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IDENTIFICATION OF PROJECT - A SYSTEMS VIEW

by

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Preface

During July 1977, I taught in an Executive Development Programme on Project Identification, Formulation and Appraisal (PIFA). The topic on which I concentrated related to identification of projects and how one could understand this in relation to a system. While I was taking these sessions, I had perceived some gaps in my own understanding of such a process. Subsequently, I devoted some time to work out the details of a framework and ended up with the present paper. I do realise the limitations of my approach and analysis and would be thankful for comments from the readers.

I wish to acknowledge typing and other assistances given by my secretary, Mr. A.M. Muraleedharan.

5 October 1978

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Identification of Project - a systems view

This paper aims at integrating areas of formal planning system and decision making with project identification by an entrepreneur, a development agency or corporation. The agency may be in the field of industry, agriculture or services but its primicipal activity, as viewed here, is perception and identification of development opportunity or projects. This paper draws upon management approach to such identification, entrepreneurial and managerial aspects of such identification and the methodology developed with reference to this overall activity. This methodology is developed, as we shall see, with reference to development decisions of big corporations or industrial concerns. Nevertheless, many aspects of this methodology are useful to development decision by an agency. For us what is more relevant is the identification of a development project which precedes an investment decision.

This paper is divided into three parts. In part one we discuss the development process with major emphasis on the entrepreneurial decision. In the same part we also discuss the major factors and forces which in a manner provide an explanation for industrial and entrepreneurial development in India during the recent past. In part two we examine the corporate experience in the field of environmental scanning and analysis to relate the same to strategic and entrepreneurial decisions. In part three we try to formulate a conceptual framework which should be useful to intending entrepreneurs as also development corporations.

I

The first distinction to be understood is between an entrepreneurial decision and a managerial decision. The former is characterised by its innovative nature.(1) But this is not enough nor are we concerned here with what is and what is not an innovation. Our aim is to throw some light on the manner in which an entrepreneurial decision is taken or arrived at. Thus, our analysis does imply an acceptance of the definition of 'what is innovation' but 'how it is approached' as against 'what it is', has greater relevance for this paper. In the available literature on entrepreneurial decision answer the question "What is an entrepreneurial decision" or "What do entrepreneurs do" is generally available but not "How do entrepreneurs innovate" or "How do they do it". One of the reasons for this perhaps, is that historical accounts of what entrepreneurs do are largely biographical and not so much decision-oriented. Hence, the innovative process per se has remained largely unexplored.

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1 The term 'innovation' has to be understood properly. It is certainly a new idea, a concept, a product or a process. More precisely innovation is the act of organising activity - business activity more particularly - around the new idea or concept or the activity of commercially harnessing the invention or results of some research. The unconditional association of an innovation is the fact that it is something new. Development organisations in their own way do face the challenge of developing something new when the traditional manner of conducting activity does not seem to solve their problems. In the unit of such an innovation, as defined in this paper, is a project. Hence, project identification has been regarded as co-extensive with innovative activity. This however, does not exhaust the concept of innovation. More of this discussion occurs elsewhere in this paper.

Entrepreneurial activity divides itself into three sets of interdependent activities.

(a) Perception of an opportunity based on an innovation,

(b) Setting up of an enterprise - a business unit, an industry etc. to exploit the same and

(c) Running the business as going - profitable - and growing concern.

From the point of view of any agency interested in generating developmental forces the above three activities would transform themselves into three macro-level questions as follows:

(a) How are opportunities generated and perceived

(b) How are resources allocated and development activities started whether at the industry, zonal or regional levels and

(c) How do these activities become profitable, self sustained and induce growth activities further?(2)

Of the three, this paper would examine the background to (a) in both the formulations - micro and macro - in order to state 'How do entrepreneurs innovate' or 'How are opportunities generated'.

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2 Corresponding to these three macro-level questions are three policy-level prescriptions. These may be stated as (a) What should be done so that many more individuals or agencies perceive opportunities? (b) What should be done so that many more units are established? (c) What should further be done so that the success stories of these enterprises generate a second line of entrepreneurs? Industrial development or the development process, viewed in this manner, consists of the pioneer - the entrepreneur and the follower or the second-line entrepreneurs. The first case is as important as the proliferation.

It will be understood that the entrepreneurial decisions cover a longer period in terms of their implementation and operation. They imply a break from the past, carry larger risks and a vision of development with far-reaching economic and social implications. As against this, the managerial decisions are generally addressed to day-to-day problems, are short period in terms of operations and carry adjustments as against fundamental changes. They are also known as routine or administrative decisions. However, drawing a simple demarcating line between entrepreneurial and managerial decisions is difficult. In many cases the entrepreneur himself becomes the manager of his unit. The above distinction between entrepreneurial and managerial decisions, has therefore to be accepted in a limited way.

The Developmental Process

The developmental process is essentially an innovative process and at the macro-level it is the outcome of several entrepreneurial decisions. The entrepreneurial scanning of the environment is the precondition to such decisions. In many an underdeveloped economy the entrepreneur or the enterprising man on the one hand, and traditions of industrial and commercial development and all that go with it on the other, are relatively weak. It is therefore suggested that major entrepreneurial decisions in strategic sectors by development agencies are required to start the process of industrial and related

development.[3] The entrepreneur in this context may be an individual or an agency like a development corporation, a regional development authority or a planning body but each should be able to identify innovative projects with strategic importance and take entrepreneurial decisions. How far could such decision-making agency, in addition to the individual entrepreneur, be assisted by formal planning and systems analysis to identify projects for their entrepreneurial decisions?

By their very definition entrepreneurial decisions are innovative in nature. They involve innovation, investment and risk. These three are closely interrelated and as we would see, the crucial problem has always been to define an innovation in a given set-up. There is no ready definition of the term innovation and Schumpeter used the concept in more than one sense.[4] For Schumpeter innovation is only a short-hand expression for a range of decisions that the entrepreneur must be

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3 More popularly known in economic literature as the strategy of unbalanced growth. See, The Strategy of Economic Development, Albert O. Hirschman (Yale University Press, 1958).

4 On entrepreneur and entrepreneurship Joseph Schumpeter's views are available in almost all of his writings. Nevertheless, the publication which truly recognised the dynamic role of the entrepreneur is the Theory of Economic Development - (Harward Economic Studies Series, 1934). Schumpeter has viewed the entrepreneur in this as part of a socio-economic process. The other important work is Capitalism, Socialism and Democracy (Unwin University Books, London), 1965.

capable of taking. The decisions fall into the fields of technology, organisation, selling and markets, research, public relations, employment co-ordination of productive inputs and even management. The common characteristic applicable to all these decisions is the fact that they are all related to something 'new'. We can extend the concept of innovation with reference to a development agency, and include even creation of infrastructure, institution-building and creation of new organisation. These become almost co-extensive with development activity and are accepted as projects. Infrastructure of all types - roads, power, communication etc. - provide the much needed pre-condition for industrial and other growth. Thus these decisions and forms of investments in the same, can also be regarded as entrepreneurial or innovative decisions in the typical underdevelopment melieu. We must however, make it clear that the essential features of innovation as something 'new' involving investment and risk apply notwithstanding the context. And yet what is recognised as an innovation in one period or phase of development ceases to be innovation in the next. Innovation is therefore a historico-relative concept. Corresponding to this, the individual or agency whom we call an entrepreneur also will be historico-relative. He will not perform the same functions but will continue to innovate.[5] At the same time,

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5 A somewhat similar context is found in Chamberlain when he states "...as a firm's managers embark on new projects, they encounter a variety of novel problems which must be resolved. Gradually the difficulties are overcome and this novel becomes converted into the routine, releasing management's time for other new projects leading to firm's expansion". See Enterprise and Environment - the firm in time and place. Neil W. Chamberlain (McGraw Hill Book Company, New York, 1968) p.19

whether or not a decision is entrepreneurial /innovative will depend upon some judgement about the context and the environment. The development agency like the individual entrepreneur is required to identify what is innovation in a given set up or .meleiu and organise its activities to implement the same in the form of a project. This clarification is essential because it provides a perspective to the understanding of innovative process and entrepreneurship.

In the business world however, entrepreneurial activity and the background to the decisions are likely to reveal a highly unsystematic at times erratic processes with reference to identification of innovative projects. The course adopted by no two entrepreneurs would be identical. It will be equally correct to say that the same entrepreneur would not identify another opportunity in the same way on another occasion. As an articulate entrepreneur described it the range of entrepreneurial identification extends from "random perception of an opportunity to a systematic development of industries in the recent past in India we do discover some pattern both in regard to perception and identification of the opportunity and the overall growth of industry. Thus, even when each entrepreneur moved as an individual, isolated in a manner from other entrepreneurs, all of them placed togehter were moving in a certain direction. In other words, industrial development that was taking place revealed a certain definite and unmistakeable pattern. If this data is analysed it should offer some bases for developing a "systems way of entrepreneurial identification." This data needs to be analysed and the type of questions

we have in mind for such an analysis may be stated as follows: How have entrepreneurs perceived opportunities? In doing this what areas did they look into or examine? Were they guided by any major factor or set of forces operating around them? Did they find any encouraging and discouraging factors in their activity relating to perception? Is it possible to analyse answers to the above questions and develop guidelines for future development? Let us briefly enumerate the bases or background to perception of opportunity by entrepreneurs in India during the post-independence period.

Framework of Planning

In order to evaluate or obtain some measure of growth of entrepreneurship, we should firstly take the major macro influences which seem to have provided or widened scope for the same. The question to which we are seeking an answer is what was happening to the basis of opportunity during this period and how had it been understood or defined by the entrepreneurs. It will be agreed that any empirical examination in this field must start with the basis of opportunity.

In the first place, planning for economic development was going to take place in terms of certain objectives, strategies and priorities. These, in their turn, were to be translated in terms of basic policies, investment magnitudes, sectoral allocations and targets. All these were in a sense to lay bear the major objectives of industrial and

development.[6] When the First Five Year Plan was being formulated the first Industrial Policy Resolution (1948) had already been passed and had provided some directions for enterprise. The schedules of the Industrial Policy Resolution were suggestive as it were, of the channels through which entrepreneurial developments were expected to flow. The programme for industrial development of the Five Year Plans provided the much needed content. The specific industry targets were evolved through the committees appointed for each industry group. These then were incorporated in the industry plans and programmes.

Such a framework should place entrepreneurial development and its typical manifestations in a proper and somewhat meaningful perspective. It will be seen that we are trying to establish some relationship between certain macro-level forces and the behaviour of the individual entrepreneur.

The Policy Framework and Entrepreneurship

The Industrial Policy Resolution had also introduced another far more important and basic consideration relating to industrial and entrepreneurial developments - this was the determined effort on the part of the State to reserve certain industries and sectors for the

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6 According to Medhora "Planning affects in many respects not only the circumstances within which entrepreneurs operate but the content of the entrepreneurial function itself". See his "Entrepreneurship in India," Political Science Quarterly, No.4, December, 1965, pp. 558-580.

public sector. (This relates more to the Industrial Policy Resolution 1956 than the Industrial Policy Resolution 1948). The growth of the public sector meant massive investment of capital, plant, machinery and technology, public ownership and control and a position of strategic importance for the industry. These, in their turn, were to proliferate however, through several successive and related streams of industrial development. The initiation of the public sector at once seemed to widen and narrow the sphere of entrepreneurial activity. Insofar as, the state entered certain industrial field as an entrepreneurial and pioneering agency the field of private enterprise became shrunken. But as a result of the development in the public sector, opportunities began to show up in many related fields of activity extending in a manner, the overall area for industrial and entrepreneurial development. Interesting results of such expansion can be shown if we examine the backward and forward linkages relating to any major public sector investment. The backward and forward linkage could be used as a tool for assessing and even initiating entrepreneurship development. It could also be used at the second round for ancillary development.

Import Substitution

Growth of entrepreneurship in the post-independence period was substantially helped by the policy of import substitution. It formed indeed a part of the broader strategy for industrial development but deserves a part of the broader strategy for industrial

development but deserves a separate mention because of its considerable impact in determining the character of industrial development. Import substitution has remained as a single important factor in the industrial development of many countries. The policy measures which directly help this are tariff protection, import restriction, total ban on imports and development of local substitute materials. The more positive aspect of these measures are the promotional measures to encourage industries based on import substitution. While this kind of framework has helped the growth of enterprise it should be specially emphasised that some of the industrial units were coming into existence almost for the first time.

We may now enumerate some of the more specific factors and policy measures as providing basis for opportunity and entrepreneurial perception of the same. In addition to the policy of import substitution, several other policy measures and factors need to be enumerated. The following is a select list but does illustrate the main thrust of the argument:

entrepreneurs have selected products based on their own experience or their partners' experience in the line.

entrepreneurs have selected products based on the expansion /diversification plans of their own or any other ongoing business.

entrepreneurs have selected products which are likely to have a ready demand either in the local or regional market. This may also be due to their product being a required component in a major industrial product or it may be based on the expansion of a major industry.

entrepreneurs have selected products whose imports are banned or controlled by the government. This factor has been found in the small, medium and large scale industrial units.

entrepreneurs have selected products which show high profitability.

entrepreneurs have selected products based on certain specific advantages available to that product.

entrepreneurs have selected product lines guided mainly by changes in certain aspects of industrial policy - more specifically the licensing policy. The delicensing of vanaspati is a case in point.

Somewhat similar to the above is the situation when entrepreneurs come to know of a product line as a result of Reports by government committees. Entrepreneurs' selection of electronic products was attributed to the awareness created for the same by the Bhabha Committee Report on electronics.

It will be seen that the basis of the opportunity or project in the above enumeration is viewed as emerging from the immediate or related environment of the entrepreneur to the somewhat remote or unrelated aspects of environment. We can also view it alternatively as proceeding from more specific to general. In actual industrial situation this basis could be multiple insofar as, the entrepreneur's perception may be influenced by more than one factor. For example, import substitution may be the more important factor but the position of the product with reference to schedules of Industrial Policy, licensing or delicensing status, relation to overall plans of industrial development and therefore some kind of inter-industry relationship etc. provide a combination of factors which sustains as it were, the entrepreneurial perception. The multiple basis, in our view, can be examined further with the help of tools of formal planning.

The entrepreneurial perception of the opportunity in the above relate to three categories of decisions - starting of a new unit and expansion and/or diversification of output in an existing unit. Now the decisions with reference to the latter two categories are generally taken by the manager or the cheif executive of a company. The decisions do however, partake of entrepreneurial perceptions. Even with regard to decisions for expansion of output in the same product line more recent technological development require to be evaluated and hence, a modified "innovation-investment-risk nexus" would be found operative. The decisions relating to diversification on the other hand may require many more aspects of the environment to be examined and evaluated. The decision in this would bear comparison with innovative, entrepreneurial decision. From the point of view of the main focus of this paper, we would now examine how entrepreneurial and managerial decisions cover or have reference to different aspects or segments of the environment. Further, we would like to find out if we could examine such references with the help of a formal systems approach. Alternatively, what would be the limits within which such a formal approach would be applicable leaving the rest of the decision-making areas to intuition, hunch or rule of thumb.

II

Scanning the Environment

On this subject much literature of an advanced nature is available in the field of private corporate planning, development and decision-making. A fundamental precondition to all this is environmental scanning and analysis.(7) Environment is indeed a very inclusive concept and would at one stroke engulf all the aspects, cultural, social, political, legal, economic and technological, some at local and national, other at international levels. Further, every company and management operate in an environment and the different aspects of environment reveal themselves only in the context of different situations which require analysis, understanding and at times, decision-making. From the point of view of a single, on-going company the concept of the overall, all-embracing general environment is not so much relevant as its peculiar operational environment and the company executive or management normally concentrates on scanning and studying this environment. The operational environment is the one in which the company has its day-to-day operations. The objective of such a study or examination

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7 To scan according to one dictionary is "to scrutinise point by point", according to the other "to look intently at all parts successively". The popular meaning of scanning is "to look over something hastily". The particular cannotations of scanning accepted here are the former two. For details, see Scanning the Business Environment. Francis Joseph Aguilar, (The MacMillan Company, An Arkville Press Book, New York (1967), Chapter 2, p. 9. The Scanning Process. Aguilur discusses four types of modes of scanning such as, (1) undirected viewing (2) conditioned viewing (3) informal search and (4) formal search. In terms of the major emphasis of this paper it will be modes (2) and (4) which will be more useful as against modes (1) and (3)

may be,

(a) need to predict,

(b) enabling management to anticipate and initiate changes, if required, and

(c) detect signals for long-run development for expansion and/or diversification of the companies activities.

In doing this the company is trying to establish some meaningful relationship between its activities and environmental forces around it. From the point of view of a company, taking a long period of time environment has two broad, identifiable interpretations. One - environment as an uninterrupted, continuous series of events and two, events and happenings that matter and hence, need to be studied by the company management. In point of fact, the environment reveals itself more meaningfully to the company only in terms of the second category above. But it must be stated that what is included and excluded from the environmental aspects in each situation would always depend upon the nature of problem and decisions to be taken. If it is a routine management decision than the aspects of the environment to be taken into consideration are perhaps, definable and their dimensions are almost known. The company management will be inclined to examine its operational environment. However, if the decision is an entrepreneurial or innovative decision, the time involved will stretch over long period and we are likely to come across environmental aspects which are not fully definable. In other words, this type of scanning typically involves informational requirements that cannot precisely be defined, data that are not readily available and subjects athat are at times unfamilar to the scanner.

Formal in this context bears literally the same meaning i.e. pertaining to the form, based on forms and rules. The question is: Can the entrepreneurial scanning be dreduced to a formal system?

Commenting on the comprehensiveness of such overall scanning, Aguilar states, "Scanning must move farther and farther from the immediate environment of the company in search of basic trends. Emphasis must shift from the immediate areas in which the company competes to the industry as a whole and thence to the aggregative and general, economic, technological, political, and social spheres. Each outward step multiplies the number of relevant factors and the volume of information to be considered. Each outward step introduces increasingly tenuous relationships."(8) Both in terms of range and intensity such scanning differs from scanning for routine managerial decision. Such scanning again may be undertaken by an existing company or a new company. The information that a company collects at such stages is therefore very comprehensive but the same has to be understood and analysed in terms of some criteria of relevance because every piece of information may not be required. Describing this difficulties inherent in overall scanning and collection of information one executive stated, "Assessing the environment is very much like piecing together a giant puzzle from the parts of many giant puzzles. You have the problem of looking for the missing pieces and the problem of deciding which of the pieces you pick up even belong to your puzzle".(9)

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8 Aguilar op. cit. p. 9 The reference here is to strategic decision which in many respects turns out to be entrepreneurial

9 Aguilar op. cit. pp. 9–10.

Aguilar offers a four-fold classification with reference to information received by a company and the new one that it tries to collect for strategic decisions:

(a) External Information that a manager receives

(b) External Information that a manager wants

(c) External Information that a manager needs and

(d) All external information that a manager receives

It is not unlikely that some wanted information is not received and some received information is not wanted. But perhaps the most difficult problem facing the manager is to devise a method by which the relevant information is separated from all other types of information and determine what kind of decisions do these informations feed.

In addition to the external information that a manager receives, there ought to be considerable amount of internal information available on a more regular basis. This information should also be available in a classified form, i.e. relating to cost, working capital, pricing, revenues, markets etc. For decision-making both the external and internal information are useful. But as in the case of external information it is relevance and relevance alone which will govern the use of internally generated information. With reference to developmental decisions the question again will be to piece together relevant internal and external information.

Corporate environmental scanning and analysis for developmental decisions has to be comprehensive and multi-dimensional. As Bhattacharyya observes, "it involves the scanning of the entire spectrum of the social, political, technological and economic forces likely to have a bearing on future performance of the organisation, the industry to which it belongs, the business generally, with a view to determining what the organisation can reasonably seek to achieve during the strategic plan period."(10) Further, pertaining to each agency and its specific area of activity, objectives and focus it should be possible to subdivide the total environment in terms of more specific categories or areas. These are the relevant environments and the agency concerned could describe it as "our environment" because that is the environment to which it adapts or in some other situation, tries to modify or control. If the environment of a company can be described as a totality or a system then to this should correspond some sub-systems. A company refers to both totality or the system and the sub-systems. It is necessary to develop the concept of this system and sub-system further to relate the same to the decision-making focus of an entrepreneur.

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10 "Strategic Planning me Operational Considerations" S.K. Bhattacharyya, Economic and Political Weekly (Bombay) Vol. VII No. 22, Review of Management, May 27, 1972 p. M-68 (our underline)

Any system conveys the sense of a totality and interdependence within the totality. System can hence be described as interdependent set of elements. Any system both as a totality and its inter-dependent components must mean something to the user. Alternatively, the purposeful use of data or information must inevitably lead its user to probe further and discover inter-dependence, it should also be possible to identify the sub-systems and which of the sub-systems are more important or useful than the others. Now, the sub-systems and their hierarchy will in the first place depend upon the objective of the user agency. Their relevance to the agency could be described as an outcome of the objective and the specific period for which reference to the sub-systems is being made.

Environmental scanning is done with a view to collecting relevant information and the identification of sub-systems of the environment enables the company or the agency to reach the appropriate location for obtaining the required information. Talking about the relevance of sub-systems Kenneth E. Bouilding observed, "If you are in the business of making smoked glasses for eclipses, then obviously the astronomers' predictions are rather useful to you. If you are in the business of insuring against the weather, then obviously you are interested in the predictions of meterologists.... [11] The two activities referred to by

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11 How Companies Plan Stewart Thompson (American Management Association - AMA Research Study 54-1962) A Basis View of Planning p. 40.

Boulding, even though somewhat peculiar, indicate that it is relevance which defines the sub-system for a company, business unit or an agency. It should be an interesting exercise to identify the sub-system of various business activities. However, our objective here is to project this analysis and understanding into the area of entrepreneurial decisions. In the second place, it is our aim to show that the framework of analysis can be applied without much modification to developmental decisions taken by corporations, regional development authorities and similar other bodies.

III

Entrepreneurship and Project Formulation

Based on what we have discussed so far we should now examine a more important application-oriented aspect of entrepreneurship development. The major objective of development corporations has been industrial development but presently in all the states of India this has become inclusive of entrepreneurship development. In terms of our own thinking on industrial development entrepreneurship development began to be accepted as an integral part of the former during the fourth five year plan.(12)

The steps and stages involved in entrepreneurship development however, need to be examined further. Our discussion of entrepreneurship development

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12 See Mid-Term Appraisal of the Fourth Five Year Plan

in the recent past has highlighted the interplay of certain factors and policy oriented variables helping perception of opportunity by the entrepreneur. These factors find a place in the project report that an individual entrepreneurs is required to submit to development corporations for financial and other assistance. It will be interesting to examine how have entrepreneurs integrated the factors and policy oriented variables into their project reports. An examination of these should throw light on among other things, the entrepreneurial systems and sub-systems.

It may be somewhat difficult to explain the kind of integration of the above factors that is found in different projects for which entrepreneurs may be wanting financial and other assistance. But we can attempt some explanation as follows. For an entrepreneur as also the development corporation, the "project identified" must ultimately prove to be viable and profitable and the manner in which it has been visualised at the project identification stage is important for us. The thinking of the entrepreneur can be illustrated with reference to a matrix as follows.

Suppose an entrepreneur is to make his choice from two projects about which he has the following information.

Entrepreneurial Selection Matrix

Preliminary Data	Project A	Project B
1. Product Status	Priority Industry	Reserved for Small Scale industry
2. Raw materials required	imported and indigenous	indigenous only
3. Plant and Machinery	imported and indigenous	indigenous only
4. Market	Defence department of the Govt.of India	Local/export
5. Technical Know-how	Foreign trained personnel required	indigenous/local
6. Location	industrialised area	backward area
7. Labour requirement	mostly skilled	semi-skilled and unskilled
8. Total investment in plant and machinery	Rs. 10/- lakhs	Rs.7.5 lakhs
9. Profitability	very high	Normal
10. Any specific requirement	Great degree of precision required in production operations governed by detailed inspection of the process and the product	-

The above matrix offers a comparison between two projects A and B. We can add many more items to make the comparison more inclusive. Our purpose is to illustrate two important aspects operative in the process of selection. Firstly, the profitability of the project is

viewed as arising out of several areas of decision-making. Secondly, with reference to each of the items such as, product, raw materials, etc., the entrepreneur must examine the relevant aspects of government policy as they bear on any or all of these. In other words, each data column has some policy status or implication. It is not inconceivable that in one aspect the government policy may be favourable, say import substitution, but in some other it may be unfavourable and may make for a measure of uncertainty. The final view regarding feasibility and profitability of the project is therefore a sum total of several positive and negative factors in the situation at the stage of identification. How fully has the entrepreneur been able to assess these is quite a different question.

When it is stated that government policy is to encouraging industry it means that some products are reserved for some sizes of enterprise or priority item will be given the licence easily. But large part of the encouragement is found in specific promotional measures which relate to some of the aspects in the above matrix. These measures are more than encouraging - they amount to substantial financial assistance in the matter of capital investment, transport and other cost and are expected to influence the choice of the project including the location, size, technology etc. It is our contention that development corporations are inclined to accept project feasibility reports for assistance in which the entrepreneurs have worked out a good integration of the policies and promotional measures, examined

various aspects of these in relation to profitability and finally arrived at feasibility of the same. Their project reports can well be regarded as exercises in entrepreneurial selection and identification of projects.

Overall industrial policy and specific policies relating to sectors of industry, pattern and form of ownership, scale of output and the technology of manufacture, internal or export market and the nature of the product - import substitution based or otherwise, form in our view the system and sub-systems of entrepreneurial scanning. It should be clear that a methodical understanding of systems and sub-systems relating to a product lays bear the nature of choices before the entrepreneur. Should he choose the project primarily based on the nature of the product, scale and technology, pattern of ownership and organisation, the location and the market. Alternatively, which specific combinations of these is consistent with feasibility and profitability of the project. To each of the aspects correspond some policies and specific promotional measures. The policies are regulatory but they also have a developmental aspect and the promotional measures really advance the thrust of developmental aspects. These spell themselves out again in terms of systems and sub-systems to the intending entrepreneur.

Interspersed in the above is a most crucial aspect relating to information. Where does an intending entrepreneur get all the information relating to the different systems and sub-systems?

While it is correct to say that an entrepreneur is one who generates his own data i.e. he has his own way of defining and solving problems, basic information is required by everyone. It is necessary that development institutions which hope to evoke entrepreneurial responses for industrial development should make available certain general sources of information. These should provide information on questions such as, prospects for industry, markets and investment required etc. at a sufficiently general level to offer at least a few alternatives for more detailed feasibility examination.(13) In addition to the information of a fairly general nature there is also need for more specific information and relevant statistical information is perhaps the most important in this. Several scholars have remarked on the data gaps in the Indian economy but these have not been yet examined from the point of view of entrepreneurship development. Even when entrepreneurial projects are based on imports substitution items and relevant statistical data on imports is available required information does not and with the statistics and changes in import regulations. Additional data on number of units already manufacturing the same item, their licenced capacity, location, main consumers etc. is required but it is difficult to locate the same. Again, if an item belongs to the delicensed category obtaining relevant information is still more difficult. These sources need to be located. A few of these are

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13 What is generally known as feasibility study really passes through three main stages. These may be described as general level feasibility, industrial level feasibility and unit level feasibility. It is the last two categories which are more relevant for the entrepreneur as also the development corporation. Environmental scanning passes through all the three stages. From the point of view of entrepreneurship development the point of time he becomes convinced about the project is very significant and development corporation should try to obtain data on this. Their incentives should focus on this point of time.

listed below.

A detailed but somewhat outdated statistical information about industries is available however, in the Annual Survey of Industry (ASI). The more important heads under which data is made available in the ASI tables are number of units form of organisation and ownership, number of workers employed, total capital employed, value added, value of output, size of capital and important structural ratios. We would reckon that the statistical information given in ASI can be utilised in formulating general ideas about a project. Taking ASI data for a period of five years, some conclusions regarding the broad trends of development, output etc. can be drawn. A reference to the annual report of the DGTD(14) should supplement information available in the ASI. In addition to the statistical information of ASI, detailed policy level information for major industries and product lines are available in the Guidelines for Industries.(15)

The manner in which knowledge of policies, procedures, promotional measures and statistical information would be integrated in a project depends firstly upon the project/product itself and more than the project report on how purposefully and meaningfully he has integrated the above aspects of information. The entrepreneurial references to systems

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14 This annual publication of the Director General of Technical Development contains useful information on policies, and procedures and statistics relating to capacity production in major industries, list of new items manufactured, growth rate in core and other selected industries etc.

15 An annual publication of the Ministry of Industrial Development, Government of India.

and sub-systems is, therefore, with a view to working out the best or most desirable integration of policies, procedures, promotional measures and statistical information. An analysis of projects submitted to development corporations from this point of view has revealed such integration at least among the more successful entrepreneurs.

Entrepreneurial system and sub-systems can be presented in a diagram or a framework.[16] The ultimate objective in identifying a system or a sub-system is to obtain the required or relevant information. Identification helps in locating the source and the information. How should one proceed in this endeavour? It would be better to proceed from the macro or general level to the micro or the specific level in terms of each of the sub-systems. The following framework is suggestive of such an approach.

Framework for Entrepreneurial Identification of a Project

Entrepreneurial sub-systems	Macro-overall	Sab-macro-I Industry-cum-region level	Micro-proper
1 General Economic			
2 General Industrial			
3 General Technological			
4 Specific economic			
5 Specific industrial			
6 Specific Technological			
7 Socio-Political			
8 Any other			

16 In the preparation of the framework, I have derived interesting guidelines from Philip Thomas, "External Conditions in Corporate Planning - Scanning, Analysis and Forecasting" - Economic and Political Weekly - Reveiw of Management, Vol.VIII, No.35, August 26, 1972, pp.M.98-M.105

An entrepreneur can read this framework horizontally as also vertically. It is also possible that the information in column on micro-proper and those on specific economic, industrial and technological may overlap. But experienced entrepreneurs have described this whole process of searching for, collecting and analysing information as one of "iteration and reiteration" - a process in which you are likely to go over the same area again and again. Lot of information contributing to the answer whether or not the project is feasible in our economy relates to data, rules, regulations, permissions, licences, certificates and the latest status with respect to these items. The entrepreneur experiences the regulatory function of the government - central or state level - in these areas. Normally, an entrepreneur should be aware of the following policies and regulations.(17)

(a) Industrial Licensing Policy - Status of various product-lines.
(b) MRTP act.
(c) Allocation of foreign exchange for import of capital goods, raw materials and components FERA.
(d) Policy relating to export obligations and import substutiton.
(e) Policy relating to foreign collaboration with foreign companies.
(f) Policy relating to control of capital issue.

The above is not an exhaustive list of policies, laws and regulations but these are the laws generally applicable to companies of a certain size. It should also be clear that there may be companies to which none of the above or only few of the above may be applicable or relevant.

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17 For more details see Wadhva CD. "Environmental Scanning for Corporate Planning", Economic and Political Weekly, 1974, 9(10) M3-M10, "Regulatory Environment and Industry - Some issues concerning an Information System" SEDME, Vol.1, No.2, September 1974, and Indian Industrial Environment - The Regulatory Framework for Business Operation. (Bombay Business India Publication, 1974)

It is not enough that the entrepreneur is aware of these laws but he should also know the staturoy authority, department or corporation that effectively wields control in the respective fields. Further, the legislative authority with respect to each also needs to be identified. Perhaps, one could make a fairly exhaustive list of rules, regulations, authority etc. for an individual entrepreneur in the form of a check list.

The above areas were, in a sense, covered in the application form to be filled in by an intending entrepreneur. The form required the entrepreneur to state clearly the status of the project with respect to the above in addition to the other aspect of feasibility. Some development corporations however, have realised over years that a typical form with all such questions, does not really lay bear the feasibility of a project. They have therefore changed over to an alternative way of eliciting the information relating to a project. For example, under the Application for Loans one financial corporation states .

> ".....Corporation has not set form of application to be completed by those who wish its assistance. It does, however, require from every applicant a comprehensive statement of the nature and purpose of the assistance he seeks, the cost of his project, the means by which he proposes to finance it, the market for the product, the expected profitability of the enterprise, and the managerial and technical arrangements made for operating the project. The information asked is similar to that required by any investment institution and indeed, similar to that required by the applicant himself before he decides to proceed with his investment plan....."

We would suggest that is is desirable that intending entrepreneurs and also development corporations familarise themselves with the framework of systems and sub-systems as above. We would also add that since the knowledgeable entrepreneur is already using the systems and sub-systems

approach - although not so consciously or methodically - for speeding up the process of identification of opportunities or projects development agencies should strive to bring this to the notice of intending entrepreneurs. Development corporations themselves also could use the systems and sub-systems approach for identifying and examining the feasibility of projects.

Knowledge of policies, procedures and promotional measures should certainly hasten the process of project identification, however, there is one more aspect of this knowledge and familiarity which has relevance to our discussion. An entrepreneur perceives an opportunity and succeeds in establishing an industrial undertaking. In the latter, he is greatly helped by his familiarity with procedures and even officials. A question is at times asked whether these perceptions and activities that follow are truly entrepreneurial. Could we even hold them as co-extensive with management? This has been recognised in the current literature as the "cooperative component" of entrepreneurship as against the "creative component" and it is really the mix of the two qualities that are required in the setting up of new ventures. On these two components of the entrepreneur Hirschman stated "...His leadership, his willingness to assume risk, his breaking through old patterns of finance, production and distribution were emphasised and almost made him look like a rebel against society....these qualities were then the most spectacular aspect of entrepreneurship so much so that the other necessary component

was practically overlooked.[18] In many developing countries planning for economic development and several socio-economic objectives of growth have made for a somewhat preeminent position for policy maker, policies and procedures. The latter are at times emphasised so much that it is procedural accuracy which assumes greater significance as against the innovativeness of a certain project idea. The balance between the cooperative and creative component of entrepreneurship is difficult to define and indeed more difficult to implement. However, in specific periods or situations the cooperative component may have assumed greater significance but this would not amount to completely overshadowing the creative component.

Entrepreneurial perception of opportunity or project is one of the principal activities in the development process and the methodology of corporate scanning of environment and strategic decision-making can be usefully employed for the same. Its reliance on systems and sub-systems should simplify or make the process of identification somewhat more intelligible.

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[18] Hirschman op. cit. pp. 16-18. For a more detailed discussion of how innovative executives find it difficult to reach top positions in companies. See R.W. Mac Laurin "The Sequence from Invention to Innovation and its Relation to Economic Growth," Quarterly Journal of Economics. 67 (Feb. 1953), 105.