

CHAPTER VIII

TECHNOLOGICAL DEVELOPMENT ENTREPRENEURIAL PERCEPTIONS, PRESCRIPTIONS AND PRACTICES

Contents

8.1 Entrepreneurial Perceptions

8.2 Prescriptions

8.3 Practices

8.4 Concluding Remarks

CHAPTER VIII

TECHNOLOGICAL DEVELOPMENT: ENTREPRENEURIAL PERCEPTIONS, PRESCRIPTIONS AND PRACTICES

The issue of technology acquisition or strengthening the technology base at the firm level is a matter generally decided by the entrepreneur himself, in the light of market and cost conditions. In this context, the perceptions of the entrepreneurs on various aspects of technological development assume importance. These perceptions are quite likely to vary from industry to industry and among the entrepreneurs with varied backgrounds. Implicitly, the practices that they follow are by and large, dictated by their perceptions.

In this chapter, it is proposed to highlight the perceptions of the entrepreneurs on various issues relating to technological development in the surveyed units. In the course of discussion with the promoters on issues such as technology transfers, foreign collaborations, exports, modernisation/upgradation, Government policies, the role of various institutional infrastructure etc., some of the reactions were not only sharp but also revealing. The entrepreneurs expressed opinions on general issues such as marketing, finance, procedural formalities, compliance with various Governmental agencies etc., which affect the overall functioning of the SSI units. The entrepreneurs came out with a few suggestions for improvement in the environment in which the SSIs are functioning. These are discussed under policy prescriptions. As they are emanated from the field study, they have practical relevance.

This chapter opens with a discussion on the entrepreneurial perceptions followed by the policy prescriptions. Lastly, an attempt is made to outline the measures attempted by the entrepreneurs for improving/strengthening the technological capabilities of their units and for updating their technical knowledge and other related issues for the overall functioning of the organisation.

8.1 Entrepreneurial Perceptions

In the course of discussion with the promoters, an open-ended question was raised whether they can suggest any policy change that can be brought about for technological development in this priority sector. The response was overwhelming. More than 90 per cent of the entrepreneurs reacted. Even in respect of others, opinions could not be elicited as they were extremely busy with prior engagements.

However, only about 40 percent of the responses were related to specific issues while more than half of the entrepreneurs commented on general issues (Table 8.1). In certain cases, the responses were common. While in respect of the independent small scale units, the promoters themselves participated in the discussion, in respect of the promoted units. The Chief Promoter/Chairman responded for the group as a whole.

The entrepreneurs¹ perceptions on the technology transfer from the national laboratories, the Government policy, the role of financial institutions and marketing are examined in the following sections in that order.

TABLE 8.1

Classification Of Responses

S.No.	Responded to	<u>No. of Respondents in</u>			
		EE	CDP	ENGG	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)
1.	Specific issues	20	13	7	40
2.	General issues	29	11	12	52
Total of 1 + 2		49	24	19	92
3.	No response	3	2	3	8
Total		52	26	22	100

8.1.1 Technology Transfer From National Laboratories

A large number of promoters expressed the feeling that the role of national laboratories in strengthening the technological capabilities of the SSI units in terms of technology transfers and necessary back-up services is marginal. Nevertheless, whatever the technological support they receive from the laboratories cannot be used in that form as they develop only lab-scale technology. These technologies need modifications to make them commercially viable. There are a few instances among the sample units where the technologies received were modified more than four times before they were launched for commercial production. This calls for additional investment on the part of the recipient.

Majority of the entrepreneurs strongly felt that the national laboratories lack adequate interaction with the industry to find out their research needs. Further, no market surveys are undertaken to find out the commercial viability of their research output. As a matter of fact, one of the premier national laboratories had to redesign the machinery which was found unsuitable to the requirements of the industry concerned only after demonstration. This obviously results in wastage of time and scarce productive resources. Some of the entrepreneurs who received technology felt that the technologies developed in the national laboratories are not upto the mark and that outdated project reports are supplied.

Commenting on the working of the national level organisations and the national laboratories working in the state, the entrepreneurs said that they are ill-equipped, lack awareness of developments in other organisations and necessary expertise. The technologies developed in these laboratories do not reflect the latest scientific knowledge of the scientists inspite of their access to the well-equipped libraries. Implicitly, personal considerations over-ride the institutional interests. It is reported that some of the scientists working in the national laboratories and public-sector undertakings are cashing in on the knowledge acquired with the national laboratories by rendering consultancy services to private industries.

The entrepreneurs pointed out that there is lack of co-ordination among the organisations working in the related areas. They are ignorant of the developments in other organisations and laboratories. One of the promoters complained that the public-sector undertakings due to vested interests prefer to import certain components instead of purchasing the same indigenously produced, from the S.S.Is, inspite of cost advantage and a matching quality.

Some of the promoters who are also the NRDC licensees observed that a few national laboratories are very co-operative in solving the technical problems arising out of technology transfers by providing the needed support facilities. However, it was pointed out that a few of them have not been able to devote the needed attention. Delays at various stages of processing of requests at the NRDC was also pointed out by the entrepreneurs. The popular opinion of the entrepreneurs in this context was that the flow of comprehensive literature about the know-how available for release and product profiles giving the latest picture of these processes has been found to be inadequate.

To sum-up, what comes out prominently is the low profile of the national

research laboratories, and other organisations functioning in the state, in terms of transfer of technologies to small scale sector and necessary back-up services compared to the huge investments and vast infrastructural facilities created. Lack of effective linkage between the users and the generators of the technologies is another area which needs to be attended.

8.1.2 Government Policy

The observations made by the entrepreneurs on the policy environment were by and large general. Government interference, attitude of the bureaucracy, rules and regulations, the working of raw-material servicing centres etc. mainly figured in their discussions. They opined that all the rules, regulations and laws are counter-productive. The Government's acts are not conducive to growth. No single government agency is in a position to explain thoroughly about hundreds of rules and penalties for violation of the rules and regulations. Most of the small entrepreneurs expressed their unhappiness over the functioning of the Government organisations. Bureaucracy is hindering the growth of SSIs they strongly feel. The officials cannot take quick and independent decisions due to inadequate knowledge of the rules and regulations. They lack dynamism and are reluctant to take quick decisions. Procedural delays and corruption in the official circles are not uncommon. In fact, most of the entrepreneurs are totally unhappy with the officials of the central excise department as they treat the SSI units as criminals and they look at the entrepreneurs with suspicion. It is disheartening to comment they said, that even sincere and honest entrepreneurs are not spared.

Another important imperfection in the policy regime as pointed out by the entrepreneurs is lack of effective interface between the Government and small-industry business. The units are handicapped with lack of information and publicity about the Government programmes, schemes and the policy support in the form of concessions and incentives. There is no systematic attempt on the part of the governmental agencies to reach the small units.

Commenting on the functioning of the Raw Material Servicing Centres (RMSCs) in the state they felt that the rejected lots of raw-materials are supplied to the RMSCs which would naturally affect the quality of the finished product. Further, under the present policy of the Government, the SSIs are not permitted to buy raw-materials directly from public sector organisations such as Steel Authority of India Limited. As a result, the SSI units are denied of concessions offered by SAIL for bulk purchases. In fact they expressed the

opinion that it is better if the Government stops treating the SSI sector as a priority sector.

On R&D set-up, they observed that the incentives and tax reliefs offered by the Government to the recognised R & D units are not attractive enough so as to have a separate recognised R & D set-up. Considering the physical and financial resources at his command, it is difficult if not impossible for the entrepreneur to satisfy all the conditions stipulated by the DSIR for R & D set-up recognition. It was emphasised that no bank, financial institution or any governmental agency comes forward to finance the R & D set-up in the S.S.S. Further, it was also felt that Government funded private R & D facilities are inadequate to the requirements of this priority sector.

On the export front, it was opined that the Indian products have poor image abroad. S.S.Is are not able to compete in the international market because of high costs and poor quality of goods. They felt that the export procedures are cumbersome and there are undue delays with the Joint Controller of Exports and Imports. Further, it was pointed out that guidance from Government export houses such as State Trading Corporation is inadequate. Whatever help is rendered, it is not satisfactory.

More importantly, the small manufacturers are seriously handicapped due to lack of upto date information flows about the potential markets, price trends, changes in the policy environment etc.

8.1.3 Financial Institutions

On the role of commercial banks and other financial institutions in providing the necessary finance to the SSI units, the promoters felt that the banks underestimate their capabilities and act merely as money lenders and not as participants in the production activity. Bank assistance is available on the basis of past performance of the units which is not always favourable to the SSIs. Even where commercial feasibility is proved, banks do hesitate to finance. Further, banks refuse to raise the working capital limits for SSIs unless performance is satisfactory for which again finance is needed. It is a vicious circle they felt.

In respect of bulk drugs and formulation manufacturers, the financial assistance is inadequate particularly the working capital, which they need relatively in huge sum. Not only the finance is inadequate but is also not need-based. The entrepreneurs complained that there is no special financial support

from the banks, to meet advertising expenses and R & D set-up. As a matter of fact R & D is looked down by banks as they feel it unproductive.

On the working of bankers in respect of sanctions and disbursements of loans, the entrepreneurs expressed their unhappiness over unreasonable delays, too much of paper-work and procedural formalities. All these kill the enthusiasm of the entrepreneurs and dampen the hopes of even a settled entrepreneur and affect the production planning schedule. Further, due to uncertainties in getting bank finance, the entrepreneurs are not able to adhere to the delivery schedules.

8.1.4 Marketing

It was felt that the primary barrier to technological innovation relates to marketing. More specifically, uncertainty of market information, market fragmentation limiting the market size and difficulties in identifying and developing new market areas are considered main impediments.

The entrepreneurs admitted that SSIs lack market awareness - a weak point to compete in the national as well as international markets. As such, they need marketing capabilities for which professionals are required. If the products are of high technology nature and the users are lay persons, the problem is all the more difficult to market. In the case of consumer products, they felt that marketing is expensive as advertisement costs are involved. In fact two of the sample units changed their line of activity due to the need for extensive and expensive marketing efforts needed for marketing their products. Some of the sample units have to compete with their larger counter-parts, with established brand names and sometimes even with multinationals. This is particularly true with the formulations manufacturers. Perhaps it is, these problems that encouraged two of these units to enter into foreign collaboration agreements for marketing their products.

8.2. Prescriptions

The entrepreneurs made several policy proposals on various issues confronting them. These are presented in order of their importance.

- a) The Governmental interference in their working should be minimum so as to allow them to concentrate on production, R & D and marketing. If the small manufacturers are left to themselves and allowed to operate in their own way, many of their operational problems get solved.

b) There should be an effective linkage between the Government and the small industry business. Perfect communication and information flows between the two is not only desirable but inevitable in the interests of an orderly growth of the SSI sector. What is required is wide publicity of the Government programmes, schemes and various incentives, concessions and tax benefits available to them. It was emphasised that there should be an attitudinal change in the bureaucracy.

c) Procedures, formalities and paper-work should be simplified and minimized. Delays should be avoided to the extent possible.

d) The research undertaken by the national laboratories should be need-based. For this purpose, there should be a continuous dialogue with the small industry regarding the actual requirements. It is desirable to depute scientists willing to work in SSIs to help them in upgrading their technologies. There should be perfect co-ordination between the various national laboratories on the experiments they undertake. Further, the laboratories can also have better ways and means of interaction with the universities and other organisations.

The national laboratories developing lab-scale technologies should also undertake pilot plant experiments and demonstrate the commercial feasibility of the research efforts to avoid repeated modifications of the technology transferred which has inherent cost implications.

It was also suggested that the release of know-how by a laboratory should be informed to the Small Industries Service Institute and Poly Technology Transfer Centres for further help to the entrepreneurs in the areas of market surveys, managerial counselling and escort services etc. It is suggested that a technology implementation division be set up at the state level to oversee technology transfers and provide necessary guidance to entrepreneurs.

e) Organisations such as SISI, Andhra Pradesh Council for Science and Technology etc. in association with the engineering colleges and R & D institutes can periodically organise workshops for dissemination of experiences and to bring the parties concerned together, apart from funding specific projects. This will help horizontal technology transfers within the state. It is also suggested that state level financial institutions are also involved in these technology transfer programmes so as to get first-hand information on the feasibility of the technologies and this will help in expeditious clearance of the proposals for financial assistance. It is desirable that the laboratory concerned

is associated in project implementation and subsequently till the unit becomes viable.

f) So far as exports are concerned, the promoters wanted that the export-promotion efforts of the Government should be further strengthened. There is need for establishment of export promotion zone in Hyderabad in view of increase in exports of manufactured goods from the twin cities and the neighbouring areas. It was suggested that the Government can identify prospective customers in other countries and depute trade delegates for negotiations after identifying export potential industries. The small manufacturers should have more access to export-related market information

g) On the finance front, the practical policy proposals were, the provision of adequate working capital assistance from the commercial banks particularly in respect of bulk-drugs and formulations manufacturers. Further, proven record of success should be considered as the basis for financing expansion and diversification of projects. It was felt that the consultancy cells in the banks lack expertise. They lack practical experience too. To gain first-hand experience, bankers and other financial institutions should depute persons to S.Is. A credit rating cell should be set-up in all the banks.

h) In the area of marketing, several suggestions relate to marketing channels and market information system. If The National Small Industries Corporation or district co-operatives undertake the marketing of the products from the priority sector, not only the middlemen can be eliminated but also more attention can be paid by the units on production, cost and quality. Access to up-to-date market information will go a long-way in strengthening the marketing capabilities of the small manufacturers in both domestic and international markets.

8.3 Practices

It would be a rewarding experience to learn the measures taken by the entrepreneurs for improving the technological capabilities of the units and updating their technical knowledge. It is important to mention in this context that all the measures are self financed and available within the plant. A few of them relate to labour relations. It should be made clear in this context, that some of these measures are reported by the entrepreneurs themselves and in respect of others, the researcher had observed during the field visits. They are outlined below.

- a) Many promoters subscribe to good technical journals in their respective fields and maintain documentation. A few of the promoters suggested that the library facilities available at the national laboratories and public sector units such as NGRI, IICT, NIN, DRDL etc. should be open to them also.
- b) Entrepreneurs either attend or depute their technical staff to seminars, workshops, conferences etc. to get the latest knowledge/developments in their respective fields. In a few cases, employees are sent abroad to equip themselves with the state of Art technology.
- c) A few of the units conduct seminars, symposia and hold discussions of the developments, in their own field by inviting professionals, Government officials and their counterparts. This opportunity provides them with exchange of views and interaction on the subject. Sometimes lectures are arranged within the unit by outsiders on certain important aspects of present day importance such as ISO 9000.
- d) One of the units from EE group publishes an in-house journal called SPECTRUM covering various aspects of technological developments/changes in their line of activity. It is to be mentioned that it is the first unit in the electronics industry to enter the remote sensing field.
- e) The small units in general and CDP units in particular establish contacts with different embassies operating in the country to know the details of the producers and prospective customers in their respective countries.
- f) A few of the units particularly of EE group and CDP groups offer attractive sum (upto Rs. 20,000) to the employees of higher cadre who contribute technically, for their innovative ideas and their successful implementation.
- g) In most cases, even though the units do not have specific programmes of incentives, but insist on attendance, discipline and overall performance. Wages are linked to performance of the employees. Cash incentives in the form of festival gifts beneficial to the entire family but not to the workers alone are offered. In few other cases the incentive payments are linked to quality of output.
- h) To minimize labour problems to have cordial relations and to maintain motivating work atmosphere, workers are given free accommodation with water, electricity and other facilities. Further, a few units in the CDP group provide food and entertainment at subsidized rates.
- i) One of the serious problems faced by the small units is the labour

turnover. As is well known, the SSI units have become training grounds for the unskilled and semi-skilled workers who leave the organisation for better prospects, once they are trained and acquire skills. As such, to retain the skilled workers and those whom they identify as efficient and do contribute to the overall performance of the unit are paid over and above their wages. Incentives, on the other hand, indeed, do not focus specifically on the technological development alone excepting in the two units as mentioned earlier, but, contribution for overall growth/development.

- j) Last but not the least, the environment, work culture, surroundings layout, the way their offices and factory premises are maintained, the filing system, the treatment accorded to visitors, outsiders, inter-personal relationships are impressive and conspicuous by their very presence. All these are undeniably, indirect indicators of a healthy and growing unit.

8.4 Concluding Remarks

From the foregoing account of the perceptions, prescriptions and practices of the sample entrepreneurs, what emerges strikingly is that the small business lack up-to-date information on several issues such as technological trends, efforts made by the national laboratories, public policy programmes, schemes, marketing opportunities abroad etc. SSIs need information not only on what is currently available but also on technological trends, in order to avoid choosing technology that may soon become outmoded. They need to know where to obtain technologies, with a sense of the alternatives offered by different suppliers. They also need to keep abreast of key trends in the foreign and local markets that the country plans to produce for. They, thus need access to continuous technology information with market intelligence. Most of this information gathering and analysis has to be done at the firm level, but because of the economies of scale in this activity, there is also an important role for specialized institutions including technology agencies and special consultancy organisations. Firms need supporting networks and institutions for information, technical assistance, quality control and R & D.

Another area which needs attention, is bank finance. Timely and adequate assistance particularly the working capital requirements will help the small manufacturers in a large measure in finalizing their production plans and adhering to their delivery schedules.

The role of the national laboratories in the improvement of technological capabilities of the SSIs in terms of technology transfers and back-up services has come into poor light/There should be a qualitative change in the working

of the laboratories for need-based research programmes leading to successful commercialisation of their efforts.

Finally and more importantly, there should be attitudinal change in the functioning of bureaucracy, Government organisations and other agencies in favour of the SSIs. Government funded R & D in private sector should be promoted to help solve some of the pressing technological problems of the SSIs.