stock. Additionally, the [NASD] Board is committed to implementing a short sale rule that does not adversely effect the market maker's ability to manage risk. Dealers must be permitted the flexibility to sell short when necessary ..." (Emphasis added)[4]

In the United States, the government regulator (the SEC) as well as the self regulatory organizations (the exchanges and the NASD) agree that there is nothing inherently wrong with short selling. Rather than prohibiting it, they have opted to regulate the manner in which it occurs. The SEC has often expressed itself on this subject. When doing so it has emphasized the need to regulate short sales in a declining market but it has never advocated prohibiting them. It has stated that the purpose of short sale rule is:

> "... to prevent speculative selling in exchange listed securities from accelerating a decline in the price of a security and to prevent a form of manipulation known as "bear raiding" or "piling on". Piling on occurs when short sales exert pressure on the stock's price, forcing the price to drop precipitously, frequently within the single trading day."[5]

The SEC curbed this potential abuse by permitting investor short sales only on an uptick or a zero minus tick. NASD's new rule has similar effect but with exemptions as to legitimate market making activity. The SEC further stated:

> "The Rule is designed to limit short selling of a security in a declining market, by requiring, in effect, that each successive lower price be established by a long seller. This reduces the

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[4]NASD Notice to Members, 92-8 (January 29, 1992) at p. 33 and 35.

[5]This statement was made in connection with Rule 10a-1 under the Securities Exchange Act of 1934 which regulates short selling on exchanges, but the statement is pertinent here.

> ability to employ short selling as a manipulative device to accelerate a decline in the price of a security by exhausting all bids at one price level. At the same time, the rule allows for relatively unrestricted short selling in an advancing market." (Emphases added).[6]

The United States market makers interviewed uniformly emphasized that involuntary short selling to fill an order creates liquidity and stability and that it is not negative or evil; in fact, they strongly assert that it is positive, contributes to orderly price discovery and provides an essential service to investors who may be there on only one side of the market at any given time. Market making is designed to and must provide liquidity when buyers and sellers are not present on both sides of the market. Prohibition on the publication of offering quotations when inventory is exhausted, and on market maker short selling, is inconsistent with such.

In sum, the purpose of market making in a quotation driven system is to create liquidity and stability. The opinions and advice of the highly experienced and successful U.S. market makers on these various issues -- and the NASD Board in the promulgation of its new rule -- can be summarized as follows:

- Liquidity is serverly impacted if a market maker cannot, at least involuntarily, go short.
- A disincentive to market making exists if the market maker cannot execute an order without going short if inventory is insufficient.
- Market makers assume extraordinary risk on the long side. Inability to short would negate a desire to carry inventory.
- Short sales add liquidity and stability in a rising market. A market maker must have the ability to go short.
- The prohibition on short selling could give the unscrupulous a reason to manipulate if they could only make money on the upside; that is, it could create an incentive to cause the price to rise unnaturally.
- Short selling permits a market maker to better manage risk.

[6]Securities and Exchange Act Release No. 34-30772 (June 3, 1992)

- Failure of a market maker to carry an offering quotation would be a very negative public announcement of the viability, or lack thereof, of the market in that stock -- and perhaps the OTCEI market as a whole. It could cause doubts in investors' minds as to the credibility of the market and cause them to alter their investment decisions as to the stock in question.

- If market makers must suspend offering quotations when inventory is exhausted, competitors will have an incentive to price their stock to the market maker's disadvantage because they would know the market maker needs stock.

- Since the five percent rule relates to the combined inventories, the Compulsory and Additional market makers will know each others positions to the potential disadvantage of each.

- What happens when the 5% limit is exceeded is unclear. It would seem to suggest that one or the other, or both, of the Compulsory and Additional market maker must withdraw from the bid side of the market.

It is recommended, therefore, that a system of controlled short selling be put in place by OTCEI. It should establish criteria for such and closely monitor adherence thereto. It is noted that OTCEI's restrictions on the amount of a price move from one execution to the next, within a trading day, and on successive days, should relieve anxiety on its part as to potential short sale abuses by of market makers in accelerating a declining price.

It is further recommended that:

- Market makers be permitted to sell short -- at the very least when the action is involuntary, that is, to fill orders.

- Market makers not be prohibited from publishing an offering quotation when inventory is exhausted.

- Permissive short sale criteria be established as deemed necessary and that such be closely monitored by OTCEI.

- That market makers not be permitted to cease making offering quotations when aggregate inventory of the Compulsory and Additional market makers' inventory is less than 5%.

- The 5% restriction on the amount of aggregate inventory which can be held by Compulsory and Additional market makers be eliminated altogether. A market maker should not be required to disclose his inventory to a competitor.

- If the 5% requirement is retained, what happens when it is exceeded should be clarified.

In other words, reasonable control of short selling by OTCEI would be consistent with the efforts of other markets to curb abuses, but it should be done in a way that would enhance liquidity and stability, rather than having a negative impact thereon.

ii. **Market Information - market makers/counters who have access to price sensitive information must inform the OTCEI first, who will, in turn, disseminate this information to the OTC counter network**

The rules on price sensitive information collection and dissemination are only as good as the enforcement and surveillance mechanisms that are in place to detect adherence. If these collection/dissemination mechanisms are not robust then it is very likely that the market will function on the basis of insider trading. The OTCEI should implement a "Stockwatch" system to begin to correlate trading with market news breaks.

iii. **OTCEI trading times - trading will take place between 9.30 am and 11.30 am from Monday to Friday every week.**

Traditionally, exchanges around the globe have created specific trading hours due to the physical constraints associated with being floor based markets. In the past decade, these constraints have become less onerous due to a few major developments. In certain markets, technology and communications, have moved the Exchange from the floor to the office via the screen. From the investors viewpoint, the need to manage the market risk and volatility on a continuous basis has become preeminent in the quest for portfolio enhancement. Exchange floors have become significantly less important. The London Stock Exchange reorganized there by eliminating its floor.

A prudent approach should be adopted by OTCEI when extending the trading hours, especially as competitive threats have yet to crystallize. The market should operate with the current trading hours and overcome any teething problems that may arise once the market goes live. The OTCEI should then undergo a period of consolidation whereby key aspects of the Exchange are seen to be functioning on a timely and effective basis.

Specifically, the enforcement of standards in the areas of regulation, surveillance, clearing and settlement should be addressed. Assuming these key areas are functioning effectively, and there is capacity in the market place for further expansion of trading hours, trading hours should be extended steadily until the OTCEI functions for a full working day. It should not be guided by the fact that the other Indian Exchanges are only open for two hours per day.

iv. Capital adequacy: Market maker and dealer credit risk is managed by the OTCEI having the power of attorney over the market maker/Dealer cash accounts held with the OTCEI

The credit risk and continuous capital adequacy management of the OTCEI participants is managed by the OTCEI, which maintain a power of attorney over the market makers and Dealers cash accounts. This system allows some capital adequacy management, but it may represent an inefficient or inadequate use of capital.

Capital adequacy is typically an issue for the uniform nationwide minimum regulation; however, elsewhere around the globe new exchanges have recognized that there is also a need to monitor and control market and counterpart risk at the exchange level.

Accordingly, the OTCEI should implement a dynamic system of capital adequacy monitoring and control. This system should accounts at least on an end-of-day basis, for the change in "mark to market" value of market makers/Dealers open positions and counterpart risk. Such a system would supplement the current procedure that the OTCEI has to maintain control on a static basis over Dealers cash accounts, and would be an interim solution while SEBI creates a national system.

v. The use of a market making system as opposed to an order driven or hybrid system

The OTCEI has chosen the market making or quote driven system as the basis of operation for the market place. The Team had no basis on which to evaluate whether this will be the approach to achieve a successful market place. However, it may be worth continuously evaluating whether there is a need to supplement the quote driven system with an order driven system. It should be noted, however, that this is not recommended. The quotation driven system is superior and every effort should be made to make it work.

E. Promoting Secondary Market Liquidity

While secondary market liquidity is not a rule or procedure, it is the very heart of the market. Without liquidity there is no market. Given the crucial nature of market liquidity, it is appropriate to review, in summary manner, key success factors in generating liquidity and those that may prove to be constraints to the development of a liquid secondary market.

i. The Success Factors

The analysis of the OTC's strategy shows that there has been a very successful promotion of the OTC concept among first time offerors. Based on the Team's interviews with a number of intermediaries, it is felt that the Exchange will achieve its objective of floating some 50 - 100 new issues (Initial Public Offerings "IPO's") with the first year of operation. However, these new issues need to become the basis of an active secondary market in order for OTC to be successful.

To create an active secondary market will require a number of factors to be in place:

- development of an active research and marketing base by the Members and brokers
- firm, realistic, two-way quotations of the new issues once they enter the secondary market
- general awareness of the OTCEI, its strengths and its accessibility to the retail investor
- performance of the technology base
- the distribution of the technology base into the regions of India outside Bombay, which in turn depends on the successful development of a telecommunications infrastructure

- an active public relations program targeted at the potential investing audience. Assuming the market includes a heavy bias towards the retail market, the public relations program should cover the mass media, bulletin boards and at the inception of the market place, a heavily publicized launch ceremony.

It is estimated that the realization of this secondary market will depend on the ability of these brokers to mobilize the untapped wealth of some 50 million middle class Indians. Accordingly, the true influence of these investors on the growth of a secondary market should be fully appreciated.

ii. The constraints

Many of the constraints to secondary market liquidity have already been discussed elsewhere in the report. The most significant constraints are:

- The securities industry has not developed a retail brokerage service sector. There may be a lack of placement power, and low customer loyalty between investors and intermediaries.
- The lack of a critical mass of floating shares in issue and circulation (the 20% rule and the lack of different classes of shares)
- Technology: long response times
- Technology: lack of multiple screens per broker
- Prohibition of short selling by the market makers
- Interference in free market forces on new issue pricing
- Cumbersome and prolonged clearance and settlement system and the lack of a true book entry system and depository.

F. Clearance and Settlement Procedures

As with the market making/trading procedures and rules above, the strategy, and the detailed procedures and rules that the OTCEI have planned for the clearance and settlement in the OTCEI market place is very impressive. OTCEI management has created a workable framework for clearance and settlement, given the very poor clearing and settlement functions within the existing Indian capital markets.

However, there exist two strategic areas where the Exchange should focus its future attention:

- Risk management of forgeries and defects to settlement of Temporary Counter Receipts (TSRs), Counter Receipts (CRs) and Sales Confirmation Slips (SCSs).
- Rationalization and strategic growth of the registration process

i. Risk management of forgeries and defects to settlement of TCRs, CRs and SCSs.

The concepts surrounding TCRs, CRs and SCSs are commendable as they are the best option open to the OTCEI, where the aim is to operate a clearing and settlement system on an efficient basis. One concern, however, is the ability to maintain and enforce these systems, especially, in light of the many reports regarding delayed settlement in other Indian exchanges.

ii. Rationalization and strategic growth of the registration process

The OTCEI has already aimed to reduce the settlement and registration risk by limiting the number of participants in the market place to those that can satisfy the standards set by the OTCEI. In addition, the OTCEI has already adopted the strategic objective of reducing the number of settlement agents to one. We would recommend that the total number of registrars be decreased to a maximum of two. Indeed, in the very long term, depending on the progress of Stock Holding Corporation of India Limited, the OTCEI may wish to take all the clearing, settlement and depository functions in house.

However, in the more immediate term, the OTCEI should aim to minimize the number of participants in the post trading process, thereby increasing the market efficiency. By minimizing the participants, the overall cost and risk in the market place, will be reduced. In the longer term the migration to a G30 environment will be easier; especially in the more controversial areas of the G30 recommendations, where international experience has shown that vested interests have played a significant part in delaying the process. Indeed, the G30 areas we have in mind are those such as delivery versus payment settlement and the creation of a central securities depository.

V. MARKET REGULATION AND ADMINISTRATION

The Team analyzed the market regulation and administrative capabilities of the OTCEI. After reviewing the regulatory environment, it was found that in order to be a functional Self-Regulatory Organization (SRO) the OTCEI needed to have a sound organizational structure in place. Several recommendations for the implementation and design of this structure are included in this report. These recommendations fall into the areas of:

- market surveillance/field inspection,
- disciplinary action hearings, and
- arbitration.

A. Regulatory Environment of India

The regulatory environment in the securities industry in India, to the extent that it exists, does not appear to be very comprehensive or effective.

The Securities and Exchange Board of India (SEBI) does not appear to have had sufficient authority up to this point to initiate a strong regulatory effort. Its capacity to regulate effectively is constrained by its small size. It was reported to the Team that SEBI employed an estimated 75 employees for the entire country, which has 23 stock exchanges and an expanding securities industry.

Manipulation and insider trading appear to be the rule rather than the exception in India. There is no insider trading law or rule, and apparently, there are no exchange rules prohibiting it or other forms of manipulation.

However, SEBI has proposed an Insider Trading rule and published it for public comment the period for which closed on January 15, 1992. Other than the public call by the Indian Minister of Finance for insider trading rules to be adopted, nothing further appears to have been done. Nevertheless, the proposed rule, appears to be a very good first step.

B. Regulatory Structure of OTCEI

Given the poor state of market regulation at the national level, it is impressive to see that the OTCEI has been designed and organized to effect modern principles of a regulated competitive market. In its By-laws, and regulations such as "Code of Conduct for Members and Dealers", and "Business Rules" there are reflected the basic principles that are stated in regulations governing such markets as the NASDAQ, other U.S. exchanges, and SEAQ. The leadership of the OTCEI genuinely seeks to provide a market of integrity for the retail investor. Included in the OTCEI rules, one will find prohibitions against business practices such as "churning", or encouraging customers to purchase inappropriate securities for their economic situation, and an arbitration process that is open to the retail investor. Of course, it must be recognized that it will be difficult for the OTCEI to enforce these rules without a supportive government regulatory framework.

C. OTCEI's Current Self Regulating Capabilities

Regulation of the securities industry in India is undergoing change and, while the term SRO is used in India, the Exchanges do not appear to exist as true self-regulatory organizations. The Over-The-Counter Exchange of India (OTCEI) was created to be a Self Regulatory Organization (SRO). The most important criteria of an SRO are:

- An organizational structure which clearly states each member's responsibility for regulation.
- A rule making process by Members/Experts.
- An aggressive compliance and surveillance system.
- A disciplinary system embodying peer review.

Underlying these important functions is an essential principle of member involvement in every step in the process. Members serve in the various committees that propose rules, approve rules, hear and judge alleged violations of the rules, and decide disciplinary action.

The review of the OTCEI Self Regulatory program confirms the essential soundness of the program, and suggests certain refinements and improvements to enhance its effectiveness. These recommendations are made below.

Before addressing each of the elements of an SRO program, it is important to discuss concerns associated with the leadership role the OTCEI plays in the regulatory regime of the Indian capital market. There is little backing by government at this point for these principles to be applied in the other stock exchanges of the country. One could envisage, therefore, that issuers or intermediaries seeking the most favorable set of regulatory permissiveness would be disinclined to list on the OTCEI. This is a risk, which should be ameliorated as the government of India implements a proper regulatory regime on the other exchanges, and in any event, can be managed to insure that the OTCEI does not get too far out in front of the regulatory bandwagon.

The OTCEI has appointed 30 Members and over 100 Dealers in Bombay, in preparation for start-up. The OTC Committee specifically appoints Members and Dealers. The minimum capital requirements have been established for Members (Rs. 2.5 Crore) and Dealers (Rs. 5 Lakhs) There do not appear to be any established qualifications for membership or admission as a Dealer, other than the requirements that the petitioner have at least five year's experience in the financial services industry. If a firm had less experience, the OTCEI looked to the qualifications of people involved. OTCEI has also had discussions with 140 to 150 companies concerning public offerings and listing on OTCEI with very positive results. Several are ready to go.

It is believed, that in selecting Members., the OTC Committee looked for firms with placement power. Ironically, the firms have not really needed "placement power" in the primary market because of the lottery system. However, if by "placement power" it was meant they have a significant customer base, this could be very beneficial to the secondary market. Two member firms indicated that they had numerous offices with brokers and the ability to generate order flow. This is critical because without strong investor participation it is difficult to see how a viable secondary market can develop. This is an area which must be closely and continuously addressed by OTCEI.

i. OTCEI's Organizational Structure

Essential to the smooth operation of an SRO is an efficient organizational structure. This is especially the case for OTCEI, because it is designed to be nationwide in scope. The current organization plan for OTCEI requires some amendment to adequately provide for a nationwide SRO program.

a. A Focal Point for Compliance

The first step that should be taken is the appointment of a full time executive reporting directly to the Chief Executive, to serve as the Managing Director of Compliance and Enforcement.

b. Regional Representation on Policy Making Boards

Further, to become a fairly and equitably managed and operated self-regulatory organization, the governing structure should be flexible enough to include representation from the various regions of the country, as the market extends into those regions. The OTC Committee should have representatives from each of the regions (as they become active) in which the OTCEI is active, in addition to other people, including possibly one or more representatives of the public.

c. Regional Committees for Enforcement and Discipline

A system of Regional Committees should also be developed for policy and disciplinary determinations. Preparations should start immediately on these actions since OTCEI intends to appoint over 1000 new Members and Dealers in seven cities of India within the next year.

While the Articles of Incorporation provide for the appointment of committees as deemed necessary by the Board from time to time, it is recommended that the By-Laws be amended to provide a specific structure for the whole organization which would include Regional Committees with their specific functions in the organization and in the self-regulatory process clearly defined. These Regional Committees would primarily be **Business Conduct Committees** charged with the responsibility of bringing disciplinary action against miscreants, conducting hearings, making determinations and imposing penalties in respect to violations found. Appendix E depicts the incorporation of the Regional Business Conduct Committees in the OTCEI organization.

The Regional Committees should also, on behalf of the Board, be policy evaluators and initiators concerning business conditions and activities in the local market and, where appropriate, make recommendations to the Board. At least one annual meeting of the various Chairmen of the Regional Committees, sitting as an Advisory Council to the Board, should be held for the purpose of evaluating matters in the securities industry across India and making recommendations to the Board accordingly. Appeals of disciplinary determinations would be from the respective Regional Committees to the Board or to the OTC Committee.

ii. Rule Making

Inherent in the self-regulatory process is the development of appropriate rules to address abuses. All rules should be sanctioned by the governing body (at OTCEI this apparently can be done by the OTC Committee), but their development is best left to committees of experts in the subject area of inquiry, these committees could make pertinent recommendations to the Board or to the OTC Committee which would then evaluate the proposals and, if it agrees, adopt them.

OTCEI's Articles of Incorporation provide for the appointment of committees as deemed necessary by the Board, thus, there appears to be sufficient flexibility in the organizational documents to pursue such a system. These committees could, but unlike the Regional Committees do not have to, be further specified in the organizational plan specified in the By-laws. These Committees could cover such areas as trading, membership, qualifications, and business practices, among others.

As stated, OTCEI has adopted a "Code of Conduct for Members and Dealers", and draft "Business Rules" applicable to its Members and Dealers. The rules are quite comprehensive and are illustrative of the dedication of OTCEI's management to the concept of self-regulation and the protection of investors; however, as experience is developed in the application, attention should continuously be given to their refinement.

iii. Rule Making Observations

a. Greater Specification Needed

These efforts represent significant progress toward achieving the self-regulatory concept. However, further specifics within the Code of Conduct need to be incorporated needed to comply are not.

For example, Item 30 in the Code of Conduct states: "A counter must comply with net worth requirements of OTCEI as may be decided from time to time". A Rs 2.5 Crore net worth requirement for Members, and Rs 5 Lakhs for Dealers, has been stated elsewhere, but the methodology for determining such has not been stated.

Illustrative of the proper approach is the United States Securities Exchange Commissions (SEC) net capital rule pursuant to which methodology for determining the required net capital ratio for United States broker/Dealers is established. For instance this rule takes into consideration, haircuts from market value on inventory to provide for market uncertainty. These haircuts serve to reduce available capital, and with other provisions, assist in ensuring the continued financial viability of the firm by providing hedges for market risk.

In other words, "net worth" needs further definition for regulatory purposes. Financial soundness of Members and Dealers is obviously intended by OTCEI, but more is needed.

Another example of lack of specifics is Item 34 in the Code of Conduct which requires a counter to "follow all the record keeping and regulatory requirements of the OTCEI . . . These may include keeping and preserving books, accounts, records, memoranda and correspondence . . ." However, the precise records which must be kept are not specified, nor is the length of time the records must be preserved specified. Some guidance is contained in "The Securities Contracts (Regulation) Rules 1957" adopted by the government, but specifics in the area should be contained in OTCEI documents which, presumably, will be more readily available to Members and Dealers. Details will perhaps come in time, but these two areas, capital and record keeping, should be immediately addressed.

b. <u>Clarification of Terms</u>

Further, the "Code of Conduct" specifically refers to the "Counter" in each rule. That term is defined at the outset of this "Code" to be the counter operated by a Member or Dealer for the purpose of trading on the OTCEI Exchange. Thus, it appears to refer to the location, or the computer terminal, used for trading. However, throughout the Code the term appears to be used interchangeably with the Member and or Dealer entity.

Also, the definition used here differs from the definition of the same term used in the draft "Business Rules".

The by-laws do not contain a definition of the term and it does not appear to be used in the by-laws, but the "Counter" concept is central to OTCEI's operations and would be better created by the by-laws and defined therein so it will be clear what it means when used in other rules.

As a fundamental matter, there should be uniformity in the use of terms throughout all official documents of the Exchange but this does not appear to be the case. For instance, the term "constituent" is used in Article XI of the by-laws concerning "Rights and Liabilities of Members . . ." but it appears to mean "customer". Customer is also not referenced in the Arbitration Procedure, by-laws Article XII, but we were informed that customer - member arbitration is intended to be covered by Category A thereunder. The word "constituent" is not used in the arbitration Article either. The word "customer" should be used whenever the by-laws or any rules adopted pursuant thereto are intended to mean a customer. At best the terminology should be much clearer than it presently is and should be entirely consistent throughout all documents. Drafting changes can correct most of these problems.

As stated above, in the document entitled "Possible Violations: Members", (which appears to be an analysis of the applicability of the above referenced rules) many of the rules would appear to apply to Dealers as well as Members, but only a few specifically so state. Illustrative is Item 41 which says "Members not carrying out clients instructions and not informing him of the same" violate the by-laws and "Sharing brokerage with other than those mentioned in the by-laws and regulations" does likewise, among others. These rules should be closely reviewed to make sure that it is clear when a rule is intended to apply to Dealers as well as Members. A catch all phrase stating that the term "Member" includes "Dealer" when the context requires should be included. This phraseology is aptly used in the by-laws.

This document also states the penalty which would be imposed in cases of the stated violations. Predetermination of penalties is permitted by the by-laws. However, a certain amount of discretion should be permitted where mitigating or aggravating circumstances exist. Such flexibility should be built into the document and clearly stated. The by-laws permit commutation of penalties imposed, but this would appear to presume that such would occur sometime after the penalty had been imposed and is, therefore, unrelated to mitigation. Also, if commutation is later permitted, the impact of mitigating factors on the penalty should be permitted at the time of imposition thereof.

iv. Compliance and Enforcement

At the core of the self-regulatory process is surveillance to determine compliance with rules that have been developed by industry professionals. This must be done in a serious dedicated way that justifies designation of the organization as a self-regulatory organization.

A senior experienced person should be placed in charge of the entire compliance and surveillance function. He should report directly to the Chief Executive. Staff should be recruited and their training in market surveillance and field examinations begun.

Secondly, The staff and management of OTCEI should immediately begin the design of a compliance effort on at least two fronts:

- A program of field inspections of Members offices

- A market surveillance program similar to "stockwatch" with appropriate adaptations to accommodate the smaller quantity of trading.

a. A Program of Field Inspections of Members/Dealers

We understand that there are plans to implement these programs in the future. We recommend these efforts and urge that they be accelerated, otherwise the soundness of the regulatory program will be brought into doubt. It doesn't make much sense from a regulatory standpoint to have a rule that says a "counter must not recommend excessive trading to a customer with a purpose of generating business or commissions for itself" or ". . . which are not in accordance with (the customers) financial objectives," if no surveillance mechanism exists to periodically test the Members activities to determine adherence to or departure from the prohibitions. Periodic field examinations should be pursued from a predetermined format that assures a uniform review of activities at all Members visited.

Where problems are found, the inspection should be pursued in greater depth. Plans for regional locations and staff for those locations should also be formulated.

b. Market Surveillance Program

Parameters should be built into the design of the system to test for manipulation and instances of insider trading. These concerns are being addressed by the OTCEI staff, but design of the parameters has not yet been defined. This is going to require at least some actual market experience with a group of issues in order that the norms can be defined. Prohibitions against insider trading and price manipulation will be limited to exhortation until specific rules in those areas are adopted and effective detection systems can be put in place. Recommendations for changes to the exising Bye-Laws, Code of Conduct, Draft Business Rules, and List of Possible Violations: Members, as well as the use of Draft Undertaking and Listing Agreement to prohibit insider trading can be found in Appendix B. Please refer to Attachment II, What the OTC Exchange of India Wants to Know, for a copy of the NASD Listing Agreement and further documentation regarding market surveillance.

v. Disciplinary Action

In a Self Regulatory Organization, disciplinary actions should be initiated, hearings conducted, and determinations made by the respondent's peers. These processes should be the province of the Business Conduct Committees referred to in the previous section. The staff of the Compliance Division, either at headquarters or in the region, supports these processes with investigation and documentation of the allegations.

vi. Representation by Counsel

More importantly, when violations are alleged, a hearing is provided for by OTCEI's by-laws but representation by counsel is not permitted as a matter of right; rather, permission of the OTC Committee must be obtained by a respondent to be so represented. Fairness would dictate that the respondent be entitled to counsel as a matter of right and that approach is recommended.

vii. Committees of Members/Dealers

According to the by-laws, a hearing in a case is to be held by the OTC Committee or subcommittee or "before an authorized officer of the Exchange". In keeping with the concept of "self-regulation" we recommend that the hearing not be held by a member of OTCEI staff, but by the respondent's peers sitting as a committee. A better approach would be to create a "Business Conduct Committee" composed of Members and Dealers with the authority to conduct the disciplinary hearings and make findings of violations in connection therewith.

In practice, a subcommittee of three persons would conduct the hearings. The determination of the committee would then be appealable to the OTC Committee or could be called before it for review on its own motion if it is so desired. This would relieve the OTC Committee of the burden of being the initial hearing body in all disciplinary cases. The number of such cases could increase considerably as the number of Members increases and a surveillance staff is put in place. Most cases probably would not be appealed, thus, the burden on the OTC Committee from disciplinary cases would be minimized.

viii. Arbitration

A comprehensive Arbitration program is detailed in Article XII of the By-Laws. There are two categories of proceedings:

A. Arbitration other than between Members
B. Arbitration between Members/Dealers

Category A of the Arbitration Procedures appears to mandate arbitration in connection with a dispute concerning any transaction entered into between a "member" and a "non-member". However, it is unclear whether the term "non-member" includes "customers" though the team was informed that it was so intended. If this is the case, this should be clearly stated in the by-laws. Presently they state that the term "non-member" includes:

> "a remisier, authorized signatory or employee or any other person with whom the member shares brokerage arising out of, or in relation to dealings, transactions and contracts made be subject to the Rules, by-laws and Regulations of the OTC Exchange or with reference with anything incidental thereto or in pursuance thereof or relating to their construction, fulfillment or validity or relating to the rights, obligations and liabilities of remisiers, authorized signatories or any other person with whom the member shares brokerage in relation to such dealings, transactions and contracts . . ."

If it is intended that this language includes customers of Members it should be specifically stated. It is hard to conclude that from the quoted language.

ix. Hearing Procedures

The hearing procedures specified under Category A could also be improved upon. The system specified will prove cumbersome in operation. It calls for a two person panel to determine a case and that each party appoints one of the panelists. The arbitrators so appointed are then given the authority to appoint a member of the OTC Committee as an Umpire at anytime and they are required to do so if they differ as to the award in a case. The OTC Committee, also, is authorized to appoint an Umpire when an award is not timely made, when the arbitrators can not agree on an Umpire or if the Umpire appointed fails to make a timely award or refuses or is incapable of making an award for various reasons. There is no time specified in the by-laws within which an award must be made, (except in connection with extensions of time from that originally set which is specified to be one month from the original date); rather, this time period is to be established by the OTC Committee, presumably as each case comes along. The time period may also be extended by either the OTC Committee or the Chief Executive.

The arbitration selection process should be changed and simplified. If it is felt that a time period needs to be specified within which an award is to be made, it should be spelled out in the by-laws so it will be uniform in each case. If not, the administrative burden of establishing different time periods in each case should be removed from the OTC Committee. Also, the dual responsibility with the Chief Executive as to the granting of the extensions seems cumbersome and overlapping.

A better system for picking arbitrators would be for OTCEI to maintain a pool of available arbitrators from which a three person panel would be selected. The selection process could be administered by staff responsible for the Arbitration program for each case. Peremptory and cause challenges should be given to the parties. The procedures presently prescribed in the by-laws would, undoubtedly, result in an Umpire being appointed in every case. Since it can be assumed that an arbitrator appointed by a party is likely to rule in his favor, the Umpire would, arguably at least, be rendering the decision in every case.

The procedure also specifies that the Umpire shall at the request of any party file the award in court. This is an unnecessary administrative burden placed on the Umpire, notwithstanding that the Secretary of the Corporation is authorized to act on behalf of the arbitrator or Umpire in this respect and to perform other ministerial duties in connection with the arbitration process.

Filing of the award in court should be left to the prevailing party. Further, it is unclear whether the Secretary's ministerial functions apply to both Category A and Category B arbitrations or only to Category A arbitrations, since the authorizing language appears only under that category. Representation by counsel should be a matter of right in all hearings. If, however, the present provision remains, the authority from whom permission is to be granted should be consistent.

In Category B proceedings the concept of an Arbitration Committee comes into being for the first time. It is not mentioned under Category A where the OTC Committee is the authoritative body. Under Category B, the Arbitration Committee has several responsibilities: applications for Arbitration are to be made to the Arbitration Committee, two of its Members hear the case, and if they can't agree, a third member of the Arbitration Committee is appointed as an arbitrator and the three of them rule on the case. This ruling is appealable to the full Arbitration Committee. Its determination is final if the reward is Rs 1000 or less. If more, a dissatisfied party may appeal the ruling to the OTC Committee, whose determination is final. Additionally, the OTC Committee has the authority to extend the time of requisite periods throughout the process, rather than the Arbitration Committee.

The system is cumbersome and conflicting. It is generally accepted in many countries, including the United States, that the concept of Arbitration involves a final determination by the Arbitration Panel that is hearing the case, except in rare instances where bias, fraud etc. on the part of the Arbitrators is shown. Those appeals are to a Court of law. If, however, an internal appeal is to be provided under the OTCEI system, it should be limited to one, rather than two appeals. Preferably the initial panel's determination should be final. Further, the initial panel should have three members as discussed above, rather than following the cumbersome procedure of calling in a third Arbitrator if the first two can't agree.

As a general matter, the OTC Committee should be taken out of the whole arbitration process. As to procedures, policies and administration, the Arbitration Committee should be the overseer of the entire Arbitration function. New rules should be by recommendation to the OTC Committee and approved by it or by the Board. As to hearings on complaints, the Arbitration panel first appointed should be the final arbiter subject to any requirements spelled out in Indian arbitration law, and the award should then be filed in court by the prevailing party. Internal appeals are not necessary and it is unclear why the procedure should differ as between member and non member arbitration, as it currently does. The preferable approach would be that they be substantially similar in each case.

The hierarchy of the Exchange should not be part of the decisional processes in arbitration disputes. The arbitrators are the adjudicatory body. Arbitration is a judicial process which should be separate from the forum. OTCEI operates as an administrator, similar to the Clerk of a Court. The adjudicatory function should not be mixed with the policy makers or the administrators of the forum administering the system.

VI. AUTOMATED SYSTEMS AND TECHNOLOGY

The Team found that the current level of automation and technology are not sufficient to conduct business through the first year of business at the OTCEI. Several detailed recommendations for the upgrading of the current automated systems and operating software and hardware are presented in this chapter.

A. Requirements of the Systems Platform

The systems architecture will significantly impact the OTCEI's ability to implement an efficient operation and subsequently reach its full potential. An analysis of the necessary features of the systems platform was conducted based on the overall objective to be realized:

> to provide a platform to allow fully automated trading to take place across a screen based trading system. The solution needs to be comprehensive and implemented at a minimum cost, with minimal risk during the development and implementation periods.

To achieve this objective, specific goals need to be established. Including:

- ultimately enabling a single marketplace for small and medium sized companies and support trading across the Indian Sub-Continent,
- permitting equal access to the pricing and market information by means of a dissemination system which will provide for a transparent market,
- providing support for the surveillance and market watch requirements,
- providing a base for the, as yet undefined, enhancements.

A systems platform that supports all aspects of trading, risk management and surveillance is essential to the success of the OTCEI. The systems platform must support the needs of companies which are not able to list on the main floor based exchanges and ultimately a range of firms which may be traded when cross listing is permitted. Moreover, the platform must add strength to the domestic market by encouraging retail investors to participate in the equity marketplace.

B. Systems Architecture

The Team's detailed findings and recommendations relating to the systems architecture are outlined below, based on the projected trading volumes, transactional requirements, and the high level systems appraisal.

i. Trading Volume

The review of the trading volume and the data that will be required indicates that the systems architecture and its sizing will not support the projected business volumes by the end of the first year of trading.

From discussions with the Computer Management Corporation (CMC) personnel it is understood that the system was originally sized using the following figures:

Dealers	250
Listed companies	250
Investors	1.5 Million
Deals per Day	10,000
Market Makers per script	5
Quotes per hour	2,000

Since these estimates were carried out, three important changes have been made to the system:

- All data of the share register will now be held on the system
- Full data relating to the brokers and counters will now be held

Using these project business volumes for the end of the first year, a number of estimates relating to the data and transaction requirements of the system have been made. These estimates, presented in Appendix C, suggest that the computer system will:

- Support 130 Dealers, 50 companies, 10,000 investors
- See each stock bought and sold three times per year
- Need five quotes to be made for each concluded deal

The system will need to handle:

- 3,409 deals per day
- 8,523 quotes per hour
- 76 megabytes of data
- A broadcast feed at 2,273 bits per second
- A market maker communications link at 63 bits per second
- A business transaction rate of 3 transactions per second

Furthermore, the data to be sent from the market dissemination system is 7 times more than the capacity of the 300 Bit per second PTI line capacity. Therefore it will be impossible for the brokers and market makers to receive all of the quote/deal information over the system as it is currently planned. If this volume of information is to be transmitted to the broker/market maker community in real time, it will be necessary to have a much greater transmission bandwidth available.

If only a subset of the data is transmitted, as will be the case with the PTI stockscan system, the market price transparency will be lost. Consequently, participants will not be able to see the market depth in real time and will have to use the trading system to inquire about a stock's depth. This will achieve the end result; but it will also mean that the central OTCEI system will be overburdened by a high volume of price quote inquiries in addition to the normal quote entry and trade capture functions.

The vax 4000-200 can handle approximately 13 transactions per second. If it is assumed that a normal application will require 10 machine transactions for each business transaction, this implies that vax 4000-200 can handle approximately one third of the required capacity. Since each application is different, it is difficult to be more precise without conducting a full system sizing. Such a sizing would take into account not only machine transaction but also file inputs/outputs.

Both findings give rise to two specific recommendations:

1. The OTCEI should conduct a detailed investigation into alternative broadcast systems. The cost of providing such a system will initially be higher than the PTI system, but it is felt that this is the only way for the Exchange to be able to handle the volume of quotes in the short to medium term. This investigation should consider the following technologies:

   - The television broadcasting system to send data across a Teletext system or the use of a separate television broadcast channel

   - The use of leased lines to all "active" brokers and market makers for both price broadcast and trading

   - The use of VHF radio to transmit price quote information in a digital format to all system users

   - The use of a satellite broadcast system to disseminate price feed information

The cost and viability of each of the technologies should be determined and a recommendation made as to the most appropriate technology and approach.

2. The OTCEI should also conduct a detailed system sizing exercise before the system is implemented. This, in conjunction with the practical data obtained from the benchmarking tests, will provide invaluable capacity planning data and will also enable the OTCEI to understand their system related costs per trade.

   For future phases of the project, the Exchange should require the system sizing information to be made available before commencing the work or signing any contract. This will help to ensure that the requirements for systems upgrades are understood prior to system developments.

ii. Telecommunications Limitations

In order for the OTCEI to operate efficiently, the system requires an adequate telecommunications network. The current telecommunications network in India contains the following constraints:

- Leased lines are typically very expensive and are not widely used. The Department of Telecommunications (DOT) have publicly stated that leased lines will not be offered once the I-NET X.25/Packet switching technology is available.

- Dial-up modems can be used at speeds up to 2400 Bps with only relative ease.

- The I-NET X.25/Packet switching technology is not yet widely available and is likely to be subjected to a demand in excess of availability in the near term.

- Satellite communications for broadcast applications is not widely available. PTI are believed to be the only commercial user of a one way broadcast system with a bandwidth of 10 Kbps. As far as the Team could determine, India has no earth station that would enable "hubbing" of data traffic from VSAT equipment. Furthermore the availability of transponder space is very limited.

- Mobile/cellular phone technology will not be available until the end of 1992. At this time it is believed that the system will be very expensive to use.

- The use of VHF radios to communicate between the market participants and the OTC antenna in each region/town may be possible, but this will require the allocation of bandwidth to the OTC by the DOT.

Currently, there are two viable forms of communications available in the near term (0-6 months):

- use of the PTI low speed leased line network for price broadcast information.
- dial-up modems

a. PTI Network

In the short term the Exchange has correctly identified the PTI network as the only mechanism available for the dissemination of market information and news.

However, the PTI network operating at 300 Bps will be a constraint to the market requirement for price transparency. The projected quote and matched trade data volumes are such that a dedicated equivalent to 2400 Bps will be required to transmit all of the information to the brokers and market makers. This data rate is in excess of the capacity required to conduct the quote entry and trade reporting.

Therefore, because the line capacity will not permit the real time display of quote information, brokers and market makers will have to inquire about the best bid/offer information using the trading system. This is a satisfactory approach; but it will mean that the trading system will spend a large proportion of its time providing quotes to brokers, rather than matching trades and validating script details.

b. Dial-up modems

The Exchange should continue with its plans to use the dial-up network for the purposes of attaching the Broker/Market Makers to the OTCEI system in the short term.

The dial-up modems will be a considerable point of frustration. Typically, lines become either disconnected for no apparent reason or the call setup and disconnect times become a significant part of the overall processing time.

In the system as it is currently configured, call set-up and call disconnect account for two thirds of the system response time (i.e two thirds of one second out of the trade matching time of one second). If it is considered that the call setup time might be one minute per connection and that the average hold time per market maker callup will be 2 minutes it can be seen that there is insufficient time to process all of the workload during the trading day. This estimate also ignores the requirement to send the CR/SCS print images.

In detail, it is estimated that a market maker will require 19 hours of "modem" time to enter his quotes, and that a broker will require 9 hours to enter his deals. Clearly this will not fit into a 2 hour trading day These figures ignore the fact that the system will almost certainly experience queuing and call failure.

The Exchange should conduct a detailed investigation into the telecommunications alternatives for both price broadcast and market trading. Such an exercise would look at the traffic flows and communication costs and availability of each of the technologies listed above. It would then be possible to recommend a networking strategy that would probably involve a mixed network containing a number of telecommunications technologies. However, it is recommended that the Exchange plan to address all market makers and the most active brokers in the system, by means of a leased line.

iii. Dissemination of Quote and Trade Information

The information to be disseminated by the Exchange is probably one of the Exchange's most valuable commodities. The Exchange should retain effective control over reviewing the information that will ultimately be released.

The Team recommends that the Exchange not use the DOT's I-NET service for the price dissemination service, as the data volumes that will ultimately be transmitted will involve very high I-NET usage charges for the end users of the system.

The Press Trust of India's (PTI) stockscan system has a low level of functionality and flexibility and will not provide a transparent price feed mechanism in its present form. The Exchange, like the PTI users, will probably have to pay the Press Trust of India to disseminate their quote and trade information.

As stated above, the Exchange should establish a subsidiary company to provide all of the price and trade dissemination. The lack of domestic competition in this sector offers the Exchange a valuable market opportunity. The Exchange should consider establishing its own operation organically or establishing a joint venture with a foreign information vendor in this market segment.

Furthermore, the Exchange should offer a new revenue porducing service which disseminates the price, trade and volume information to subscribers and other vendors for a fee. This information is a valuable asset for whicch theree is a demand in the marketplace. OTCEI should enjoy the revenues from this activity.

iv. Systems Integration

The system designers were faced with designing the system and integrating all of the functions normally found on separate subsystems into one processing complex. The business rules of the Exchange and the marketplace dictate that each of these systems operate in "real-time on-line mode" and support the trading volumes that are projected for the first full year of trading.

The manner in which the system has been constructed will not be able to handle the volume of transactions placed upon it with all of the exchange based systems being co-located on one processing system. This arises from both the volume of transaction to be processed and the manner in which the modules are coupied together.

Information gained through interviews with Computer Management Corporation personnel and the OTCEI staff suggests that the system design is sufficiently modular as to enable these five processing functional elements to be split into separate processors should performance reasons dictate that this is necessary. The Team was not able to validate this information, but found it encouraging.

It is recommended that the system architecture be distributed across multiple processors to accommodate the projected volumes at the end of the first year and ensure that the response times remain within an acceptable level.

v. Billing

The system architecture currently makes no provision for billing and cost recovery of the exchange based services.

The Exchange should determine how it will set the tariffs for its services. Such an analysis will also help to determine the most appropriate technology architecture and system size. At this stage the charges should have a high degree of usage related content to cover the central system costs and a fixed plus transactional tariff to cover the telecommunications costs.

In addition, the Exchange should develop an automated billing module to supplement the five functional processes already defined and implemented.

vi. <u>Fallback Site</u>

In most computer operations it is normal to have three machine configurations

- A production system
- A small development/test system
- A fallback configuration

The OTCEI's short-term technology plans project that the first two will be co-located on the live system, while the fallback system has not been specified nor ordered.

In any business it is encouraging to see that financial prudence with regard to capital spending has been observed. However it is worth noting that while the production machine could be used for additional software development work outside of the trading hours; this policy typically causes problems if the live data should become destroyed or contaminated by the ongoing development work.

Therefore it is recommended that the OTCEI purchase a fallback machine and that this be used for all development and test work post live date for the Exchange.

The OTCEI business will be critically dependent on the availability of the computer and communication systems at the Exchange. Normally arrangements for a fallback site are made when systems must demonstrate a high degree of availability. It is strongly recommended that the OTCEI make the necessary arrangements to implement a fallback site before the system is fully operational, or shortly thereafter.

vii. Financial Planning Modelling

Finally, the review of the materials produced and the contents of the detailed discussions held with the Exchange suggests that a full financial planning model may not have been developed.

In part, the need for such a business plan has been seen as a low priority, because the financial backers of the Exchange have stated that they are not looking for a financial return in the near term. However, from a systems planning viewpoint, the lack of detailed business volumes and estimates has caused difficulty in determining the most appropriate system architecture and its dimensions for all but the initial trading period during which the trading volumes will be low.

The Exchange should develop a full business plan with an emphasis on the definition of the financial targets. This will help to establish the operation and financial constraints for the systems and technology environment over the next two to three years. Additionally, it will create performance targets that the systems architecture will have to meet.

C. Assessment of Current System Functionality

In reviewing the system, a functionality matrix was used. The detailed functionality support provided by the OTCEI system is presented in Appendix B. The assessment of the system is as follows:

The system is able to perform approximately 75% of the functionality that would typically be expected of it. (See Appendix D for an analysis of the Systems Functionality) By considering the areas where the functionality is not currently present specific recommendations can be made. These include:

1. The enhancement of the system's ability to support "Limit Orders" would be considerably useful in reducing the number of inquiries that brokers and market makers would have to make in order to find the best bid and offer. This, in turn, may mean that the size of the hardware configuration could be reduced. It will also reduce the number of dial-up inquiries for quote information.

2. The ability of the system to record off-market trades is not currently provided within the system. In the short term it is believed that this is neither a constraint nor necessary, unless the OTC wishes to act as an information vendor which consolidates information from multiple exchanges.

3. The support for full market news functionality is currently not as comprehensive as will be required to provide the marketplace with its full information needs. However, it is believed that the lack of this functionality is not a priority item and should be included in phase two of the development project.

4. Although the system itself will support quote display, the assessment has been shown as a "no" because the medium of distribution currently planned will not have the bandwidth to support the volume of quotes supplied at the end of the first year of trading.

5. The implementation of an effective price dissemination medium should be considered as a priority item and be resolved before the system goes live.

6. The ability to provide a market index is not present within the system design. Yet the publication of an index to stimulate liquidity should be included before the system becomes operational.

7. The ability to provide the investment community with information relating to the conclusion of a large bargain is also an important requirement for stimulating market liquidity. This should be provided before the system is operational.

D. High Level Review

In reviewing the system design, five generic categories were considered. These include:

- Flexibility
- Scalability
- Reliability
- Connectivity
- Operability

i. Flexibility

Within a system design it should be possible to consolidate or distribute system processes across multiple platforms and/or processing complexes. The current system design is believed to be sufficiently modular as to permit the five functional elements (the trading engine, registration system, price dissemination system, communications system and the market controller) to be distributed across multiple processors or a distributed network.

Furthermore, because all of the application code has been written in the "C" language it is conceivable that by recompiling the code and transferring the database modules, the system could potentially operate on a different vendor's hardware processing platform.

In terms of minimizing the initial capital investment, while maintaining sufficient flexibility to accommodate growth the system design appears to fulfil most of the requirements of the OTCEI for flexibility.

ii. Scalability

The most desirable scalability feature is the ability to add extra processing power to the system in direct proportion to the number of transactions being conducted (i.e. X transactions need 1 processor whilst 2 * X transactions need 2 processors). The Team was unable to ascertain whether the current system design had this capability. In order to confirm this design parameter it will be necessary to conduct a full computer benchmark test.

However from the preliminary assessment of the system design, it is believed that, within the existing system configuration, the application is unlikely to be linearly flexible; because of the high probability that queuing will occur in either the communications, trading engine, market control or registration systems. However if the application were split into the five functional elements it is believed that a more linear scalable system could be realized.

iii. Reliability

The requirement for reliability is to have a system that will remain operational in the event of a hardware failure and that possesses fault and bug free software.

A preliminary review of the system design and its implementation indicates that there is no hardware duplication or redundancy. Therefore it is believed that any hardware faults would cause a system outage. With respect to software it is impossible to assess the inherent reliability of the application code, as the system is still under development.

iv. Connectivity

The requirement for connectivity dictates that the system design enable both local and remote users to gain access to the system. It would permit data exchange between the OTC and its external information providers and disseminators.

Recognizing the constraints of the telecommunication services that exist in India, it is believed that the system design should permit the adoption of enhanced connectivity. This could be achieved by splitting the functional building blocks of the system into separate processors either in a Digital Vax cluster or across a telecommunications facility.

v. **Operability**

An inherent requirement in the design of any system is the ability to operate the system without a programming or very detailed systems background. The housekeeping and operational duties should be capable of being performed by administrative personnel.

At the time of the reviews, it was difficult to confirm whether this requirement would be fulfilled by the code. However, it is believed that this is very much part of the design objective for the system.

E. **Summary of Recommendations**

The Team believes that the system configuration adopted by the OTCEI will not meet the business volumes projected for the end of the first year of trading because:

- The price dissemination will only provide one seventh of the required bandwidth.
- The vax configuration will be at least one third of the capacity required.

Therefore the OTCEI should conduct a thorough review of the broadcast technologies available and a full systems sizing exercise to determine the true system requirements.

Secondly, the OTCEI should recognize that the dial-up modems will not cope with the traffic projections for active system users. The OTCEI should undertake a detailed study of the telecoms options available to the brokers and market makers. With the price and quote information that will be available from the Exchange, the Team believes that the OTCEI has one valuable commodity that could be more fully exploited, the formation of a vending company or enter into a joint venture with a foreign vendor.

The Team recommends that, in order to handle the trading volumes, the Exchange acquire a multi-processor complex to run its systems. In addition, the Exchange should develop a billing and administrative module to ensure that the revenues from systems usage can be collected.

Most importantly, the Exchange should develop a financial plan, incorporating the systems and technology development plan into the business plan of the Exchange in order to control the overall development of the Exchange.

VII. HUMAN RESOURCES AND TRAINING

This Section addresses the human resources needs and the training requirements of the OTCEI staff members. Recommendations for change were made after a review of similar programs at other organizations such as the SEC, NASD, NASDAQ, and the SEC. In the area of training, recommendations were made regarding the OTCEI staff and the Members and Dealers of the OTCEI

A. Training Objective

The purpose of the training is to provide OTCEI staff and Members and Dealers with the skills required to manage and regulate a world-class OTC market within the prescribed time frame of two years. The training performed for the OTCEI should enable the OTC Staff and Members and Dealers to engage actively in and support the Over the Counter Market operations on the basis of internationally accepted standards and practices. Appendix F contains a Matrix of Skills Required by the OTCEI Staff by position.

Training recommendations are based on survey results of training requirements identified in existing organizations. Organizations researched include NASD, and the SEC.

B. Training Groups

It is recommended that the training provided address the skill requirements of the following target groups:

- OTC Staff
- Members and Dealers

Due to the relatively small OTCEI training population, particularly in the start-up phase, many targeted populations will be comprised of few personnel. The size of these target groups is an important factor in determining course delivery sources. Overall effectiveness and economies of scale must be considered when determining whether or not a course should be custom developed or if outside general enrollment courses, such as those offered through organizations like the New York Institute of Finance, NASD, or the UTI Institute of Capital Markets, should be used.

i. OTCEI Staff

The table contained in Attachment I contains a recommended curriculum for OTCEI personnel by functional responsibilities. In effect this plan represents a strategy for training all levels of staff at the OTCEI.

The Team believes that the already qualified OTC Staff should take advantage of the opportunities available to enhance their understanding of organized securities. There are training courses available in the United States, such as those held by the New York Institute of Finance, that offer workshops targeted to the Over the Counter Market.

Training Opportunities are as follows:

- Staff can participate in training in the U.S. and the U.K. It would be very beneficial for the OTC staff to visit NASD to increase knowledge in the area of compliance.
- Staff would benefit from meeting with the Members and Dealers of NASDAQ to familiarize themselves with various methods of market making.
- Visits to other Stock Exchanges such as Singapore, Hong Kong, SEAQ, and NASDAQ.

ii. Members and Dealers

We also recommend specific training for the executive levels of the Members and Dealers in underwriting strategies and techniques. Such courses can be organized within India using external consultants, or in the U.S. at such institutions as the New York Institute of Finance. The external training could be organized by the OTCEI, but the costs for funded by these firms - as it is an investment in thier business.

Training for the Broker level of the Member/Dealer could be through the use of study guides and electronic testing procedures used by the New York Institute of Finance and the NASD. NASD has broker and surveillance training "cells" that could serve as an excellent model upon which to develop training for OTCEI.

C. NASD Training Methods

OTCEI could adopt a training program similar to that utilized by the NASD where newly hired staff, including examiners, participate in an extensive series of structured training programs. Courses are administered by the Training Department and taught by internal and external experts. The training is competency-based and passing grades on examinations are required to achieve certification.

The following is an example of the types of training available for examiners who enter the NASD organization.

i. Practical Application Training

The objective of this program is to familiarize Trainees with the fundamentals of brokerage accounting and operations, net capital and customer protection. The orientation follows a prescribed check list of activities and is managed by the Field Supervisor. The check list consists of a series of structured activities and self-study reading assignments. Staff may not participate in Phase I classroom training unless they have completed the practical application. See Section IV. of the Attachment.

Phase I

Three weeks of formalized classroom instruction in Washington, D.C. under the direction of the Manager of Staff Training: A full outline of this course can be found in Attachment I.

Pre-Phase II

A period of three to six months between Phase I and Phase II: During this time the employee receives specific on-the-job training and completes selected self-study course work. The responsibility for this stage of the training program belongs to District management. The program follows standardized program guidelines established by NASD's Washington office.

Phase II

Three weeks of extensive classroom instruction in Washington, D.C.: The course work is directed by the Manager of Staff Training. A full outline of this course material can be found in Attachment I, Section I.

The following five position descriptions, found in Section II of Attachment I, outline the roles and responsibilities of the job categories for examiners:

Associate Examiner
Compliance Examiner
Senior Compliance Examiner
Compliance Specialist
Field Supervisor

These descriptions outline the progressive skill development required to advance in level of responsibility. They should be used as a guideline for helping to define the roles and responsibilities of the OTCEI Examiners.

ii. Supervisory and Management Training Courses

In addition to the technical training outlined above, NASD offers a wide, standardized curriculum of supervisory and management training courses. The courses are a mixture of in-house workshops and open enrollments from outside vendors. For the most part, enrollments in these courses are needs-based. Individual participation is based on the development needs of the individual staff person. Supplemental seminars in specialty areas, such as Detection of Abusive Sales and Trading Practices as outlined in Section III of Attachment I, are also offered. The applicability of these programs to the needs of OTCEI could be determined after a comparative review of products . disclosure requirements.

D. Training Courses and Materials

Attachment I contains the following catalogs outlining opportunities for training:

- New York Institute of Finance Winter Catalog
- Seminar for International Financial Professionals
- U.S. Money & Capital Markets Seminar from the New York Institute of Finance contains courses appropriate for OTCEI personnel of all levels.

The New York Institute of Finance offers a wide listing of pertinent publications. Section IV of Attachment I contains Publications for Investment Professionals (1992) and the National Association of Securities Dealers listing of publications.

OVER THE COUNTER (OTC) EXCHANGE OF INDIA

(SCOPE OF WORK)

BACKGROUND:

OTC Exchange of India (OTCEI) was set up in 1990 as the country's first electronic stock exchange to operate on a nationwide network. Promoted by India's largest mutual fund - Unit Trust of India and other leading financial institutions, OTCEI is mandated to operate a ringless, automated, screen based national market. The authorized capital of OTCEI is Rs.100 million.

The purpose of OTCEI is to eventually reach a wide number of investors throughout the country; provide solutions to India's existing problems of settlement delays, price blindness, and other inefficiencies in transfer procedures faced by investors. Thus OTC will provide an avenue for the small to medium signed companies and venture capitalists to raise capital in a cost effective and fair manner. (The attached photocopy of a recent newspaper article on the OTC provides additional background information on the OTCEI.

MARKET OPERATIONS:

As an initial step in the development of this critical capital market, OTCEI has determined that it needs to develop broad but detailed operational guidelines and a regulatory framework for its market operations. Assistance from outside experts is needed particularly in this area to ensure complementarity with international norms and stock market systems.

OTC plans to begin actual market operations in 1992. So far it has appointed 30 members and 101 dealers - mainly in Bombay. In a major expansion move, it plans to appoint 3000 additional dealers in 1992. In its efforts to operationalize the trading system, OTCEI has acquired computer DEC hardware, and customized computer software is being developed by a leading Indian software company.

OTC members, mostly financial institutions, will assume the responsibility for sponsoring a issue. It is proposed that the member will perform a series of actions including appraisal of projects, valuation, issue management and compulsory market making for at least three years - i.e offer two way price quotes, trading and broking. Members will manage the issue, obtain the required government clearances, distribute scrips and may publicise the issue. Dealers will be allowed to register as market makers, and will perform trading and brokerage functions.

NORMS FOR LISTING:

OTCEI has prescribed norms for listing of shares. Companies with a capital base ranging between Rs.3 million to Rs.100 million can be listed on the exchange. Other requirements are a minimum issue of Rs.2 million or 40% of the capital up to Rs.30 million or 60% of the capital above Rs.30 million. OTCEI does not allow listing to investment, leasing, finance and amusement companies.

As of date, the primary price of the issue is determined by the Ministry of Finance agency, i.e. Controller of Capital Issues although this may change as a result of GOI financial sector reforms.

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ROLE OF OTCEI:

OTCEI will continuously monitor trading, disseminate information, introduce innovations in trading and financial instruments. Continuous monitoring will emphasize by OTCEI to ensure that there is price continuity, depth in the market and fair margins between buy and sell. In short it proposes to operate as a 'self regulatory organization' and at this point it requires assistance from experts in operating and regulating such a system.

OTC proposes to create an infrastructure that will be versatile enough to also handle money market instruments like Certificates of Deposits and Commercial paper at a later date.

TECHNOLOGY AND SYSTEMS:

OTCEI plans to set up an electronic trading system which will allow communication between two counters, display prices quoted by market makers, a network which will connect databases containing share ownership registry to enable verification of investor/deal, a network with selected banks which will enable direct crediting/debiting of sale/purchase proceeds and importantly a tracking system which will monitor all prices and volume movements and traders performance.

NEED FOR TECHNICAL ASSISTANCE:

OTCEI has defined an initial framework for trading mechanism, and rules regarding market making. To enable it to completely design and operationalize the system envisaged above, however, it will require expert technical consultant assistance and training in the following three broad areas:

I. Market Operations:
- -- Trading Mechanism
- -- Pricing of Issues
- -- Settlements
- -- Investment Analysis

II. Market Administration:
- -- Market Operation and Surveillance
- -- Market Intervention
- -- Detection of Default/insider trading

III. Communications Systems and Technology:
- -- Hardware/Software Configuration of System including Technical Specifications
- -- Information Processing
- -- Electronic Networking
- -- Telecommunication System
- -- System Protection and Security
- -- System for Market Surveillance and Orderly Maintenance

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OTCEI requires three short term technical consultants. At least one expert should have a strong background in information systems technology so that he/she can quickly and accurately determine the status of OTCEI's current information systems and design a system for the future including detailed recommendations regarding the hardware and software components of OTCEI eventual nationwide system.

The three short-term technical consultants will at the completion of this technical assistance submit five copies of a report to the AID F.S.D.P. Project Officer. This report will provide consultant initial responses to the following list of issues and questions:

TRAINING, SEMINARS AND INFORMATION DATA AVAILABILITY

1. Provide a listing of the existing and potential courses, seminars, workshops, etc. available in the U.S.-both academic and practical/ hands-on training related to OTC exchange.
2. Is there an in-house training cell at NASDAQ appropriate for OTCEI?
3. What U.S. training programs, workshops/seminars, etc. are available at present and appropriate for OTCEI operators?
4. Outline a program of training courses which would be appropriate to OTCEI needs over the course of the next two years.
5. What are the NASDAQ/SEC/NYSE AMEX publications, periodicals, reports newsletters, data BASQS etc. of value and relevance to the OTCEI? Describe the nature of the information in these data sources and whether dissemination of information is possible.
6. Describe appropriate U.S. services oriented toward education guidance and protection of members of the OTC exchange as well as authorized analysts.
7. Describe the authorized services made available to investors by (a) NASDAQ and (b) by other agencies.

INTERNAL CODES OF CONDUCT

PERSONNEL

1. What are laws/codes of conduct and ethics, etc. for employees trading on the NASDAQ exchange? Other internal/inhouse regulations?
2. What systems are used by NASDAQ to (a) monitor possible insider trading and regulatory measures, and (b) regulate personnel policies and assigned jobs.

COMPANY

1. What are the disclosure requirements of NASDAQ and SEC?
2. How are NASDAQ's disclosure requirements different from those of other exchanges?
3. What are the guidelines for entry to NASDAQ and other exchanges?
4. What is the expected shareholding pattern?
5. Are there any stipulations regarding promoter's shareholding?
6. What are continuing requirements of listing on NASDAQ and other exchanges?
7. Are there any advertisement norms for companies seeking listing?
8. What are the reporting requirements for companies to the exchange.

9. What deviations are generally made by companies and what exceptions are allowed?
10. Are there any accounting standards prescribed by SEC or NASDAQ?
11. Are there any obligations on companies for specific disclosures for investors knowledge in addition to all statutory obligations?

PRICING

1. What are the different methods allowed/used for pricing of primary issue/offer for sale/secondary market trades?
2. What are the different pricing models, correlated to different situations?
3. In what way are different instruments priced?
4. Which agencies are involved in determining the price?
5. What role does the NASDAQ exchange play in pricing of issue?
6. Is there any relation between prices of different instruments of same company? How is this different explained?
7. How does SEC monitor the prices? If it monitors, at what stage does it step in?

ISSUES - LAWS AND PRACTICES

1. What are NASDAQ's and other exchanges different methods of public offer?
2. What are the procedures/formalities involved in public offers?
3. What are the steps involved in seeking listings on an exchange?
4. What are the prerequisites specified by different exchanges for listing any company?
5. What are pre-issue and post-issue responsibilities of various agencies involved in issue by a company?
6. What is the process of allotment and refund?
7. How does the exchange fix and monitor the norms to ensure fairness in allotments?
8. What is the average time required to complete issue and allotment?
9. What is the role of merchant bankers in issuance?
10. What is the average issue cost?
11. What compliances are required on the part of the companies, both pre and post issue?

INVESTORS

1. Under various acts, regulations of the exchanges and of any other agencies, what protections are given to investors in the case of: (a) transfer delays; (b) refund loss; (c) rights loss; (d) allotment letter loss; (e) consolidation, subdivision; (f) interest, dividend payment loss; etc.
2. How are the complaints attended to? How are problems sorted out and claims settled?
3. Are there separate grievance cells, arbitration mechanisms, etc. available?
4. How does the SEC give cover to investors, in case of any misrepresentation by company/issuer?

SECURITIES

1. What are the different instruments, issue mechanisms and trading methods of these instruments?
2. What are the qualifications/standards/basis for the classification and registration requirements for different instruments?
3. What are the qualifications/standards/basis for the classification and registration requirements for NASDAQ's international list and NASDAQ's national market securities?

TECHNOLOGY AND INFORMATION DISSEMINATION:

1. What is the access time and the response time of the NASDAQ system under: (a) peak load conditions, (b) average conditions, and (c) no-load conditions?
2. What is the peak load volume / no. of users
   What is the average volume / no. of transactions
   What is the no load volume / extent of time usage.
3. What are the hardware and software system configurations and the general technical specifications? In case different modules operate under different environments, what are the specifics of these modules and environments?
4. Do performance parameters depend on: (a) no. of users logged on; (b) no. of users actively using the system; (c) volume of data being transmitted/accessed; (d) volume of transactions; (e) extent of use and type (i.e. query, deal, report, etc.)
5. How is he software and hardware integrated with the communications system and what are the technical features of the communications interface?
6. What is the extent of the network? Is there a select user group of NASDAQ members and/or can they interact with other outsiders?
7. What are the various automated services available? What is the nature and how are they being conducted?
8. What are other networks which a user of the NASDAQ network can access?
9. How does the Electronic Bulletin Board services operate with respect to quotation display, indication of interest by market makers?
10. What are the international linkages of NASDAQ with other automated markets like SEAQ, [illegible], etc.?
11. What is the extent and nature of data stored in active memory which may be accessed without a need for retrieval of archieved data?
12. What are the modes of naticnwide networking and what are the equipments, circuits, etc.?
13. What are the advantages and disadvantages of different modes of networking and related equipment?
14. Is upgrading hardware and software possible? (e.g. - more terminals, faster response, etc.)
15. Surveillance - is it any equipment specific?
16. What happens if different computer makes are intograted - advantages, disadvantages?
17. Is the software design different for trading of different instruments?
18. What are the security aspects of the system that have to be taken into consideration - intrusion/illegal use etc.?

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19. Are the standards recommended (by G-30, FIBV, etc.) observed and to what extent?
20. Is the user's end software uniform to all users? If not, is it audited and certified as fit to be used on the system of the network?
21. What are different virus control measures?

MARKET - METHODS OF OPERATION AND MONITORING

1. How is the fiscal worthiness of a member monitored: (a) Net Business Exposure, (b) Transaction limit, (c) Number of companies, etc.?
2. What qualitative criteria are adopted in evaluation of the listing application?
3. When are listing applications rejected?
4. How is trading halted if any news is disseminated?
5. How are orders matched and how does the small order execution system work?
6. How does the limit order/stop loss instructions systems work?
7. Is surveillance done on-line? If not, when and how?
8. What are the methods of selecting members - criteria?
9. How is inventory monitoring done?
10. How is price monitoring done?
11. How is volume monitoring done?
12. How is counter's monitoring done?
13. How is performance index evaluated and measured?
14. What are the price limits - spread: (a) opening-closing difference, (b) successive quotes.
15. What are the methods of settlement?
16. How does the quotation system operate/ (time entered, depth of stock, price, etc.)
17. How is the price justified by the market maker?
18. How do two counters interact?
19. How is prelisting trade carried out?
20. How is sponsorship is defined? (i.e. role and functions of sponsor)
21. What is expected of Market-making? (i.e., compulsory, voluntary, minimum/maximum periods, etc.)
22. Can market-making be delegated (i.e., only function and/or the responsibility?)
23. What are the different types of agreement between market constituents? (e.g. (a) Agreements with company, (b) Agreements with member, (c) Agreements with depository/registrar, (d) etc.)
24. What are the infrastructure requirements for maintaining counters in a particular way?
25. What are the different fees payable by a company? a member? an investor?
26. What is the actual trading mechanism - movement of documents?
27. How does the NASDAQ market react to selling pressure? buying pressure? panic situations?
28. Is modification in monitoring the system/method made quite often?
29. How does NASDAQ, SEC trace manipulation by players?
30. Are there any surprise checks?

31. What are the signs of problems that occur generally in market (e.g., unexplained change in price or volume; deviation from trend; lopsided index; others?)
32. How is the tend/pattern set and how does one identify the break from trend?
33. How is the action point decided to initiate any investigations?
34. What are the different steps to control the market and in what circumstances are they useful?
35. Are there any set models/methods of surveillance?
36. How are restrictions imposed and when?
37. What is the allowable deviation and how it is determined?
38. Explanation of the jargon used in NASDAQ trading (e.g., "front running"; "up-tick"; "circuit breaker") others.
39. What are the awards for performance, if any?
40. What are the implications of being recognized investment exchange of the British Government/Any other foreign government?

REGULATORY MEASURES, PENALTIES

1. What are the various types of committees for the purpose of (a) market control; (b) investor protection; (c) funds management; (d) arbitration?
2. What is the nature of the Self-Regulatory Organization (SRO) and how do they operate?
3. What are the different kinds of penalties? What are the different conditions when these penalties may be imposed?
4. What are the mechanisms used to detect defaults, insider trading or any deviation from normal practice?
5. Who initiates action and what actions are taken against the defaulters?
6. What are the circumstances and criteria for a company to become delisted?
7. How does the SEC view insider trading, how is it defined and what are the actions taken to curb it?
8. What are the laws for insider trading, who can enforce them and how?
9. How do stock exchanges curb the insider trading practice?
10. What are the codes of conduct, business rules, etc.?
11. What are the disclosure requirements, reporting requirements by members for market operations with respect to (a) shareholding; (b) takeover intentions; (c) other cases
12. How are market makers/dealers penalized/suspended stockwise and timewise?
13. What is suspension in trading of stocks of any company imposed?
14. How is the suspension renamed and trading restored?
15. What are the provisions for settlement of any dispute?
16. If the powers to penalise of various agencies overlap, which agency has the final say in the matter?
17. What is the relation between NASDAQ and SEC?
18. How are the areas of operations are demarcated?
19. When do the rules of NASDAQ prevail over rules of SEC and vice versa?
20. What are the different cells for imposing the penalties and for monitoring their compliance?

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Provisions Relating to the Misuse of Insider Information

The following recommendations are based upon the review and assessment of all the existing regulations regarding insider trading. The purpose of this review was to determine the extent to which an insider trading prohibition is contained therein and to make recommendations accordingly. Initially, it must be recognized that the extent to which any exchange can combat insider trading without government assistance is limited by jurisdictional considerations. (Note: When the word "Member" or "Counter" is used it is intended to mean both Members and Dealers.)

The only provisions which could be construed as relating to, or which could be applied in respect to, the misuse of insider information in the OTCEI Bye-Laws, Code of Conduct, Draft Business Rules and list of Possible Violations: Members are as follows:

A. <u>By-Laws, Article XIV, Section .01</u>.

This is a general prohibition on engaging in conduct "inconsistent with just and equitable principles of trade or detrimental to the interest, good name or welfare of the OTC Exchange or prejudicial or subversive to its objects and purposes".

Obviously this provision is very general in nature and would have to be specifically interpreted to prohibit insider trading if it is to be so used. The "inconsistent with just and equitable principles of trade" language could be interpreted to do so if insider trading activity is considered inconsistent with such in India. This aspect of the provision is very similar to Section 1 of the NASD's Rules of Fair Practice which has been used to cover a variety of categories of improper conduct. However, it is difficult to see how the provision could, without more, be applied to insider trading in India given the apparent acceptance of such there almost as the norm. If this section is to be relied upon, a specific detailed interpretation or rule would have to be developed. Alternatively, it could be done by case law, so to speak, but this doesn't seem likely given the situation re: insider trading in India. Also, fairness to members would dictate that a rule be specifically delineated before instituting an insider trading case against someone.

B. <u>Code of Conduct, Sections 1 and 37</u>.

1. <u>Section 1</u> - This Section is also very general and has the same infirmities as the Bye-Laws section discussed above and would require some additional definitive action to make it effective. It states as follows:

"A Counter in the Conduct of its business should observe high standards of commercial honor and integrity and just and equatable principles of trade".

It would appear that the intent of the Section is to implement, at least in parts the provision of the Bye-Laws quoted above.

2. Section 37 - This Section comes the closest to regulating insider trading and may be the attempt at the specific rule or interpretation of the Bye-Law provision suggested above, but it is still a long way off. It states as follows:

"No person associated directly or indirectly with the Counter must use or cause to use any information made available to him/her for personal gains/benefits"

(Note: The word "must" in the second line should be "may".)

This Section's deficiencies are:

a. The only prohibition is on the Counter, or person associated therewith, using any information, or causing it to be used, for personal gains/benefits. It doesn't extend beyond the specified persons.

b. "Any" information is not defined and includes information other than confidential inside information i.e. information developed by a person who studies a company and decides that it is a good investment. Whether "insider information", "information which would influence the price of a security" or some other term is to be the key phrase it should be specifically defined. "Information which would influence the price of a security" is used in Section 6.4.17 of the Draft Business Rules and seems to be a good phrase to cover the situation.

c. It doesn't prohibit the counter or persons associated therewith from passing on the information to someone else who could benefit, even though the Counter or persons associated therewith do not. The "cause to use" language doesn't prevent this because it relates only to "personal gains/benefits".

d. It only prohibits "personal gains/benefits" to the Counter or person associated therewith from the misuse, but doesn't cover family members, friends etc. of those persons.

e. It doesn't prevent customers from using such information in connection with the execution of transactions on the exchange with the member's knowledge.

f. It forever prevents the use of the information even after public dissemination. Is this intended?

If the provision is to be effectively used to combat insider trading the "information" in respect to which use is constrained should be defined and the prohibitions broadened to at least:

a. Prohibit the Counter or person associated therewith from taking advantage of such information by executing, or causing to be executed, transactions in the security which is the subject of the information in its account or the account of a third party, directly or indirectly, and irrespective of whether there is personal gain/benefit on the part of the Counter or person associated therewith.

b. Prohibit a Counter or person associated therewith who is privy to such information from passing it on to a third party.

c. Prohibit a Counter or person associated therewith from executing a transaction for a customer with knowledge that it results from misuse of confidential information.

d. Prohibits customer from using insider information from wherever obtained in connection with the execution of transaction on the exchange for their, or any third party's personal gain/benefit.

C. Draft Business Rules, Section 6.4.17 entitled Market Information which states as follows:

> "Any market maker/counter, who has access to information that may influence the price of a security, would first have to inform OTCEI, who will disseminate this information to the OTC Counter network. Market makers/counters making unauthorized use of such information, before it is released in the market by OTCEI, would be penalized and have disciplinary action taken against them on these grounds".

The second sentence of this paragraph is the applicable provision, the first only relates to the dissemination of information to OTCEI. The provision implies that unauthorized use of information that may influence the price of a security is improper because it says the disciplinary action will result if such is done, but it does not specifically prohibit the action. Also "unauthorized use" is not defined, it does not extend to persons associated with the market maker/counter and does not apply to a non-market maker/counter or its associated persons. Section 6.4.17 could be construed broadly but would it still lacks definition which the members need. The reference to "Information which would influence the price of the security" is good language and should be picked up in the recommended Section 37 definition.

D. Possible Violations: Members. Code of Conduct segment of the document, Sections 13 and 22. Other Possible Violations segment, Section 7.

(Note: These provisions should not be considered rules; rather, they appear to be kinds of violations that can be charged under the Bye-Laws and rules as written. Thus, they do not create prohibitions or requirements. The following comments are made with that in mind.)

1. Section 13 - This Section is general in nature in that it relates to "unethical practices" and is subject to the same comment as above in respect to Article XIV, Section 01 of the Bye-Laws in that it lacks definition. It apparently delineates an allegation which could be made under Section 1 of the Code of Conduct.

   Section 22 - This possible violation states "Person associated with the counter using the information made available for personal gains/benefits".

   This possible violation would apparently be alleged pursuant to Section 37 of the Code of Conduct and requires the same comment as that Section. Also, it doesn't say what information is being referred to and applies only to persons associated with the counter and not the counter itself.

   Other possible violations, Section 7 - This provision states "Unauthorized use of company information prior to release in market by OTCEI".

   This also obviously reflects Section 37 of the Code of Conduct and would be subject to the same comments. Further, it doesn't say what is meant by "unauthorized use", and for the first time refers to "Company" information, without definition, rather than "any information" as Section 37 states. Is use of non-material company information to be prohibited? Note that this prohibition frees up use of the information after public dissemination which Section 37 does not. This is as it should be and should also be included in Section 37.

DATA AND TRANSACTIONS ESTIMATES

DATA ELEMENTS			
Dealers	130		
Companies	50		
Investors	100,000		
Investors/Company	5,000		
Total Investments	250,000		
DATA PARAMETERS			
Storage for each quotes & Deals (bytes)	100		
Stock Turnover	3		
Trading Day	2		
Quotes made by Market maker per Deal	5		
Brokers on the OTCEI	100		
Market Makers on the OTCEI	30		
Business Days the exchange is open	220		
Ave M-Maker Hold Time (mins)	1		
Ave Broker Hold Time (mins)	2		
Ave Call Setup/Disconnect Time (mins)	1		
DATA VOLUMES			
Securities Inventory	650,000		
Deals	340,909		
Quotations	25,000		
Investor Data Bank	25,000,000		
Investor Holdings	25,000,000		
Outstanding CRs	25,000,000		
Securities Master	2,250		
Dealer Master	4,550		
Total Size	76,022,709		
BUSINESS TRANSACTIONS	DAY	HOUR	SECOND
Deals	3,409	1,705	0.47
Quotations	17,045	8,523	2.37
Quotes/Market Maker	568	284	0.08
Enquiry-Deals/Broker	170	2	0.02
TOTAL	21,193	10,513	3
DATA RATES	DAY	HOUR	SECOND
Deals	2,727,273	1,363,636	379
Quotations	13,636,364	6,818,182	1,894
Quotes/Market Maker	454,545	227,273	63
Enquiry-Deals/Broker	136,364	68,182	19
REQUIRED COMMUNICATION TIME (HOURS)			
Required Market Maker Communication Time	19		
Required Broker Communication Time	9		

SYSTEM FUNCTIONALITY MATRIX

When reviewing the system functionality, the team found that for the future development of the OTCEI

Feature	Standard Feature	Enhancement Required
<u>Order Management</u>		
Order Input	YES	NO
Market Orders	YES	NO
Limit Orders	NO	YES
Fill or Kill Orders	NO	YES
Order Rejection	YES	NO
Order Amendment	YES	NO
Order Priority	YES	NO
Order Display	YES	NO
<u>Trade Capture</u>		
Trade Entry	YES	NO
Trade Capture	YES	NO
Trade Matching	YES	NO
Off Market Trade Reports		
<u>Settlement</u>		
Settlement Interface	YES	NO
Dissemination of <u>Market News</u>		
Input News Item	YES	NO
Company Events	NO	YES
Market News	NO	YES
External News	NO	YES
Delayed News Release	NO	YES

Dissemination of
Market Information

Quote Display	NO	YES
Trade Publication	YES	NO
Trade Ticker	YES	NO
Index Calculation	NO	YES
Market News	YES	NO
Closing Prices	YES	NO
Information to Vendors	YES	NO
Market Statistics and History	YES	NO

Regulation and Admin Database

Register Member	YES	NO
Register Broker	YES	NO
Register Official	YES	NO
Register Security	YES	NO
Stock Registration	YES	NO

Market Watch

Reporting Thresholds	YES	NO
Anonymous Price Reporting	YES	NO
Price/Trade History	YES	NO
Large Bargains Report	NO	YES
Spread Limit Monitoring	YES	NO
On-Line Supervision	YES	NO
Monitoring of Functions	YES	NO
Market Matching Control	YES	NO

Market Watch

Suspend Market	YES	NO
Suspend Security	NO	YES
Suspend Member/Broker	YES	NO
Open/Close System	YES	NO
Open/Close Market	YES	NO
Audit Log	YES	NO

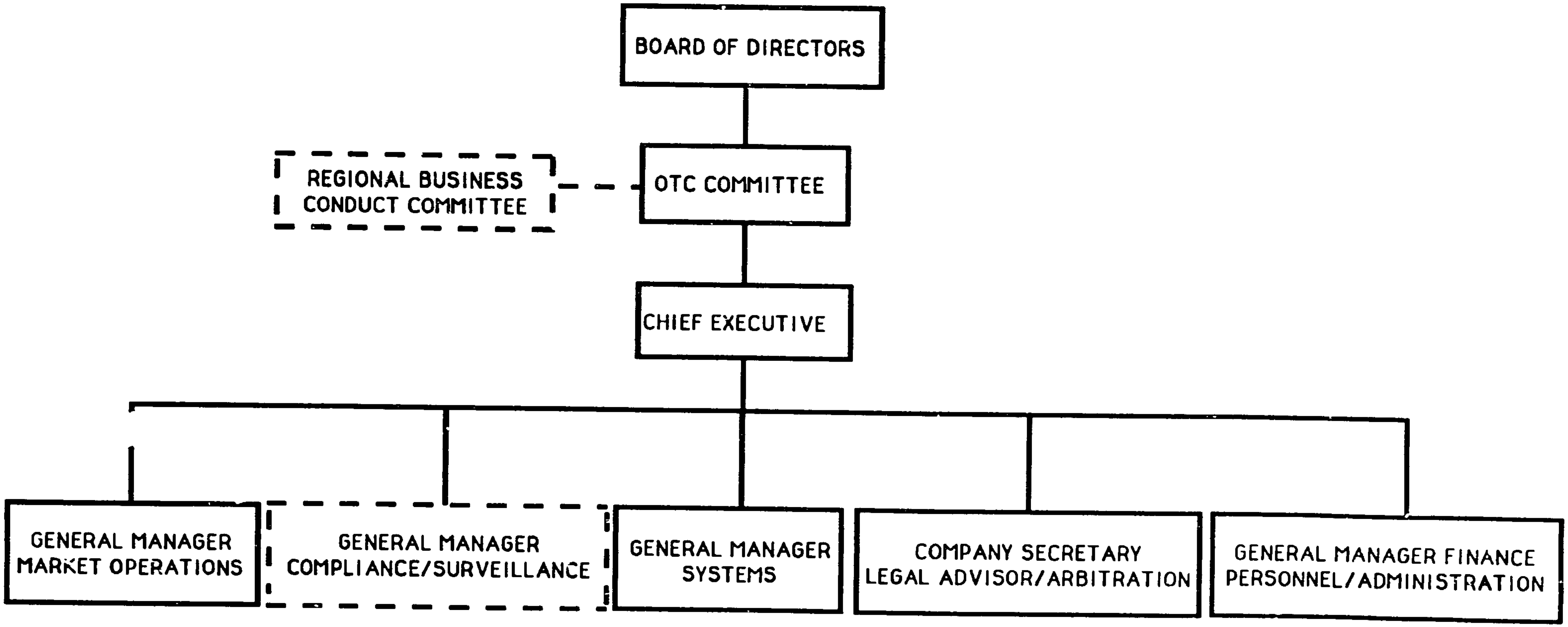
Billing and Finance

Tariff Database	YES	NO
Billing	NO	YES
Investor Payment Recording	YES	NO

Future Requirements

Non-Equity Instruments	NO	YES

ORGANIZATIONAL CHART



REGULATORY SKILLS REQUIRED FOR OTCEI PERSONNEL

Price Waterhouse Over-The-Counter Exchange Of India Skills Matrix	Accountant	Internal Auditor	Legal Counsel	Paralegal	Capital Markets Specialist	Senior Management	Industry Specialist	Data Processing Specialist	Economic Analyst	Financial Analyst	Examiners
I. RULE MAKING	X		X	X	X	X					
II. LICENSING			X	X	X					X	
III. DISCLOSURE	X		X		X		X	X			X
IV. INSPECTION		X	X		X						X
V. SURVEILLANCE			X		X				X	X	X
VI. ENFORCEMENT		X	X	X	X	X				X	X
VII. APPEALS			X	X							
VIII. RECOMMENDATIONS			X		X	X					