Proceedings of GLOGIFT 08
June 14-16, 2008
Stevens Institute of Technology
Hoboken, NJ, pp. 63-70

INNOVATION MANAGEMENT, FLEXIBILITY, AND ENTERPRISE- WIDE SYSTEMS: AN EMPIRICAL STUDY

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ABSTRACT

Innovation has been the focus of attention in the last few decades or so as a means to survive in the fast changing, dynamic and highly competitive business environment. It implies that organizations should not only be equipped with well integrated management systems and processes to be able to consistently perform but also be "flexible" in enterprise-wide systems to be able to respond effectively to the dynamics of the environment. The present paper is based on the study conducted in an Indian auto-ancillary company. The organization diagnostics were done by interviewing individually all the management staff and the top management team. Planned action was initiated and implemented over a two year period. The study led us to conclude that the propelling forces of the complex environment led the company to innovate in enterprise-wide systems. Flexibility supported and facilitated in implementing the changes across various functions and finally giving positive advantage in handling the complexity of the environment.

Keywords: *innovation, flexibility, enterprise-wide system, organization change*

Introduction

The place for innovation in economic growth has been well established. Innovative economies have experienced sustained growth (Porter and Scott, 2001). A large number of management literatures give one conclusion; innovation is the key to success in the new millennium (Drucker, 1985; Tretheway, 1998). Companies that are more innovative than others have a system of values and it energizes the individual and collective behavior towards creative endeavors (Prather & Gundry, 1995).This theory has led to identify appropriate systems that stimulate, cultivate and reinforce creative practices.

The innovation management framework encompasses all the key areas that need to be mastered to develop successful products and services, efficiently and continuously. It encompasses not just the key processes but integrates and alliances all the key enterprise systems. The present study aims at identifying the factors of innovation at the enterprise level in the domains of strategy, structure, systems, and people in the auto ancillary industry.

Literature Review

What is Innovation? Drucker (1998) has defined innovation as "change that creates a new dimension of performance". McKinsey's definition of innovation is all pervasive; newness can come from three sources: consumer, producer, and channel. Depending upon the amount of newness and wealth generation, different clusters of innovation emerge: incremental innovations

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– these create products and are basic for survival in the market; step change innovations – these create businesses and can give significant shifts and competitive advantage; transformation innovations – these create industries. McKinsey's study of the top ten companies of the US revealed that all these companies fostered a culture that stimulated innovation. The factors have been synthesized in the groups of leadership, environment, aspiration and processes. The key components to creating an innovation supportive environment are the relentless pursuit of performance, outward looking focus, and learning by doing rather than thinking. On the other hand, companies performing low on innovation were structured and organized with a low will to win, were small and fragmented, inward looking, inflexible, under equipped and had set less challenging performance targets (Kito De Boor, 1997). Innovation thus is to be encouraged at all levels. The CEO plays a very important role (Zangwill, 1993).

Successful innovators look for change; it provides the opportunity to create something different and new. Drucker (1985) has gone further and has postulated that systematic innovation consists of purposeful and organized search for changes. In the systematic analysis of opportunities, such changes might offer economic and social innovation. Systematic innovation requires monitoring internal sources of innovative opportunity: the unexpected – unexpected success and failure; the incongruity – the balance between the reality as it exists and as it ought to be; innovation based on process need; changes in the market and industry structure. There are other sources too that relate to the changes outside the enterprise like demographic changes, changes in perception, mood and meaning. New knowledge, both scientific and non-scientific, trigger companies to constantly attempt to discover new opportunities and make new business models. Successful innovation always had the support of key individuals of high ability and quality, people with entrepreneurial bent of mind and strong commitment. With time, successful models get copied. It no longer remains the company's proprietary property.

To be able to lead, the company must be different and to become different it must think differently about three things – competitiveness, strategy and organization. The company must adopt a strategy that gives the industry evolution, stretching aspiration, and an intellectual and emotional commitment (Hamel and Prahalad, 1994). Though continued improvement in operation and incremental innovation is critical; future growth and improved financial performance of the company is possible only with discovery, development, and commercialization of breakthrough innovations (Pethick and Ciacchella, 1998). This requires adopting an integrative company - wide holistic approach. A number of management actions and attitudes may enhance the likelihood of the creative side of the individual. The environment thus provided will support in developing, motivating and directing the individual creativity in useful ways (Amabile and others, 1996). Rothwell (2002) listed the main characteristics as having overall organizational and systems integration, flatter and more flexible organizational structures, developed databases, electronically assisted product development and external linkages. Integration, flexibility, networking and parallel information processing are the main characteristic features.

An innovation-oriented company requires distinctive management style and enterprise - wide organizational practices that reinforce the creativity in the individual. Kao (1989) has summarized the findings in this area and suggested a number of enterprise - wide actions for execution. These include creating an open, decentralized organization structure; supporting a culture that leverages creative experimentation; emphasizing on effective communication; allocating resources available for new initiatives; providing rewards; promoting culture-supporting risk taking; and minimizing administrative interference.

It therefore may mean that successfully driving innovation requires companies to begin thinking of innovation as a business process that operates within a highly complex and

interdependent business system. The guiding principles that show results may mean setting clear strategic direction; seeking out the "white space"; mobilizing resources and following through zealously. It is unlikely that any company can initiate and maintain an innovation strategy without a dedicated and well positioned leadership. The leader also needs to instill systematic innovation philosophy. The total dimension of innovation involves getting people and the organization empowered to think differently, to be willing to take risk, change and challenge traditional practices, customs, processes and the way business is approached and then to act. Innovation is multi - functional, a sign the industry is moving from one dimensional, stand alone system to subsystems that handle several related functions

Researches have tried to answer the critical question of, "What can be done to improve innovation?" (Cooper and Kleimschmidt, 1987) To structure this, complex process models have been developed. One such model creates a context for managing creativity, for maintaining a customer focus for portfolio management, and for executing programs and technology management. It helps the enterprise in the ways that it matches the appropriate best practices to each of the parts of the model and it approaches innovation as an integrated enterprise - wide system. Innovation management can be integrated enterprise - wide only through explicit strategic direction and leadership, clear focus, adequate resources and effective execution.

Companies need to harness their resources and energy to result in continuous innovation. Existing literature however, does not provide a clear idea of how to do that. Several authors have provided partial solutions suggesting the creation of the organization with separate units pursuing incremental change in the existing business model on one hand and transformational change on the other. It has also been said that the firms should be kept on the "edge of chaos" through improvisation, co-adaptation, regeneration, experimentation and time - pacing. However, application of these ideas has not been detailed out.

Attempts should be made to understand innovation management in relation to enterprise systems and the role of flexibility. Enterprise - wide systems need to incorporate flexibility as no two situations are alike and there is no common solution for all situations. Internal flexibility in enterprise systems will be in a better position to cope with the rapidly changing environmental demands of openness, responsiveness, transparency, versatility, adaptability, and like, without losing controllability thus facilitating innovation management. In the face of fierce competition, it is all the more necessary to show flexibility in approach to quickly adapt to environmental changes and thus gain an advantage over the competition (Liana and Barry, 2000). Flexibility will facilitate in responding to customers, needs quickly and providing broader product range effortlessly. Flexibility is a multifaceted concept with varied connotations (Sushil, 1999). Flexibility is the ability of a system to respond or react to a change with very little time, effort, cost or performance. Flexibility is also the ability to do things differently or do something else if the need arise (Bahrami, 1992). Flexibility means being agile and versatile while being robust and resilient (Sushil, 1997). Flexibility thus is the synthesis or dynamic interplay in the continuum in an interactive and innovative manner with minimum time and effort. Wadhwa and Ali (2003) narrated the flexibility dimensions for e–governance as decision making, information systems, physical systems, human resources, organizational and extended enterprise. Strategic organizational financial information systems and manufacturing flexibility have been identified as corner stones of enterprise flexibility (Sushil, 2000). One popular view of flexibility is to see it along functional management systems - strategic, manufacturing, financial, organizational, IT/IS, technology management, and the like (Sushil, 2000).

To cope with the dynamically changing environment, organizations have to be flexible in developing, adopting and changing strategies, resources and business processes. In that sense,

flexibility can also be defined as the quality of a system which allows it to respond to change effectively (Mandelbaum and Buzacott, 1990). On a similar line, flexibility has been considered as the ability to respond rapidly to internal and external changes (Young and Chan, 1990). Besides, flexibility should be considered within the dimensions of effectiveness and efficiency (Wadhwa and Rao, 2002). Here effectiveness refers to doing the right things and efficiency refers to doing things right. Nordahl and Nilsson (1996) defined flexibility as the ability to respond effectively to changing circumstances. Wadhwa & Rao (2002) defines flexibility as the ability to deal with change by judiciously providing and exploiting controllable options dynamically. Sushil (2000) defines, "flexibility as the exercise of free will or freedom of choice on the continuum to synthesize the dynamic interplay of thesis and anti-thesis in an interactive and innovative manner, capturing the ambiguity in systems and expanding the continuum in the minimum time, cost and effort. The definition deals with options, change and freedom of choice. Thus flexibility may be viewed as the proactive capability of a system to manage change in its environment in an effective and efficient manner (Wadhwa and Rao, 2002).

An enterprise generally competes on the basis of development cycle, time, price, quality, flexibility, fast and reliable delivery, and after sales support for their products. A system may be thought of as a set of interrelated systems. There are systems within systems and these are inter-linked by the flow of material, data, and information for resources. Systems are linked within and with the outside to larger systems therefore change in one produces change in other. Thus the behavior of a system is the sum of the behavior of its parts. Business, manufacturing and supply chains all are examples of systems. Flexibility is an attribute of a system. Sushil (2001) opines flexibility as creating options at various levels in the enterprise, developing ways and means of change across the range of options and providing freedom of choice to various actors in the enterprise to make this change happen with minimum time and effort.

Research Methodology

Research Setting, Participants, and Procedures

The present study is an empirical analysis of the impact of enterprise - wide systems on organizational performance and innovation in an Indian auto ancillary industry. The company under study placed great emphasis on innovations its products and processes. The company's strategy was to built heavily on its ability to develop and build on innovation and improve the efficiency of its operations. The company has been growing at the rate of thirty percent year on year in the industry.

Method of Data Collection

The data was collected from two sources - the employees and the human resource department of the company. Internal documentary sources such as company handbooks, manuals and information brochures were referred. The company employed approximately 600 employees on a fulltime basis covering the categories of worker and junior, middle and top levels of management.

Measurement and Scales

Innovation: Innovation was defined in the company as "aiming towards the development of new technical solutions in product/service and process technology; the commitment to overcome old models and well established practices, and to develop new paths which take opportunity in the positive aspects of change".

The respondents were personally interviewed. An attempt was made to understand the enterprise - wide systems through open ended questions such as: "would like to know about you", "satisfying factors with working in this company" and "dissatisfying factors prevalent in

working here". Besides, the employees were also individually interviewed with the following questions "How to become more effective and efficient?", "How does new growth get created?", "How to ensure that creative ideas are not killed?" etc.

In addition to this, the company had conducted exit interviews with exiting employees in the past. The data from seventeen exit interviews was made available to the researcher for understanding the variables under study.

Efforts were made to understand the company's SWOT as perceived by the senior management group to understand how well equipped the company was to encounter the challenges of competitive pressure and maintain the profit margin and continuing to delight its customers. It was felt by them that the company had the strength of being part of a large group with a distinct brand image, highly skilled staff, a fairly stable workforce with the management always willing to innovate and access far reaching ideas. Rewards were linked to performance. The threat seen by the management was in relation to operating in a market that was at its maturity level, increase in costs, a continuous decrease in operating margin and a highly competitive market. The unknown size of the fit market, market - fertile for innovation in services and products, strategic location of the plant provided great opportunity for the company.

Sample

A total of 123 managerial - cadre employees, and 5 management - cadre employees had gone through the process of individual interviews. Besides, 3 worker representatives were also interviewed. The respondents were from all functional areas in the company such as human resources, finance, product development, sales, manufacturing, engineering, materials, systems, quality and planning.

Practices and Processes in the Company

To understand the practices and processes in terms of employee management, the company's written documents were scanned and relevant material noted. The senior executives of the company were interviewed individually and the approach to dealing with employees was ascertained.

Results and Discussions

The present study focused on innovation at the organizational level as well as the implementation of employees' innovative ideas at the organizational level. Although an employee's ability to innovate may not always lead to the successful implementation of innovative ideas at the organizational level, it often provides a starting point for such innovation. The data collected through interviews was subjected to content analysis to obtain the "satisfying" and "dissatisfying" factors on the job. Similarly, answers to the other three questions, "how to become more effective and efficient?", "How does new growth get created?", and "How to ensure that creative ideas are not killed?" were also subjected to content analysis. This provided information about the enterprise - wide systems.

The factors that were mentioned by at least seventy five percent of the employees were seen as the satisfying/dissatisfying elements prevalent in the company. The others were not accepted for a further follow - up. The satisfying elements were related to the following aspects: the company itself (good name as a group, brand - loyal customers, production output, organizational capability driven by the top management), the work (nature of work, good machinery, good systems scope of work) responsibility (independent work, freedom of work, freedom to take decisions), recognition (professional respect), achievement (delivered results, turnaround the company), advancement and growth (learning opportunity, growth opportunity,

exposure to a variety of jobs). On the other side, the dissatisfying elements covered a long list of rigid company policies and administrative systems (attendance systems, a stringent budgeting systems), supervision (frequent change in leadership positions, no checks loitering in problems with not knowing who to approach), supervisor (lack of understanding), working conditions (bad housekeeping, work place environment). An analysis of exit interviews, though the number was small, supported these findings.

The status with relation to enterprise - wide systems as per content analysis of the other three questions was categorized in the dimensions of strategy (fix dimensions to measure performance and use the same parameter year after year like percentage growth, reduction in cycle time, revenue) , structure (spelling out functional reporting relationships), system (budgetary control, strengthening MIS, competition analysis, financial controls), skill (impart management development training, leadership training), and style (programs to cultivate business excellence). These were then converted again action checklist. This action checklist consisted of factors like reinforcing existing positive aspects, communication about company policy including business plan, salary related concerns, supervision aspects (job definition, introduction of KRA agreement processes, responsibility charting – who will do what and with whose involvement, work related training – skill upgrade, and team building interventions), structure (clarity in reporting relationships), strengthening organization systems (attendance system, mentoring system, reward and recognition system), improvement in working conditions (canteen, hygiene, housekeeping, transport arrangements for employees), factors related to brand image of the company (advertisements, signage, initiating corporate social responsibility activities (tree plantation, community health programs). This action checklist was individually given to the members of the top management team comprising of seven members. They were requested to assign priority - “immediate action” and “action in subsequent phase”. Their opinions were compiled and presented back to them in a structured meeting to arrive at a judicious agreement on the action priority plan, and also get the budget allocated and approved for the actions.

This provided the basis for affecting change. Before starting change at this level a half - day team intervention exercise, away from the place of work, was taken with the senior management group. Everyone in the group felt that this improved the mutual understanding and communication amongst the top management team. Next in line all tasks that were assigned for immediate action were tackled. It took six months to go through the process and implement immediate action changes. Employees were met with individually again to ascertain there perception of the elements taken for change. Almost all the employees felt positive about the resulting effects of the changes.

In the next phase, it was planned and decided to cultivate the habit of personal excellence by educating on this aspect and affecting the feelings and attitudes of the employees. Employees were exposed to a series of eighteen educational classroom sessions for two hours each at regular intervals once a week. The sessions included personal goal setting, knowing one self, interpersonal relationship, motivating self, communication, handling procrastination, teamwork, stress management, time management, assertiveness, handling criticism and the like. The employee’s superior assessed on these dimensions before and after exposure of the programs. The employees themselves were asked to present in an open forum once a month as to how the exposure to the programs brought about change in them, if any. They openly shared how they could now look at a difficult goals like “making a house for the family”, setting difficult goals at the work place improved discipline at work, and cooperation between different departments which had not existed previously. These led to a marked positive improvement in the working of the company.

The company's performance, as viewed through revenue, improved by approximately twenty percent from the previous level. Customer complaints and returns dropped from thirty percent to five percent. The international business partner in its subsequent visit independently observed and complimented the CEO for a marked improvement in the enterprises internal functioning.

This study examined organizational enterprise - wide conditions under which incremental innovation thrived. It was not one or two factors but total enterprise - wide intervention that supported and brought in competitive strength. It also provided evidence to show that enterprise - wide systems - strategy, structure, systems, skill and style are important aspects in developing and encouraging innovative ability amongst the employees. All this could not have been possible if the management and employees had not shown "flexibility" in the mind set and a readiness to change. The CEO played an important role in bringing about change; He championed the process personally.

Implications for Management to Promote Innovativeness

Innovation to propel requires:

1. A dominant business concern, "to excel" (in the present case, the concern to remain at the top in a highly competitive environment).
2. A wide range of formal influences that enable individual employees to examine business concerns from a different perspective.
3. Tolerance to flexibility where the individual can think about the concern and make the right connections.

Give employees the space, flexibility and climate they require to fully exploit their creative potential. Increase the opportunity for chance encounters and casual exchanges, particularly across different departments and locations. Communicate, especially during periods of intense change to avert psychological withdrawal and problems.

Limitations of the Study and Suggestions for Further Work

The present study is a longitudinal study covering a period of two years. Therefore, the study of innovation and enterprise - wide system relationships must be generated over a longer time frame across and many different sectors so as to develop a stronger view of innovation. These limitations not withstanding, the present study provides some insight into the dynamics of fostering and managing innovation.

Conclusions

Top of the line performance would require looking at both – the "sweet" and the "sour" aspects. Sour would mean improving resource productivity by eliminating low return activities, imbibing speed, reducing waste, enhancing revenues and profit per employee. Sweet would involve creating and exploiting new opportunities – new products and markets, building competencies, new resources and organizational capabilities by revitalizing the organization and its people. The perceived congeniality in the working environment supported by the team along with the manager's encouragement and acceptance of an idea enhances one's mental freedom to take bold new steps. This leads to idea generation. It is also seen that innovation may not prosper without appropriate recognition, and rewards and support from the top management.

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