7.1 Introduction

International tendering requires the foundations of a sound information intelligence system, as the key to effective decision making in international marketing management.

Information can be viewed in two broad perspectives:

(i) as an aid to the decision-making process at various levels, and
(ii) as an input in the analysis and understanding of a phenomenon.

The first one is the policy perspective and the second one is analytical perspective. These two perspectives are often interlinked, one leading to the other. For example, in case of taking decision on imput tariffs and export subsidies, the relevant information pertaining to domestic and international prices, production, marketing costs, tariffs, subsidies in other countries, etc. is required.

Identification of each executive's information need is the prerequisite for developing a useful management information system. This requires a clear understanding of the individuals' role in the organisation—his responsibilities, his authorities and his relationships with other executives.
The tasks involved are:

(a) design a network of procedures that will process raw data in such a way to generate the information which is required for management activities.

(b) implement such procedures in actual practice.

Information system can be designed logically and without reference to the physical means of implementation. The natural fallout from logical systems design is the specification for physical design, which are contained in the details of the data, people and processes used to produce information. In other words, the hardware and software used to implement information systems are secondary to the primary task of defining what information is required.

Open approach of asking an executive, what information he requires often proved to be not fully successful. One of the reasons may be, the executive may find it difficult to be articulate because the organisational structure of his company may not be clearly defined. There is a tendency among operating executives to think of information exclusively in terms of their company's accounting systems and the reports thus generated. It is found that executives either under estimate or over estimate the understanding capabilities of the information professionals and thereby create a gap in communication.

The best way to develop a dynamic and usable system is to move beyond the limits of classical accounting reports and to conceive of information as it relates to the vital elements of
the management process viz. planning, controlling and operational activities. The crucial elements in the design of an information system for international tendering therefore rests on determining what sort of information must be collected and converted into intelligence. (11,14)

7.2 Methodology

The techniques followed in this study to identify the information requirement for quoting international tenders for machine tools are:

(a) Interviewing of various executives in informal manner (more as a discussion), who are engaged in international tendering activities. Instead of asking directly to define their information needs, discussions are conducted to find out how the export organisations function, how the international activities are performed in practical situations, how the personnels at different levels interact to make decisions, etc. By analysing the findings of the discussions, the information requirement in international tendering for machine tools are inferred.

(b) What is revealed in the analysis, is verified by observing people in the act of executing various functions related to international tendering. This method helped mainly in understanding the task of data collection, accumulation, transformation at the various stages
of bidding which is the ultimate function in international tendering.

(c) Analysis of several case studies (sampling), tender documents and trade enquiries reported as received by various export promotional organisations.

(d) Information flow analysis to understand the complex system of international tendering for machine tools and the information requirement at the various stages of decision-making.

To maintain the trade secrecy, the names of the persons and their organisations are omitted as far as possible in this thesis.

7.3 Information Flow Analysis

The information flow diagram (Figure 13) indicates what type of information is required by whom, when and from where it is obtained.

The information flow shown in this diagram is generalised. It may vary in case to case basis.

7.4 Interdivisional Information Exchange Requirement

Analysing the methodology for quoting international tenders it is found that an intensive appraisal of the international tender documents requires a multidisciplinary approach. In other words, international tendering activities involved a good deal of interdivisional cooperation and coordi-
Figure 13: Flowchart for information flow diagram of international tendering

Contd.
Contd
nation, mainly, in evaluation of any contract and bidding according to the terms and conditions of the floated tender. These divisions are: Engineering, Manufacturing, Finance, Legal and Marketing.

Some of the information requirements of a bidder from these divisions and the corresponding aspects of study are tabulated below. (Table 2)

<table>
<thead>
<tr>
<th>Information Requirement</th>
<th>Aspects of Study</th>
<th>Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product information</td>
<td>Study of the technical specifications of products</td>
<td>Engineering &amp; R&amp;D</td>
</tr>
<tr>
<td>Technology evaluation data</td>
<td>Analysis of own capacity in meeting the required specifications</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>Factors affecting the product design</td>
<td>Possible changes in product design</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>Capability of customerisation of product</td>
<td>Determination of time frame for product adaptation</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>Variation in cost depending on changes in design</td>
<td>Cost estimation, in case any change in product design</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>Information Requirement</td>
<td>Aspects of Study</td>
<td>Divisions</td>
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<tr>
<td>-------------------------</td>
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<td>-----------</td>
</tr>
<tr>
<td>Orders-Sales report</td>
<td>Scrutinisation of the order book situation and clarification whether the tender(order) can be filled</td>
<td>Manufacturing Division</td>
</tr>
<tr>
<td>Factors influencing cost of a product</td>
<td>Preparation of cost estimation (in consultation with engineering division)</td>
<td></td>
</tr>
<tr>
<td>Capability of delivery of a product in scheduled time</td>
<td>Production scheduling - whether delivery period can be maintained/bettered</td>
<td></td>
</tr>
<tr>
<td>Possibility in subcontracting</td>
<td>Contacting subcontractors (if necessary)</td>
<td></td>
</tr>
<tr>
<td>Product standardisation information</td>
<td>Study of the certification of quality conditions</td>
<td></td>
</tr>
<tr>
<td>Information Requirement</td>
<td>Aspects of Study</td>
<td>Divisions</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Infrastructure for installation and commissioning machinery abroad (if necessary)</td>
<td>Provision for special services</td>
<td>Manufacturing Division</td>
</tr>
<tr>
<td>Suitable payment terms</td>
<td>Study of the terms of payments</td>
<td>Finance Division</td>
</tr>
<tr>
<td>Various credit terms, incentives and its interpretation</td>
<td>Whether and what better credit terms can be provided</td>
<td></td>
</tr>
<tr>
<td>Profit margin and its effect on price</td>
<td>Impact of provisions regarding spare parts, servicing</td>
<td></td>
</tr>
<tr>
<td>Data on direct export cost</td>
<td>Impact of direct export cost</td>
<td></td>
</tr>
<tr>
<td>Legal implications of the contract</td>
<td>Provision regarding settlement of disputes</td>
<td>Legal Division</td>
</tr>
<tr>
<td>Information Requirement</td>
<td>Aspects of Study</td>
<td>Divisions</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
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<td>-------------------------</td>
</tr>
<tr>
<td>Proper law of the contract</td>
<td>Legal Division</td>
<td></td>
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<tr>
<td>Risks/responsibilities of the company</td>
<td>Study of the contract conditions,</td>
<td></td>
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<tr>
<td></td>
<td>especially penalty, liquidation, damages</td>
<td></td>
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<tr>
<td>Assessment of the proposed market</td>
<td>Analysis of the marketing environ</td>
<td>Marketing Division</td>
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<tr>
<td></td>
<td>ment of the tender</td>
<td></td>
</tr>
<tr>
<td>Company's past performance report and competitors' information</td>
<td>Rating the prospective client/target market</td>
<td></td>
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<tr>
<td></td>
<td>Analysis of company's past perform</td>
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<td></td>
<td>ance of award winning factors of the tender</td>
<td></td>
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</tbody>
</table>

**Table 2: Interdivisional information exchange in International Tendering**
It is found that the working relationship between departments/units and their coverage of activities vary from one organisation to another. For example, if an organisation involved in manufacturing of products as well as exporting the products, the nature of communication or information exchange will vary from an organisation whose job is only to export machine tools of various manufacturing companies. Therefore it is not possible to provide a standard format of information exchange among various departments with relation to coverage, degree of details, length of time, etc.

However, there are some of the questions regarding divisions of functions that may be raised in determining the multidisciplinary approach of international tendering activities as follows.

(i) Are separate organisation units responsible for tendering and order processing and execution. If so, what is the time of demarcation between their respective functions.

(ii) What is the relationship between field offices/area offices and the sales headquarters with relation to establishing a credit policy or approving an individual tender.

(iii) To what extent do tendering department order execution, production control or manufacturing department have direct contact with customer.
regarding bid preparation, order processing and shipment

(iv) To what extent do the tendering departments directly interact with manufacturing department

(v) What are the relationship among tendering departments, order and sales departments

(vi) What are the interaction necessary in case of fixing up a date of shipment or delivery date

(vii) If the manufacturer has several plants at various places, how the international tendering activity is coordinated.(7)

7.5 Analysis of Case Studies

In order to identify the type of information needed at various stages while bidding a tender, simulation analysis of the activities of the actual situations is done. Some of the analysis in the form of case studies are given below.

7.5.1 Case Study 1: Tender for Milling Machine

Tender Specifications: Ministry of State Farms Development, Ethiopian Livestock and Meat Corporation floated a tender (Bid no. 003/78) for the supply of machinery and equipment. One of the items specified in that tender was Milling Machine (one no.) along with other products. The specifications of the milling machine was as follows:
- working surface about 1.5 x 0.35 metres
- distance between spindle and table 0.5 metres
- Speed range 30-1500 rpm
- with universal dividing heads and standard cutting tools

Action taken by Company M:

Company M is a machine tool manufacturing company, having experience in exporting its products, was interested to bid for this tender only for milling machine. First check was made whether the tender is divisible, then a check was made to find out the business relationship between Ethiopia and India — whether favourable or not. After confirming the tender was divisible and there was a good business relationship existing between the two countries, the company M was interested to know whether its own product was equivalent to the required specification of the tender. Matching the bidder's machine specification and that of tender requirement was found that one of the models of milling machines was compatible. There was only a slight deviation from the specifications regarding the working surface of the selected machine. After negotiating with its manufacturing department for required amendments, the company M decided to quote the particular model of the milling machine.

Analysis:

This particular case indicates that for a bidder, the knowledge of business relationship between a tender floating country and bidder's country is very essential. It is also
evident that the nature of tender influences the decision for bidding. This study indicates that to bid against a tender, it is necessary for a bidder to store specifications of its machines as well as the specification of products belonging to other manufacturers whom the bidder represents in the international market. Also it emphasises the need for an efficient mechanism for matching the offered product's specifications and required specifications of the tender and for selecting procedure to identify the most promising one for quoting purpose. It also indicates the information flow between a bidder and a manufacturing unit of a company.

7.5.2 Case Study 2: Machine Tool Procurement

Kingdom of Thailand, Ministry of Education, Institute of Technology and Vocational Education floated a tender for procurement of equipment including machine tools to use in its various technical campuses. The conditions for bid prices were as follows.

(a) Bidders were requested to quote on the basis of firm prices in the currency of their own country, or in US dollars

(b) The following details regarding price were asked to be mentioned in the bidding document.
(c) Where bidders expected to incur some expenditure in a currency other than his own, in producing the products to be supplied, the bid price might also be presented partly in such other currencies.

**Action Taken by the Company ABC:**

Company ABC first collected the ex-works price for its qualified machine tools - basic machine price as well as price for special accessories. A management decision had been taken to select the model to calculate the total CIF price for each machine tools which were selected for bidding purpose. First, FOB price of each product was calculated considering the various cost factors involved in export product pricing. The final FOB price thus calculated was then compared with the competitor's expected prices. To make its own machine's price
compatible to that of the competitor's, company ABC had to change the value of various parameters in its price model to get the optimum results.

**Analysis:**

The above example indicates that it is necessary for a bidder to have at least an idea of competitors' price structure which acts as guidelines in finalising the export price of a product for a bid. Prior knowledge about company's own objectives and policies, market nature, terms and conditions of the particular tender, government's rules, regulations, incentives, etc. are very much essential for a bidder while deciding the price of the product to be quoted.

7.5.3 Case Study 3: Tender Involving Counter Purchase

In the early '80s one of the Indian export company(X) received a tender information from the Ministry of Manpower and Transmigration, Indonesia for the supply of machine tools and equipment for 141 vocational training centres. The volume of equipment involved was quite huge and the value estimated was to be more than Rs.200 million. This tender came under the purview of Indonesian counter purchase regulation, in addition to Buyer's credit to be extended to the Ministry of Finance, Indonesia for the full value of the contract.

Though company X could organise Buyer's credit through EXIM Bank, it experienced difficulties in agreeing to the counter purchase clause. Ultimately, company X could not participate in the above tender and lost a business opportunity.
Company's Past Business Position:

Company X had supplied during the past years machinery and equipment worth several million rupees to Indonesia for vocational training centres and government agencies. It has also successfully completed a turnkey contract under the Ministry of Industry. It has a Marketing Manager as well as a Project Office in Indonesia, apart from an effective agent.

Competition:

Since this tender involved the supply of huge quantities of simple machinery and equipment, countries like USA, UK, West Germany, Japan, Rumania and France had agreed in principle to the Indonesian regulation regarding counter purchase.

Main Points under Counter Purchase Regulation:

In order to increase the exports of its non-petroleum products, Indonesian government regulations specified that bidders participating in government tenders would have to give an undertaking to arrange for importation of Indonesian goods other than petroleum and natural gas by their respective countries. The counter purchase of Indonesian goods is coordinated by the Indonesian Department of Trade and Cooperatives, which publishes a list of Indonesian non-petroleum goods available for counter purchase and the list of Indonesian organisations dealing in these products.

The main terms of the counter purchase regulation were as follows.
1. The value of the goods imported from Indonesia to be equal to the foreign exchange value of goods supplied (shipped) to Indonesia.

2. The period during which counter purchase is to be effected is the same during which the shipments to Indonesia are effected.

3. The penalty for non-performance of the undertaking, given by the bidder is that he will have to pay 50% of the difference of the value of goods actually imported from Indonesia and the value of goods that would have been imported as per the undertaking.

**Action taken by the Company X and Problems faced in Quoting this Tender**

Since Company X on its own cannot import commodities from Indonesia, it was necessary to involve other governmental agencies, which could take up the responsibility of counter purchase from the Company X. At that time Government of India's long-term policy regarding this matter was not very clear; therefore a formal approval by the Ministry of Commerce was necessary. Thus Company X approached the Ministry of Commerce and the Ministry of Industry for permission to enter into counter purchase deal specifically for this tender.

Ministry of Commerce directed Company X to discuss with MMTC/STC the possibilities of importing such items which were
Though MMTC was interested in tying up with Company X for counter purchase clause, it could not do so as it had already other business tie-up with Indonesia.

STC showed interest in counter purchase with regard to import of palm oil which was not available for counter purchase. However, Company X's representative at Jakarta held discussions with the concerned authorities and introduced palm oil also in the commodity list. STC agreed to undertake the counter purchase regulation completely if PEC was the main bidder. Thus, a consortium approach involving Company X, PEC and STC formalised.

Company X approached the EXIM Bank to give formal approval for buyer's credit as stipulated in Tender. EXIM Bank advised Company X to first obtain approval from Ministry of Commerce for Counter Purchase. Ministry of Commerce convened a meeting of EXIM Bank, PEC, STC and Company X and advised that the counter purchase could not be operated at Company level and government would have to examine the issue in its totality.

(51)

Analysis:

Analysing the information requirement aspect of this particular case, it is found that a considerable amount of time and effort were taken to collect and analysing information such as, information required for processing counter trade proposals as it was not available in a standardised format and was not
readily available to the exporters; there was no country-
commodity matrix for counter trade which would have helped 
the exporter to find out easily the Indian position at any 
point of time in a given market. The lack of readily avail-
able information regarding the demand of the various materials 
in different countries and the potential interested customers 
to buy the materials from India was one of the important 
causes which made the company to lose the chance of bidding. 

7.5.4 Case Study 4: Third Party Involvement in Tendering

One of the exporting organisation (X) in India identified 
the potentiality of exporting some of its machine tools to a 
foreign organisation (Y) in the country (A). The tender had 
been floated under the condition that the company X must pur-
chase one specified material from Y. After negotiating with 
MMTC, company X found out that the material offered by Y is 
not required in India. Thus it was not possible to export 
machine tool directly to Y. Since the offer was quite attrac-
tive, and the probability to win the bid in technical as well 
as other commercial terms were quite high, the Company X was 
interested to find a solution for the counter trade problem. 
Thus it started to look for an alternative solution. After 
negotiating with various personnel at various levels in vari-
ous organisations in India and abroad, the Company X identified 
a trade organisation (Z) in the country (B) who was interested 
to finance the Company X for its machine tools on behalf of Y 
and to purchase the specified material from Y directly on be-
half of the Company X in India. It was agreed that the Company X
would supply the machine tools directly to the organisation Y in the country A and Company Y would supply the material to the organisation Z in the country B directly. Thus the Company X was able to supply its bid to the organisation Y and later received the order for this offer.

Analysis:

This particular case study indicates the complexity and the unconventional procedures involved in international tendering. The major information, decision and material flow among the three organisations involved in this case are indicated in Figure 14.

Money flow depending on price fixation of machine tools & materials

![Diagram showing major information, decision & material flow](image)

Figure 14: Major information, decision & material flow
This particular example indicates the importance of information in identifying an alternative as well as in right decision-making in international tendering. It emphasises the readily availability of various types of information such as trade organisations or financial organisations in India and abroad, the markets for various materials in different countries, the competitors' trade approach.

7.6 Basic Information Needs

It is observed that the international tendering activities require three basic types of information such as:

1. Environmental Information: This covers description of the social, political and economic aspects of the environment in which a business operates or may operate in the future.

   Specific examples of the data included in this category are:

   **Country**
   
   Geographic, cultural, climatic, population, political parties, law and order situation, etc.

   **Government**
   
   Attitudes, political affinity, financial standing, bureaucratic efficiency, commercial efficiency, rules, regulations, various credits and incentive facilities, export promotional activities of home government, key personnel, etc.

   **Infrastructure**
   
   Ports, shipping services, loading and unloading facilities, air services, rail services, road transport, river transport, storage/godown faci-
lities, communication facilities (postal, cables, telex), banks, etc.

Economy
State of economy, trade statistics, balance of payments, tariffs, taxes, patent laws, currency regulations, travel regulations, etc.

Business and Industry
Prospective customers - their attitudes, preferences, ethics and key personnel, Agents - quality, influence, Consultants - attitude, preferences, key personnel, subcontractors - civil, electrical, mechanical, sanitary, refrigeration and rates for each category

Project Financing Authority
Attitude, preference, main area of operation, rules and regulations, type of assistancy, key personnel, etc.

Resources availability
Water, electricity, office rents, cement, steel, timber, labour - skilled and unskilled, wages, turnover, union, etc.

The environmental data category is one of the least formalised and hence usage in management information systems is quite scattered in most of the companies.

2. Competitive Information: Data on competition comprise the second category of information. They can be classified into three categories.
(a) **Past Performance:** This includes information on the profitability, return on investment, share of market and so on of competitors' companies. Such information is primarily useful in identifying one's competitors and also is used as benchmark when selling or modifying company's objectives or policies, comparative performance especially recently awarded tenders, etc.

(b) **Present Activity:** This category covers market leaders, new product introduction, management changes, price strategy and all current developments of the companies, comparative statements on engineering/managerial competence/costs, marketing techniques used and auxiliary services provided, estimated margins, strengths and weaknesses, etc.

(c) **Future Plans:** This includes information on future market penetration, extension of export and import facilities, research and development efforts, etc.

Both competitive information and environmental information are known as external information. Like environmental information, competitive information is an infrequently formalised part of a company's total information system.

3. **Internal Information:** Internal information is made up of internally generated data of a company. Use of internal
data are aimed at identifying company's strengths, weaknesses and the characteristics. Internal data can be further classified into three types.

(a) Quantitative - financial, e.g. sales, cost, and cost behaviour relative to the parameter changes, etc.

(b) Qualitative - physical, e.g. productwise share of the market, tender performance, etc.

(c) Non-quantitative - e.g. product specifications, characteristics and evaluation, etc.

While collecting actual data on the basis of these requirements the following questions should be answered.

(i) What political information is needed to set reasonable objectives for tendering in a company

(ii) What sociological and economic data about the areas of operation are needed to formulate new tendering strategy

(iii) What competitive intelligence is necessary to make a bid more compatible in world tendering environment

(iv) What internal cost data are needed to get alternative prices for quotation. (3,78)

The various possible sources used for collecting external information are included in Annexure I.
7.7 Use of Computers for Information Processing and Access

Information, in order to be effective has to be synthesised harmoneously to provide absorption capacity to the receiver. The computer-based information provides a good system for this purpose. It helps transactional modulation of stored information. Such modulation helps activation of knowledge formation and its application. The next chapter discusses the issues related to such synthesis of data and information into knowledge and wisdom.