Barriers to Strategic Changes in Organizations: A Case Study

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Normative business policy literature assumes a rational-analytical response of organizations to environmental changes. Through a case study of an organization that faced structural changes in its environment and viewing it through cognitive and sociological perspectives in addition to the rational perspective, certain fundamental barriers to strategic changes are identified. These are: prevalence of strong and dominant values in the organization, inability to see threats from the environment when they go against the prevalent beliefs of the key members, the past history, and the social system of the organization. How managers can overcome or minimize the effect of these barriers so that they can make quicker and better strategic responses is also discussed.

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Normative approaches to organizational strategy formulation (Andrews, 1971; Ansoff, 1965; Glueck, 1971; Hosmer, 1982) adopt a "rational-analytical" model. According to this model, organizations scan their environment, assess the threats and opportunities, and evolve a strategy in order to achieve congruence between the environment and the character, strengths, and weaknesses of the organization. When the environment changes, they adapt their strategies and redefine them if need be.

There may be fundamental barriers to such strategic adaptation especially if the environmental changes are such that they call into question the basic character of the organization and the values of its key members. Some of these barriers are psychological, arising from the prevalent belief systems of the top managers. Some are sociological barriers that arise because organizations are social systems that resist changes in their identity, the interrelationships of their members, and the shared values.

To identify these barriers, we take the case of Electronics Corporation of India Limited (ECIL), a public sector enterprise set up in 1967. How ECIL responded to environmental changes is examined through three different perspectives: rational-analytical, cognitive, and sociological. We show that barriers which are not revealed by the rational model come to light when viewed through the other two perspectives.

Organizational Response to Environmental Changes: A Literature Survey

There are very few studies of how organizations respond to major changes in their environment. There are many instances, however, of organizations not responding to changes in their environment. Consider for instance:

- The classic example of Henry Ford sticking to his concept of a single model, low cost car produced in high volume, as epitomized in the Model T, even when availability of choice and the need to possess a distinctive car became important factors in buyers' behaviour (Sloan, 1963).

- Ligget and Meyers, and American Brands, two U S manufacturers of cigarettes which did not change their strategies when confronted with threats to their business in the form of publicity on the adverse effects of smoking and legislation to discourage smoking (Miles, 1982).

- The Digital Equipment Corporation (DEC) which did not recognize the threat microcomputers posed to its business and faced a major crisis (Fraker, 1983).

In the rational model, these failures are errors or aberrations. But these organizations had earlier formulated highly successful strategies and their top managers had been outstanding. Can we, then, dismiss these errors so summarily?

There have been some attempts at modifying the "pure" rational model of decision making. Proponents of bounded rationality (Cyert and March, 1963) argue that decision makers do not act in a "pure" or globally rational manner, but their rationality is "bounded." The search for information from the environment starts only when the organization experiences a problem with the existing strategy (problemistic search); the search is, thus, not anticipatory. The information gathered and the alternatives generated are limited; the strategic changes made are not what is optimal under the new situation, but which "satisfice" the decision makers, and the alternatives considered are incremental deviations from the existing strategy.

In this perspective, organizations may not effect strategic changes because: they may not yet have faced a problem, the information gathered was inadequate, or owing to the continuous "satisficing" behaviour, the firm was getting more and more misaligned with the environment, eventually getting into a crisis.

Another incremental model is that of "muddling through" (Lindblom, 1964; Wrapp, 1967). Here, the executive is aware of the need for strategic changes but avoids either articulating or implementing drastic changes; he "muddles through" (albeit with a purpose) successive solutions. To an external observer, it may appear that no strategic changes are in fact made.

The reasons for the "strategic inertia" implied in the above models are questioned by Bower (1970), who shows from a study of a multidivision firm that top management's options are limited in effect by those put up by lower levels. But the top management can create a "structural context" — essentially motivation, reward, and punishment systems — that can determine what kinds of options are generated at lower levels. In this sense, the existing organizational structure influences the strategy and may inhibit strategic changes.,

The main drawback of the above models is that they fail to capture the role of the CEO and other members of top management and their influence. Far from being captives of the organization, many top decision makers may in fact be the focus of the organizations, and the latter the CEO's long shadow. Clearly, Ford was not satisficing or becoming a victim of his structural context while the old strategy of Ford Motors continued. Rather, it was a consequence of his not being able to appreciate the significance of the changes (Sloan, 1963).

The models also fail to take into account the effect of organizational culture and the shared beliefs of its members. For instance, it would appear that in the case of Disney Corporation, the shared value systems, infused by its founder, Walt Disney, inhibited any new thought or new strategic directions for the company after the death of Disney (Magnet, 1984; *Business Week,* 1984).

Clearly, the organizational perspective or the rational perspective — including the boundedly rational — alone is inadequate to gain a full understanding of the problem of why strategic changes do not come about in organizations.

Analysing a case through multiple perspectives has been done in the case of political problems by Allison (1961) and Steinbruner (1974). The former has used rational, organizational behaviour, and political perspectives, while the latter has used the rational, cybernetic, and cognitive perspectives. Such a multiperspective analysis has not been done in the case of business strategy problems. We have adopted the cognitive and sociological perspectives because they promised the greatest potential for analysing our strategic problem.

To show how the other perspectives lead to a better understanding of the problem, we now take up the case study of ECIL and analyse it through other perspectives. We first present the case study itself: the historical background of ECIL's formation and its implication to the character of the Corporation and its shared values; its environment before 1976 and its strategy during the period; the change in environment after 1976; and the responses of the organization to the changes in its environment. Then we proceed to analyse the responses under the three perspectives and the insights gained will be presented in the form of a series of hypotheses.

ECIL: Character of the Organization

The character of ECIL had a lot to do with the fact that it was formed as an offshoot of a research establishment — the Bhabha Atomic Research Centre (B ARC) (earlier

known as the Atomic Energy Establishment or AEET). ECIL's objectives were to develop indigenous knowhow and manufacturing capability in a strategically and economically vital area, namely, electronics.

These objectives were important from a national viewpoint in the early and mid sixties. The electronics industry, with a total production of about Rs 200-250 million in 1965, and that too mostly in the assembly of radio receivers, was primitive. The country had to depend on imports for vital strategic and defence equipment, and this situation was not acceptable to the policy makers at the national level. Since at this time, knowhow on a laboratory scale had been developed in many areas of electronics at AEET, it was considered that by commercializing this knowhow, an indigenous electronics industry could be quickly set up.

To commercialize the knowhow, the government decided to set up a new public sector corporation under the Department of Atomic Energy (DAE) by "spinning off" about 300 engineers and scientists from BARC's Electronics Division. This group came to Hyderabad led by their leader, Dr A S Rao, an eminent scientist, along with their equipment and formed the nucleus around which ECIL was set up.

BARC, under the leadership of Bhabha, had prided itself as an institution which, by building nuclear reactors without foreign help, showed the capabilities of Indian scientists and engineers. Rao believed in being self reliant and considered any foreign collaboration as not being in the interests of the country (Rao, 1973). This view was shared by the BARC group in ECIL. Indeed, Rao's thinking and values formed the points of reference for ECIL's personnel for their beliefs and actions.

The BARC group also brought BARC's pattern of organization and ways of working to ECIL. New product development was seen as the central mission of the organization and R & D had the pride of place. There was full freedom for personnel to take up any product for development if it was likely to lead to import substitution, and such development was encouraged. But this also-Jed to a situation wherein the technological challenge involved in the development of a product, rather than its commercial viability, became the deciding criterion. Also, non-technical activities like marketing, finance, costing, and budgeting were considered "services" and received far less attention.

Environment of ECIL till 1976

Reduced dependence on foreign technology and import substitution being areas of great concern, the government vigorously supported ECIL which was built to achieve the above objectives. This was so especially in the case of computers which were seen as strategically vital.

The government agency which framed policies in electronics was the Electronics Commission (EC). Its twin, the Department of Electronics (DOE) implemented these policies. These agencies, through deliberately framed policies, protected ECIL from competition both from India and from imports, supported ECIL in its development of products (especially computers), and assisted in finding markets.

ECIL's Pre-1976 Strategy

ECIL's strategy before 1976 had essentially two elements: growth through development of new products and total avoidance of foreign collaborations. Given full freedom, ECIL's personnel took up product development with a missionary zeal. During the 1970-1976 period, ECIL developed a large number of new and sophisticated products, many of them for the first time in India. It developed, entirely with indigenous knowhow, a 12 bit and a 16 bit computer and initiated the development of a 32 bit computer. By 1976, ECIL had about 250 products in its range as against 75 in 1970. However, this growth took place without any focus or direction, with no project being justified in the overall context of the organization, and with no attempt to see their relationship with one another.

Impressive though the achievements were, ECIL's performance had certain major shortfalls which made it vulnerable to changes in its environment. Firstly, its product range in computers was much less than what the market needed. ECIL had basically only two models to offer with limited application capabilities. A microcomputer was introduced in 1976, but this could be used only for scientific applications. Because of their scientific background, the ECIL engineers were much more familiar with the scientific than the business applications of computers and hence both the models of ECIL were developed as scientific computers. With the result, the need of the business segment was not being catered to.

Secondly, since ECIL's development was based on the concept of total self reliance, its computers lagged behind others in terms of price, capabilities, and reliability. In 1976, for instance, the cost of ECIL's TDC 316 was nearly double that of PDF 11 / 34, a comparable computer made by Digital Equipment Corporation of USA. There were very few application software packages in ECIL's machines, especially with regard to its software. Thus, ECIL's products, while having the vir-

tue of being totally Indian in their development, were technologically and in terms of price inferior to those available abroad. Finally, ECIL's clientele, especially in computers, was very narrow, consisting mainly of government departments and DAE's establishments. The narrower customer base made ECIL highly dependent on the continued support of DOE and DAE for its sales. However, the executives at ECIL did not perceive these vulnerabilities from their highly protected position.

Changes in ECIL's Environment

From 1974 onwards, DOE's restrictive import and licensing policies on computers were coming in for severe criticism from the press, Parliament, business groups, and even other government establishments and public enterprises. ECIL's restricted product range was alleged to have led to non-availability of computers for many applications and retardation of the indigenous computer industry and even other industries which needed computers.

As a result of these pressures, DOE was forced to liberalize computer imports. Many of the imported systems were comparable to ECIL's systems. It was becoming clear that it was only a matter of time before the newly emerging companies would also enter the field. Thus, ECIL had to face competition.

The main strength of ECIL had been its knowhow of mainframe computers. But the new companies were turning out computers with microprocessor chips and, though these machines at the time were much smaller than ECIL's mainframes, they were rapidly becoming more powerful. If the experience of microcomputers in US was any indication, they were sure to pose a direct threat to ECIL's 16 bit mainframe system before long.

Manufacturing microcomputers did not involve high technical skills; it was basically assembly operations of components. But selling them involved marketing skills. The user had to be identified and suitable software developed. Besides, the user had to be given service support. Thus, in the new environment, the design and technical skills of ECIL were becoming less critical for success; developing a new product was no guarantee that it would sell.

ECIL's Response

How did ECIL respond to these changes in the environment? We discuss this in two phases: before 1978 and after 1978.

Pre-1978 Response. Even though A S Rao, the founder, was a member of the Electronics Commission frpm its inception in 1971 and was thus fully aware of the changes and the reasons for the changes, he did not make any internal strategic adaptation. His response to changes was largely external, consisting of attempts to influence the environment. He argued many a time with the Secretary of DOE that the changed policies would strike at the very roots of indigenous effort in electronics and pleaded for continued protection. The Electronics Commission and DOE, however, felt that the ECIL had been protected long enough and that policy changes were inevitable.

The changes in the environment had repercussions on ECIL's sales and finance. Order inflows in computers dropped to near zero in 1976-77, sales growth in computers declined from 70 to 7 per cent a year, and profitability declined from 3 to 1.27 per cent.

To enable ECIL to tide over the situation, DOE offered some major projects to ECIL. But these projects were financed by the World Bank and required foreign collaboration as a precondition.

This precondition was not acceptable to Rao and his colleagues at ECIL. They considered it important to preserve the basic value of self reliance on which ECIL had been built, and foreign collaborations would amount to compromising on this value. Hence, Rao rejected the offer. His decision had the full support of the head and other key executives of the Computer Division at ECIL.

Rao believed that enough opportunities existed in projects not requiring foreign collaboration. ECIL managers were, however, not able to book such orders and Rao attributed this to lack of adequate efforts on their part.

ECIL was facing threat from competition as well. Even without licences, the competitors were putting microcomputers in the market for data processing applications (ECIL's computers were suitable for scientific ' applications only). The Computer Division neither adapted its microcomputer for business applications nor produced even their scientific model on a large scale. This was because the executives of ECIL felt that microcomputers involved mainly assembly work and hence had no technological challenge in them, and were therefore "not the sort of things ECIL should be turning out." ECIL stuck largely to mainframe computer manufacture in the belief that microcomputers were essentially small machines that would never pose a threat to its mainframe computer business. Some executives, more familiar with the changes microcomputers were bringing about in the US, tried to warn the top executives of the potentiality of the microcomputers and the danger posed by them, but the warning was ignored.

This strategic "no-change" attitude continued right through 1977-78. ECIL, for the first time in its history, was heading for a loss, the Computer Division being the prime contributor. Rao's reaction, however, was one of withdrawal. Having realized that there would be no change in policies, Rao detached himself from the affairs of ECIL and became nearly inaccessible. His second line managers also could not initiate any policy changes. Thus, the organization entered into a state of paralysis till Rao's retirement in 1978.

Post-1978 Response. After Rao's retirement, S R Vijayakar took over as the chief executive. Though Vijayakar had been General Manager of ECIL from its inception, he was not able to influence Rao to any great extent regarding ECIL's policies, partly because he did not come from B ARC, and partly because his ideas and values diverged sharply from those who came from BARC.

These differences came out sharply in the strategic changes Vijayakar made on his assuming charge. Firstly, he entered into foreign collaborations in selected areas, mainly for those projects involving World Bank assistance or those in which customers needed quick deliveries. This was a move away from ECIL's earlier policy of total self reliance, and was consequent to Vijayakar's belief that foreign collaborations, if entered into with care, could greatly strengthen the technological base of the company and improve its commercial performance. Secondly, he revised the earlier policy of unrestricted freedom to develop new products. A product would be developed only if it made sense commercially. Thirdly, the R&D effort was concentrated in three areas—computers, communications, and control systems — which were considered promising. Fourthly, it was decided to enter the computer market for business applications for microcomputers and mainframes. This would mean meeting the marketing skills of its competitors head on.

Being a public enterprise, Vijayakar had to gain acceptance for his new ideas from its controlling bureaucracy, DAE. By projecting the issue as one of trade-off between self reliance and commercial performance and emphasizing the need for the latter, he was able to gain DAE's acceptance for his new strategy. In fact, the Secretary of DAE had said in a deposition to a Committee on Public Undertakings (COPU) investigating ECIL:

> We did have an awry R&D culture. This is being changed drastically. Now onwards, we have said no to everything until we know how much it fetches us, and how much money we will make (COPU, 1981).

The strategic changes introduced called for changes in the character, methods of working, and values in the organization. ECIL would no longer be the torchbearer of total self reliance. The commercial aspects of the enterprise would be balanced against its value objectives. Managers would be judged not only with regard to their contribution to new product development, but also on the commercial returns.

Results of Strategic Changes

As a result of these changes, ECIL turned around to make a profit of Rs 2.3 million in 1979-80. Its sales also increased from Rs 282 million in 1977-78 to Rs 390 million in 1979-80. The Computer Division's sales increased from Rs 48.5 milliion to Rs 60.4 million in the same period (by 1981-82 the sales of computers reached Rs 100 million).

But there was a price to be paid. With the freedom to develop products being taken away and the scope of R&D in the non-thrust areas being considerably reduced, the R&D function was perceived as reduced in importance, and there was some amount of demoralization among the R&D personnel.

The turnover of the-technical personnel, especially in the Computer Division, increased dramatically after 1978, and at least partly this was due to the low morale during this period. At the same time, ECIL could not build up its strength in marketing, and, in the newly opened EDP market, the new companies reigned supreme. Although the Computer Division managed to break even by 1982, ECIL lost its pre-eminent position in computers and, by 1982, the share of ECIL in the total sales of computers in the country was only 15 per cent. In addition, the Computer Division had no clear set of products in which it could effectively compete: its mainframes were of old design, costly and obsolete, while its microcomputers had nothing to distinguish them from those of its competitors. No new models were under development.

Despite all the efforts of Vijayakar to infuse a "marketing orientation," ECIL continued to be more like a research institution. But without the "research atmosphere," its competence in research also suffered; it came up with hardly any new products through its own R&D after 1978. As late as 1984, Vijayakar ruefully commented that he could not groom marketing personnel. Thus, while the loss of ECIL's earlier identity was swift, there was no alternative identity that could be built.

Interpreting ECIL's Responses

We now look at the responses of ECIL under Rao and Vijayakar through each of the perspectives: the ration-

al-analytical, the cognitive, and the sociological. In particular, we seek to interpret the following aspects of ECIL's responses:

Three major factors during Rao's tenure were:

- Absence of any strategic changes even when con fronted with major changes in ECIL's environment.
- Non-availing of opportunities presented by the en vironment (e.g. projects offered by DOE, the microcomputer market).
- Withdrawal of Rao and his sudden lack of interest in the organization he had built and in which he played a central part.

This made any active reconsideration of the existing strategy virtually impossible.

During Vijayakar's tenure, ECIL faced another kind of difficulty. Vijayakar was unable to change the orientation of the organization from research to marketing thus making the strategic changes introduced not fully effective.

Rational-Analytical Perspective

In this perspective, the absence of strategic changes and non-availing of opportunities in the environment are attributable to lack of information about the environment, defective processing of information received within the organization, lack of analytical abilities in the organization, or incompatibility of a new strategy to the values of key decision makers.

The first two explanations can be ruled out since Rao, being a member of the Electronics Commission, was fully aware of the policy changes and also the circumstances and thinking at DOE that led to those changes. He was also fully aware of the dissatisfaction of customers and the pressures this was exerting. Further, there were clear indications about ECIL's crisis by drop in order flows, sales, and profitability. There were also warnings from some of ECIL's executives about the dangers posed by microcomputers. Yet all this information did not lead to a change in policy.

Lack of analytical abilities in ECIL may not be a valid argument either considering that it had a highly coherent and successful strategy earlier and there were no changes in the top management.

Even in the rational framework it is recognized that strategy formulation is not a purely economic exercise. A strategy has to be compatible with the value systems of its key decision makers (Guth and Taguiri, 1965). But conflicts between values is resolved in this paradigm through a trade-off between values, not through one value overriding all the others (Steinbruner, 1974). Thus, even if self reliance were a dominant value for Rao, this would be balanced against other values like continuance of ECIL's image as a viable organization and a point of reconciliation between values should have been established. But what we see in Rao's approach is the treatment of one value as sacrosanct — even though the very environment that made this value as central to the establishment of ECIL no longer held this value as supreme (contrast this with Vijayakar's approach to the problem as one of trade-offs between two values).

We also do not have any ready explanation for ECIL's non-entry into the microcomputers field which did not involve any question of values, nor do we really gain any understanding about the continuance of ECIL's research culture despite the efforts of Vijayakar.

Cognitive Perspective

The cognitive perspective sees decisions in terms of the cognitive and perceptual processes of the human mind, drawing from cognitive psychology. What matters for decisions is not data themselves but how they are interpreted by the decision maker, and this interpretation is conditioned by the personality and the past experience of the decision maker. Again, due to the mechanisms adopted by the human mind to deal with complex problems, the outcome of the derision making process is also likely to be highly individual specific and may be quite different from that predicted by the rational model.

It is recognized in cognitive psychology that maintenance of consistency and reduction of dissonance are important needs of the human mind (Steinbruner, 1974). Based on one's observations, experience, and reflections, each human being develops certain beliefs which provide a simplifying framework around which new ideas are interpreted. When new data are consistent with these beliefs, these are readily assimilated. But if they are not, a dissonant condition is set up which is overcome only if the beliefs are changed or the data themselves are discarded (Festinger, 1957). The longer the beliefs are held and the more they have been reinforced by past experiences, the greater is the difficulty in altering these beliefs and recognizing the non-applicability of the past data to the new situation. Hence, the human mind takes the easier course — that of simply discarding the new data or reinterpreting them to make them consistent with the existent beliefs through mechanisms like rationalization. The beliefs tend to sustain themselves.

Thus, this perspective explains absence of strategic changes not in terms of lack of information, but in terms of the way new information gets processed in the minds of decision makers. The major features of the way the new information was dealt with a t ECIL — data regarding the emergence of competitors, the potential of microcomputers, changes in the rules of the game this implied, changes in DOE's attitudes — were all reinterpreted to be consistent with the world view or discarded. The microcomputer threat was minimized by posing these machines as too small to pose a threat to ECIL's mainframes. The threat from DOE's liberalization was minimized by seeing it as a mere passing phase that would be over as soon as DOE saw its "error." The indications regarding EGIL's financial situation were discarded as mere fluctuations happening in any business.

This is typical of "theoretical thinking" (Steinbruner, 1974) when a theory is formed in one's mind and new data are either reinterpreted to fit this theory or simply discarded. The theory itself persists unless a violent disturbance comes about which makes the continuation of the theory impossible.

The difficulty is all the greater if the theory has been confirmed in the past — in the form of successes. Thus, ECIL's outstanding performance till 1976 made it more difficult for a new strategy to evolve; and in this sense, ECIL became a victim of its own success. It seemed difficult to believe that a strategy that had been successful would need drastic changes.

From the above analysis, we propose the following:

Hypothesis 1. When an organization has a CEO with one dominant value and a strategy has been evolved with this value as its foundation, the organization is unlikely to make strategic changes when faced with environmental changes that threaten this value unless the CEO changes or a crisis overtakes the organization.

Hypothesis 2. The higher the degree of success the organization has experienced with a strategy, the less is the likelihood of a major strategic change, unless a crisis overtakes the organization.

Unlike in the Cyert and March (1963) or Ansoff (19^5) models, what is needed to trigger a major strategic change is not merely a problem, but a crisis.

When a person with a strong set of beliefs is confronted with threats to these beliefs, he simply withdraws or detaches from the organization as he is unable to face the realities (Kets dc Vries and Miller, 1987). The organization gets into a state of paralysis — as happened with Rao and ECIL.

Hypothesis 3. A CEO with a strong set of beliefs that have been confirmed in the past, and which are threatened by environmental changes, is likely to withdraw leading the organization to a state of paralysis or quit.

In the rational paradigm, we have no ready explanation as to how the strategic perceptions of the two chief executives could be so different, for an essential feature of a rational model is its predictability (Steinbruner, 1974). But the cognitive paradigm explains it in terms of differences in the interpretation of data depending on the past experiences of the interpreter. Each person, based on his experiences, develops some notions of what works and what does not. If a strategic change to a new state Y is congruent with the belief system X of the CEO, it sets up little dissonance and is likely to come about readily. But if X and Y are not congruent, a dissonance is set up and the person would avoid making that change to the extent he can. Thus:

Hypothesis 4. Strategic changes that do not match the CEO's set of beliefs are less likely to come about than those that do.

Thus, using the cognitive perspective, we have been able to gain new insights into the problem of strategic change. But neither this nor the rational perspective explain why the other executives at ECIL did not initiate or suggest any strategic changes or even consider the changes proposed. Why, for instance, did the executives of the Computer Division not develop and introduce a viable business computer in the market when competition had not yet come up? After all, they had the freedom to undertake such development. How did Rao's refusal to accept foreign collaborations gain such wide acceptance in ECIL? Can we simply explain the above by saying that the belief systems of all the key executives were identical? This seems too simplistic and unlikely. Why were Vijayakar's attempts to infuse a "marketing orientation" so difficult to implement?

Let us, therefore, shift our perspective once again and see what the sociological perspective has to offer.

Sociological Perspective,

This perspective sees the top decision maker as part of a social system the organization is, and argues that the leader is not entirely free to act according to his will or preferences; his actions and decisions are conditioned by the social system. The leader infuses values and elicits commitment from the organizational members to achieve organizational goals. When there is a high degree of unification of these values and commitment, the

organization becomes an "institution," lending it a so-'cial integration that goes well beyond formal coordination and control. The organization develops a distinctive character and a life of its own (Selznick, 1957). Actions and decisions of organizational members are based not only on what is rationally the best alternative, but also by their acceptability to the other members of the organization.

The members of the organization also resist changes in the values and character of the organization. Strategic changes that imply such changes in values and character of the organization can be brought about only with difficulty, if at all. A "strategic inertia" develops in the organization. The greater the degree of institutionalization in the organization, the stronger will be the pressure *on* the leader for continuance of the organizational character.

This pressure results in the organization attempting to obviate the need for strategic changes by influencing the environment itself, if it Can. Lobbying with government, influencing customer preferences through advertising, and forming mutually beneficial arrangements with competitors are examples of such attempts.

Viewing through the sociological perspective, we can identify some new barriers to strategic changes that are organization-specific like past history of the organization, its crises, successes, failures, and the existing culture and values in the organization. Strategic changes may not come about even with a change in leadership unless the culture and values in the organization also undergo a change.

Seen in this perspective, the questions left unresolved by the rational and cognitive perspectives lend themselves to an answer. ECIL was not merely a collection of individuals, but a social system with a high commitment to the value of indigenous development of technologically challenging products. Like Rao, the members at ECIL — especially those from the BARC network who occupied most of the key positions in ECIL — saw themselves as pioneers in the development of major electronics products. Microcomputers were seen as not posing any technical challenge and few were interested in their development. Even when some members suggested a different course — and almost invariably those were people not from the BARC network — their views were not considered by their colleagues. The BARC network had strong value systems which rejected such heresy. Similarly, Rao's rejection of foreign collaborations was supported by ECIL's managers to a degree that extended well beyond mere acceptance of authority. Hence we propose the following hypothesis:

Hypothesis 5. In an organization imbued strongly with values (i.e. it is highly "institutionalized"), strategic alternatives that call these values into question are unlikely to emerge. The stronger the commitment to these values, the less is the likelihood of such alternatives emerging.

The likelihood of different views emerging depends on the social system in the organization and the dynamics in the key groups. In ECIL, the social bonding of the BARC group was very strong and group norms about what views were "appropriate" had already developed. When contrary views did emerge, especially from members of the non-BARC group, they were censored or suppressed. Readers familiar with the "group think" phenomenon (Janis, 1972) would recognize the situation readily. We therefore propose that:

Hypothesis 6. If, in an organization, there is a strong social network in addition to shared values, "group think" is likely to occur, precluding the emergence of alternate strategies.

When Vijayakar tried to initiate strategic changes, the strategic inertia of the organization manifested itself as resistance to the changes. The perceived loss of the position of R&D as the most important function led to loss of its identity as a technological pathsetter in the eyes of its executives: ECIL became "just another company/' R&D suffered as a result; the alternative skills of marketing went against the values of the members regarding R&D as their mission. This leads us to the following hypothesis:

Hypothesis 7. Strategic changes that call into question the shared beliefs and values of the members and demand new attitudes and skills consistent with these beliefs and values are likely to encounter strong resistance from the members.

Conclusions

The case of ECIL Clearly points to fundamental barriers to strategic changes: prevalence of strong and dominant values in the organization, inability to see threats from the environment when they go against the beliefs of the chief executive and the key members (strategic myopia) (Lorsch, 1986), past history, and the social system of the organization.

Because of these barriers, strategies may go unchanged for a long time. If the barriers are psychological, the changes may come about only with a change in "the chief executive; the sociological barriers inhibit changes even then, unless a crisis overtakes the organization. Strategic response can not be improved

simply by improving the scanning and analytical expertise in the organization.

What can managers do to minimize the effects of barriers to strategic changes?

Firstly, they should be aware of the dangers of developing their own rigid theories of the world. New data tend to get interpreted so as to conform to these theories which become self-perpetuating. The danger with such thinking is that generally the thinker is unaware of its development. It is easy to confuse rationality with rationalization, and dismiss feasible options offhand as being "unethical" or "unworkable."

Top management can minimize this danger through engaging in open discussions with colleagues and outsiders. Outside members of the board can play a valuable role by questioning established assumptions.

Secondly, top management should also become aware of the dangers posed by a cohesive policy making group. "Group think" can set in. Again, the induction of outside members and appointment of "devil's advocates" can minimize this danger.

Thirdly, we should recognize the strength of the sociological barriers. The leader is faced with the problem of how to devise a new strategy in consonance with the new environment but at the same time docs not demand too drastic a change in the shared beliefs and ways of working in the organization. Even when such a strategy is found — and sometimes it may not exist — a plan for implementing the new strategy will have to be devised so that the transition is gradual.

Fourthly, the ability of an organization to respond to the environment cannot always be enhanced through an improvement of the scanning function or the analytical capabilities in the organization as assumed in literature. Even clear data may be ignored if they produce dissonance in the minds of either the scanners or the decision makers; their analysis may be conditioned by past experience and value systems of key executives. Threats from environment may be especially liable to be missed due to the fact that they directly conflict with the weltanschauung of the decision makers, as compared to opportunities which generally do not.

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