

Organisational Preparations for Innovations

How does an organisation equip itself to encourage innovation. To examine this question, it will be necessary to first determine what facilitates innovation— what are the conditions that innovative organisations create for such work to be carried out. To examine these, I have taken data from two sources: (i) how the top research laboratories, Cavendish or Space research are managed, and (ii) what are the characteristics of high technology industry considering that hi-technology depends more on application of science besides technology, and is open to constant change, and innovation.

Deriving from these sources, six distinct characteristics emerge for innovative work. They are:

- (a) The nature of the goal setting process
- (b) Flexibility
- (c) The process of interaction
- (d) Professional development
- (e) Long-term vision
- (f) The nature of controls

I will enlarge upon these characteristics and later examine the implications of each of these for organisational management.

The Goal Setting

Goals for individuals are set as a result of a complex process. Organisational goals are set such as launching a satellite in 7 years or developing a transistor to provide power. Within this frame the scientist determines his individual

contribution, and sets his individual goals, and works towards them. In setting his goals he receives guidance from peers but no directive from higher management. This becomes the culture of the organisation and through this process a 'best fit' for both the organisation and the individual is found. Influence is exercised through peer relationships and is not hierarchical. When the individual is left free to explore the process of thinking what is best for him to do, and he experiences the freedom to select, a choice is appropriately made in nearly all cases. This process also ensures commitment of the individual to the goal set by him.

Flexibility

The innovative organisation avoids rigid boundaries between functions and departments. Dr Vikram Sarabhai used to recruit several graduates from management and other schools and allowed them to take up projects before they took up specific assignments. Typically, such institutions have weak departmental boundaries and less rigid hierarchical relationships. People are able to shift from one function to another. Rigidity in structure or in movement is avoided. We have found that people make career choices based on their past experience. If the experience ranges over different kinds of jobs, the career choice made by an individual is likely to be one that suits the individual best. This is how rigidity is avoided by increasing mobility.

The organisation generally encourage, what is described as a policy of 'walking around'. Individuals are encouraged to visit and talk to people about what is being done by them as a group and as individuals. This way individuals are able to become a part of the whole rather than remain segmented in their individual locations.

Interaction

New ideas develop through interaction with other persons in the organisation, and not in isolation. A project may be carried out by an individual but support of others is needed at different stages of the project – at conception, review and testing phases, if not in other aspects of the project. Interaction improves the quality of the work done. The interaction is needed with people in the same and in the related fields.

Professional Development

Douglas McGregor had highlighted the fact that the new professional has two loyalties: One to the organisational values and second to the profession.

The two are in fact complementary. Innovative organisations encourage free association with professional groups and interaction with other professionals. There is growing acceptance of the dual loyalty in most organisations; in innovative situations this is actively promoted. Individuals are encouraged to take active part in professional groups and associations. There is also emphasis on updating technical knowledge. In one hi-tech, I found that on the production floor a group of employees were engaged on theoretical discussions with a blackboard and diagrams. This kind of effort encourages individuals to acquire new knowledge, and have an open mind to new ideas. Such an environment promotes innovation.

Long-Term Vision

Innovative organisations have long-term vision. The research being done may not always have short-term or immediate focus; even if it has immediate application, it will invariably have a long-term orientation. In any case, the research must have relative calm, and stability, in its conception. Frequent changes in direction, or the research programme, create instability. What is also important is the vision – the end-result of the overall effort of research. How will it improve the life of the community and whom would it benefit? What is the nature of contribution to knowledge that is being expected from the research work?

The Nature of Controls

A significant difference in the nature of controls in innovative organisations from the traditional is that they are personalised, and they are basically generated from peers and not the higher levels. The quality standards are set by people who are engaged upon research work. The quality is controlled through presentation of research findings in departmental seminars and discussions. Publication is controlled through professional journals. The administration has to generally ensure that these channels operate smoothly and effectively. There is rarely any continuing or day-to-day review of work. No progress reports are prepared for each project. Controls are individualised. There is pressure to keep to schedules and for producing quality research, but these pressures are subtle and largely initiated and managed by peer levels. The administrator is more concerned with the effectiveness of the system, unless action is required to be taken in any individual case.

If these are essential characteristics of innovative organisations, and many of these are found in hi-tech organisations as well, what generalisations are possible for promoting innovation in organisations.

First generalisation is that organisations have to have a long term perspective and a short or medium term goal. These have to be shared by most people in the organisation. Hence the process of evolving or developing a perspective needs a special attention. People in the organisation, or at least the key people, should be involved in the process of setting up the goals. Most people would believe in the goals if the activities, decision on policy and operating matters and in day-to-day problem solving are seen to be consistent with the stated goals and the perspective. Belief in goals by people is necessary for them to generate practical ideas by them.

The second condition is that the organisation has to be flexible. Rules and systems are necessary but results should be valued. Standardisation, uniformity decision primarily guided by precedence, etc. generate mechanical response to performing a job. In this circumstances an individual is less likely to 'think', he will use his motor skills more than personal initiative.

A third condition is that the organisation should have reasonably open boundaries between departments and sections. Individuals should be free to move from one boundary to another and interact freely with others. Ideas come as a result of interaction with others. One may work on a problem on one's own but often talking to other people helps a person to sharpen his own focus and refine ideas.

Fourth the control system should be based on results and in some cases individualised. Suggestions from peers are often more important than from hierarchial channels. The management has to ensure that these channels are open and adequate feedback is available to individuals.

Fifth condition is that individuals have learning opportunities in the organisations. In one factory I observed that the employees had gathered around a blackboard on the work floor to discuss a problem or a concept. The professional loyalties are strong and they have to be encouraged.

There is little doubt that conditions would differ from one situation to another. In whatever form they might find expression, the characteristics identified above are useful for innovation in an organisation.