

Innovation by Harmonizing Continuity and Change – A Case

Abstract:

Management of innovation in a firm is a complex process, invariably involving both continuity and change interactions. There is increasing need for a strategy to tide over the opposing imperatives posed by these interactions leading inter-alia to enhanced performance. A case of a leading Indian optical storage media manufacturer has been analyzed in this context using the flowing steam strategy framework. The analysis depicts how continuity and change imperatives are balanced by the firm; besides drawing out the impact on its innovation and overall performance. A strategic framework for the firm to enhance its innovation performance and its overall firm performance has also been attempted. The approach presented may be useful across a range of organizations, with minor adaptations.

1. Introduction

Managing innovation in a competitive environment calls for attention to numerous concerns revolving around the somewhat conflicting requirements of honing of existing capabilities centered on retention of stability versus acquisition of new capabilities in keeping with discontinuous change requirements (Utterback, 1994). There is a need to evolve a suitable strategy to handle this apparent paradox in a firm's context. That the former concern relating to management of continuity is important for business continuity has been underscored largely for three reasons; first from the knowledge management and organizational culture perspective (Collins, 2001), second for stability-restoring and effective recovery management from crisis-laden situations (Ferris, 2002) and third in relation to the impact on organizational inertia (Kim and Mauborgne, 2005). The latter concern focusing on management of change has resulted in several important theories for effective organizational change management processes (Bhat, 2005). In actual practice, both continuity and change dimensions need to be tackled and balanced by firms in order to manage innovation in such a manner that the firm's overall performance is also benefited, apart from its innovation performance.

The objective of this paper is to primarily illustrate how this complex evolutionary dynamics of innovation can be analyzed in a manufacturing firm. Towards this, the impact of continuity and change dimensions of the firm's innovation approach on its innovation performance and the overall impact on firm performance are analyzed.

Economic-based studies that are based on objective measures have posed limitations in terms of being able to capture intangible impacts such as improvement in product and service quality or intra-organization knowledge interaction, which are important in the context of studying innovation management and its performance in organizations. Although economic perspectives of performance do provide, relatively speaking, a higher degree of objectivity, insight into the dynamic process of innovation can perhaps be best captured through a behavioral analysis, which is attempted in this paper. The views of the top management has been used as it an acceptable practice in behavioral research. There is reasonable justification in using perceptual measures, as these measures have been known to correlate highly with objective measures in the context of this paper (Venkatraman and Ramanujam, 1987). In the analysis presented in this paper, perceptual measures have been corroborated with published facts about the company to make the methodology more robust.

2. Brief Literature Review

Review of past studies lead to the assumption that a firm's *technology* (Tushman and Anderson, 1986), *organization* (Barney, 1995), *learning* (Leonard-Barton, 1995), *managerial* (Hamel, 2007) and *networking* (Teece, 2007) processes, largely encompass its innovation management strategic approach.

Technology related innovation processes that are companywide and flexible are inevitably vital for new product development (NPD), as are change processes such as technology alert systems and efficient technology transfer mechanisms (for example,

Tidd et al., 2001). The organization culture and leadership are among important factors that impact innovation, as do motivational systems and creativity infusion efforts (for example, Amabile et al., 1999). Organizations that manage innovation efficiently have effective learning processes and are capable of creating new knowledge (for example, Nonaka and Takeuchi, 1995). The implementation of innovation strategies requires a thorough understanding of the external environment in terms of technology, competition and demand underpinning the importance of a structured strategy with stable processes coupled with dynamic managerial capabilities (for example, Zollo and Winter, 2002). Innovation is a social process that is dependent on interactions of several kinds; these are both internal to the firm and also comprised of its relations with customers, suppliers, institutions, partners, consultants and others (for example, Lundvall and Christensen, 2004). Thus, putting together continuity and change dimensions of each of these five sets of processes results in a comprehensive understanding of the firm's innovation management approach.

3. Approach

A case analysis of Moser Baer Industries Limited (MBIL), an Indian firm and one among the world's large manufacturers of optical storage media, has been taken up with the above view. The flowing stream strategy framework has been adapted to analyze continuity and change aspects of MBIL's innovation management strategy (Sushil, 2005). The significant strategic choices reflected upon relate to the choice of strategic channels opted for by the firm, varying from *divert* for utilizing the strength of existing continuity strengths and diverting them gently towards change; *shift* for extending the burden of

continuity and providing for amenability to strategic change; *partition* for separation of the continuity and change concerns and finally *integrate* aimed towards greatest strategic flexibility.

The broad framework used is depicted in Figure 1 (Sushil, 2009). The ten input innovation management related processes (henceforward referred to as forces) of the firm covering technology, organization, learning, managerial and networking perspectives in continuity and change modes, respectively, impact the output factors comprised in innovation performance and firm performance, as depicted in Figure 1.

(Figure 1 about here)

The case analysis presentation is contained in section four, beginning with a brief background of the firm in section 4.1. The analysis has relied upon both *primary data* and *secondary data*. The primary data covers the present innovation strategy, innovation and firm performance, and future performance aspirations of the firm; it is based on: (i) the responses of MBIL's top management to a structured questionnaire, and (ii) discussions with select company personnel and external experts. The secondary data is based on an extensive survey of secondary sources, covering reports of different independent analysts and consultancy organizations, public databases, expert opinions and research reports, apart from the company's website. Section 4.2 highlights MBIL's innovation management strategic approach based on perceptual measures gathered from the top management of MBIL. Section 4.3 presents the main findings of the analysis of these responses (using the secondary data to *inter-alia* authenticate facts) and section 4.4

derives the most important continuity and change aspects amongst these forces and the key innovation and firm performance factors that have guided the firm's strategy formulation. Section 4.5 is devoted to the landscaping of the strategic factors leading to strategy diagrams for enhanced firm and innovation performance. This is followed by an explanation on the selection of key strategy channels in section 4.6., while a prescriptive methodology is generally not in vogue, some strategy suggestions are contained in section 4.7 for steering the firm towards improved innovation and overall firm performance, by way of illustration of use of the framework by practitioners.

It has been expressed that single case studies do generate large quantum of rich context bound data. Rather than focusing on theoretical advancement and refinement, the endeavor in this paper is to use the data more to provide a practical tool for use by practitioners.

4. The Case

4.1 Background of Company

MBIL is among the world's largest manufacturers of optical storage media. It has transformed itself from a single business entity into a multi-technology organization.

It was initially founded in New Delhi, India in 1983 as a Time Recorder unit, in technical collaboration with Maruzen Corporation, Japan and Moser Baer Sumiswald, Switzerland. Later, in 1988, it marked its entry into the data storage industry by commencing manufacture of 5.25-inch Floppy Diskettes. Over the years, it augmented its capabilities

to include manufacture of 3.5-inch Micro Floppy Diskettes, Recordable and Rewritable Compact Disks, Digital Versatile Disks and blue laser discs. In 2006, MBIL commenced its foray into the Photovoltaic and Home Entertainment businesses and in 2007, the IT Peripherals and Consumer Electronics division was formed. With over 7,500 employees, MBIL has operations in several countries around the globe and is a preferred supplier to several global OEMs.

4.2 Innovation Management Approach of MBIL

The various measures used have been identified through extensive literature references. An in-depth analysis of these measures has been carried out. Each of the ten input forces have been measured in respect of four specific aspects, each of which has been further examined in terms of different details through apt queries, as merited. At times, both the forces refer to a similar aspect (e.g. ‘external interactions’, a continuity force and ‘linkages’ a change force); however, as a continuity force the reference is to an existing approach targeting a planned strategic trajectory as against response to a change need when referred to as a change force. Similarly, while classifying the forces (e.g. ‘supportive organization culture’ as a continuity force and ‘dynamic customer interface’ as a change force), due attention had been paid to the nature of organizational response concerning a measure.

Figure 2 depicts the contour of the forces indicating the level of emphasis given to each force by the firm.

(Figure 2 about here)

The analysis indicates that MBIL's management gives fairly high attention to both continuity and change forces. Thus, the importance of the forces identified through literature has been corroborated. Further, the company's innovation management approach is more or less well-balanced to tackle both continuity and change. Comparatively, there is a slightly lower focus on change in the case of all the forces, except Networking, denoting the company's proactive stance towards *inter-alia* cultivating new suppliers and having a dynamic customer interface.

Firm performance is being linked to four factors: stakeholder (Shareholder, Government, Employee, Management, Local Community, Government, Supplier and Collaborator) satisfaction, resource (financial and human) generation capabilities, reliability (quality and timeliness) of internal processes and the manner in which the innovation goals and the business goals of the company are dovetailed (specificity, relevance and measurability). MBIL's above average financial performance (Return on Total Assets and Average Market Capitalization during 2007-08) was among the criteria used for its selection for this study. Innovation performance has been measured using four factors: firm's innovativeness, NPD capabilities, product/operational process improvement capabilities (lowering cost/improving features/better delivery) and managerial process improvement capabilities.

4.3 Analysis of MBIL's Responses to Continuity and Change Forces

MBIL's strategic approach to continuity forces is analyzed in detail. The company's strong, medium and weak response-related strategic actions are termed as vital, desirable and burden, respectively; highlights are as depicted in Table 1.

(Table 1 about here)

The strategic approach to change forces are classified as high impact, medium impact or low impact on the basis of strong, less strong and weak response; the key results are as presented in Table 2.

(Table 2 about here)

4.4 Key Strategic Factors in MBIL

The key impacting factors that have guided MBIL's strategic responses are now discussed. It is surmised that the company has a well spread focus and does handle its internal processes quite adequately.

All the innovation performance factors are given due attention. It has particularly focused on *improving its production/operational and managerial processes*. It has been *innovative* and has been able to successfully improve the *features* of its products in terms of cost, quality and reliability as well as *delivery/reach* as exemplified by the time-to-time launch of novel products and continuing demand for these across the globe; yet it aspires for further improvement in its *NPD* arena

Its *financial performance* has been impressive, with revenues of the order of USD 100 million recorded during 2008-09. It has managed to tune its *innovation goals* in line with its business goals in terms of *specificity* and *relevance*. However, it does aspire to include more quantifiable aspects to enable better *measurement of innovation targets*. It has not been able to *attract adequate talent* for its innovation needs, but has been able to *raise funds* easily when required. While the *quality of its internal processes* is satisfactory, it is concerned about the *timeliness of its response*. As regards *stakeholder satisfaction*, it does desire to further gratify its *shareholders* in particular, while its *local community* is the most satisfied. Other stakeholders: *suppliers, collaborators, customers, employees, management* and the *Government*; are reasonably satisfied.

The Technology Continuity force responses are strong. Particularly, those relating to *companywide innovation* and *flexible operations* are the strongest. While *idea sourcing and selection* forces are focused upon fairly well, MBIL does need to strengthen its *customer-oriented NPD* forces in respect of honing of its project management system to minimize cost and/or time overruns.

MBIL's responses to Organization Continuity forces are very strong. Its *employee involvement* in innovation is very high and it is very confident about its *organizational culture supportive of innovation*, both of which are vital forces. It does focus reasonably well on *organizational procedures and routines* and *effective leadership* forces.

On analyzing the Learning Continuity responses, it is seen that the firm has expended moderate efforts towards *training, learning from external sources* and *intra-firm knowledge-sharing*. However, it needs to better its focus on *benchmarking and peer-learning* exercises.

The Managerial Continuity interactions are strong. *Top management commitment* and attention on *structured trajectory* are of the highest order and focus on *business-technology strategy link* and *external environment trend tracking* are somewhat effective.

Ultimately, examining the Networking Continuity perspective, MBIL is moderately satisfied with its *use of lead users, external interactions, collaborations with other firms* and *use of external expertise*.

In respect of change forces, there is ample scope for improvement. In respect of Technology Change forces, MBIL *provides for options, strategic partnerships* and *technology alert mechanisms* to a moderate extent. However, its *technology acquisition and transfer mechanisms* force has not been adequately focused upon.

Considering Organization Change force responses, *innovation rewards* and *entrepreneurship/peer-pressure* get average focus. However, in respect of nurturing a *tolerant attitude* and *creativity inculcation*, the response is low.

The Learning Change force responses are more or less low impact ones, except for *use of learning tools*, which evokes moderate response. The other interactions *quick recovery from crises*, *enhance learning capabilities* and *sustained efforts* could be paid more attention.

All the Managerial Change responses are focused upon to an average extent. Thus, *flexible strategy*, *use of effective management tools*, *resources and planning* and *communication* evoke a uniform moderate response.

Finally, the Networking Change force reactions are analyzed. Response to *new supplier use* is very high and those of *external linkages* and *dynamic customer interface* response are moderate. However, attention towards *ideation* could be improved.

Specific relationships among the forces and the factors can be further drawn out if required, as analyzed below:

(i) Continuity Forces-Innovation Performance: MBIL has inculcated a company-wide integrated approach to innovation. Its capabilities to implement process changes and bring about improvements enabled it in assimilating new product technologies and developing upgrades as its manufacturing capabilities graduated upwards. The Company has targeted customer oriented NPD to a reasonable extent. Innovation in the Company is based on its quest to meet these needs. It customizes its products and services to meet the needs of its diverse customer requirements. Bringing about improvement in

production/operational processes is a movement in MBIL. The team spirit that has permeated its entire organization has contributed to this in a major way. It has been possible for MBIL to improve its managerial processes in tune with changing requirements because of its external learning practices. Its adoption of appropriate tools and techniques, abetted by clear organizational policies, has been a major contributor. MBIL has successfully lowered the cost of products/services offered over the years because of its incessant and effective knowledge enhancement systems, internal and external. It has strong external linkages with customers, suppliers and is also developing alliances with academic institutes. The Company has a well-equipped research laboratory that has brought about product improvements. It is committed to value engineering, product quality improvement, cost reduction as well as yield improvement. It has proactively worked in association with customers on product/service improvements. The Company has involved lead users in its product development, such as Imation Corp. of USA for development of removable optical storage media. MBIL's collaboration with major global players has facilitated joint development of product and process innovations.

(ii) Continuity Forces - Firm Performance: MBIL's financial track record has been noticeable, but for a low run during 2008. It has posted a net profit of US\$ 28 million for the first quarter of 2009-10 and an EBITDA margin at 30.1 per cent, as against 15.8 per cent in the preceding quarter and 9 per cent in the corresponding quarter of the previous year. Customer oriented product development has been its forte that has contributed to this, together with its strong innovation leadership. It has been maintaining good relations

with its stakeholders, as it has widespread strong formal and informal external linkages. The Company's innovation goals are focused to meet targeted business growth objectives, sufficient resources are deployed for testing new ideas and a flexible approach is permitted. The Company has attracted the right human resource, because of its efficient HR policy and it has been able to retain the right manpower through deployment of adequate strategic tools. Internal process capabilities have been improved upon, mainly through effective interaction with external collaborators. Other measures include appropriate skill upgradation measures and inculcation of team spirit. Efforts aimed at understanding the customer needs and a clear communication of the innovation road map of the organization, have been important catalysts leading to stakeholder satisfaction.

(iii) Change Forces - Innovation Performance: Reward systems and other motivation mechanisms are used to award innovation efforts. Flexible systems are used to hire suitable manpower, employees are involved intensely in innovation efforts and there is a positive attitude to innovation failures. The Company encourages entrepreneurship and has used peer pressure quite effectively to advance its NPD efforts. However, more tolerance to indiscretions and greater efforts to enhance creativity would further strengthen the organizational responses. There are mechanisms to learn from failures, and also to drive innovation and percolate ideas internally. Appropriate tools, simulation exercises and IT tools are used to enhance performance. Augmenting of systems to ensure business continuity, measures for appropriate sizing of innovation and use of systems to catalyze innovation efforts would help strengthen innovation process performance. MBIL provides for alternative innovation approaches, makes wide use of

experimentation and uses multiple sources for idea generation. It does opt for in-licensing of technology in a systematic manner and has effective new technology sensing mechanisms. It does need to explore out-licensing and spin-off possibilities more vigorously. It has a flexible strategy and an open approach to work allocation. Effective planning and suitable management tools are used and sufficient resources are made available for innovation. The managerial response to innovation is thus very strong. Improvement in managerial processes has been an outcome of the effective interaction with external collaborators.

(iv) Change Forces - Firm Performance: MBIL's strong managerial capabilities have driven its impressive financial performance. A flexible approach allowing sufficient freedom to meet innovation goals has also helped. Suitable systems and procedures enforce speedy implementation of options. Efficient planning and resource deployment are other positive attributes. Customer oriented NPD has ensured innovation goals and business goals are in tune with each other. The close networking with external collaborators has led to the firm aspiring for new business goals, which in turn has driven the setting of appropriate innovation goals, in turn also leading to firm performance. Scanning for out-licensing and spin-off possibilities would further shore up the financial performance of the firm, besides creating scope for new collaborative partnerships. MBIL has been developing relationships with its various stakeholders including the employees, shareholders, its franchisees and dealers, its suppliers, the Government and the public at large; by making efforts to cultivate an effective and dynamic external interface for evoking their confidence and trust.

(v) Continuity Forces - Change Forces: MBIL initially used shift strategy to transform its capabilities in various kinds of storage media towards optical storage media that is the current state-of-the-art technology. Subsequently, it has diversified into different businesses that are widely different, yet maintaining its focus in its original areas of business. Thus, it has predominantly used partition and divert strategies in this expansion phase. The major Change force that has positively impacted its performance is its focus on Networking. Ideas for innovation are captured from several sources. These moves have resulted in an organizational culture supportive of innovation. Technology Change focus is weak, as more opportunities for out-licensing and potential spin-offs need be explored. However, there is continuing focus on customer-oriented new technology development, and a company-wide approach to innovation. The core competence of the organization is well defined, its innovation leadership is strong and speedy decision-making is part of its culture. These strong Organization Continuity responses need to be complemented with a more tolerant attitude to innovation. Managerial focus emerges as MBIL's forte. Its strong management commitment and use of suitable processes generating speedy responses to change needs have both enabled it maintain a strong managerial focus. Learning aspects are not being dealt with strongly by MBIL. Particularly, systematic benchmarking is not being opted for on a periodic basis. Suitable tools could be used to inculcate more creative learning practices and more apt measures for assessing innovation efforts need be deployed.

(vi) Innovation Performance - Firm Performance: MBIL's NPD capabilities, in line with changing customer needs, have contributed to its strong financial performance. The steadfast efforts of the Company to steadily offer improved products over time have contributed to stakeholder satisfaction. The firm's innovation targets are always tuned to meet its changing business priorities. This has ensured availability of resources and top management commitment and unhindered support to pursuit of innovation targets.

Based on the above analysis, key strategy interactions can be drawn out as illustrated in Appendix 1.

4.5 Landscaping Strategic Factors

The innovation performance factors based on the actual situation as against the aspirations of the company are illustrated in Figure 3.

(Figure 3 about here)

It can be derived that MBIL must improve on its benchmarking efforts. As it continues to bring out new products and newer version of existing products, it must not slacken its efforts to lower product costs, improve managerial process capabilities and bring about production process improvements.

Concurrently, it must maintain its firm level performance. It needs to sustain its financial performance by sharpening its innovation goals in alignment with its overall business goals. While it has been able to successfully source the apt talent, it has not always been able to raise adequate funds for its innovation needs. It must continue to improve

satisfaction level of its stakeholders, by bettering its internal process capabilities and improving the speed of its response to external levers. This is illustrated in Figure 4.

(Figure 4 about here)

4.6 Selecting Key Strategy Channels

Use of the four key strategic channels, viz., shift, divert, partition and integrate by MBIL is analyzed by applying the flowing stream strategy. The strategic channel selection matrix in Figure 5 is based on the firm's responses to continuity and change forces.

(Figure 5 about here)

It can be seen that MBIL had initially made incessant use of the *shift* channel, during its early growth phase when it sharpened its NPD capabilities through companywide innovation efforts. Subsequently, it became more ambitious and used the *divert* channel to diversify into new areas such as home entertainment, as well as the *partition* channel to enter blu-ray discs from *shift* channel. Then, it entered IT peripherals, using *partition* channel from *divert* channel. Lately, with its move to launch LCD television sets, it has broadened its business scope by making use of the *divert* channel, from *partition* channel.

It integrated change forces successfully through new supplier use. Its innovation performance was enhanced because of the steadfast enhancement in its managerial capabilities and organization growth, ably supported by its leadership vision lending top management support.

Innovation in MBIL flourished initially along the shift channel. While responding to technology-change forces and the confluence of managerial-change and managerial-continuity forces taking place, effectively leading to a combined-change-continuity organization capability, the company gradually diversified into newer areas. Later it branched off a portion of its successful businesses into newer ventures. Thus, it did adopt A, B, M and N channels. MBIL must now adopt the integrate channels X and Y in addition. It needs to improve on its learning and networking capabilities resulting in overall innovation capability enhancement.

4.7 Suggested Strategic Framework

Putting together the results of the above analysis presented in sections 4.1 to 4.6 with the projected expectations of the company in the next few years; the following strategy suggestions are made to enable its strategic shift towards the integrate path resulting in optimum innovation performance and enhanced overall firm performance:

- MBIL views its top management as being committed to innovation. This may be made more explicit, by effectively communicating targeted quantifiable innovation goals to all stakeholders, giving due justification of alignment with business goals; and revisiting these periodically in step with the pace of change of the specific business.
- Managerial systems may be tweaked for greater efficiency. For instance, the firm may ensure aspects such as intellectual property protection (the firm owns

proprietary technology and has patent licensing agreements with different organizations as well) and knowledge caching are appropriately dealt with.

- The technology areas dealt with being frontier areas, it would be important for MBIL to keep a close watch on related external developments. In addition, higher technological thresholds may be set by the firm to enable it surpass its current performance.
- Project management capabilities are adequate for current operations. However, as the firm aspires to expand its scope in newer areas of business, it may need to ensure projects are completed in time with no cost overruns. New project selection techniques need to be perfected and greater emphasis is required on ensuring a well-rounded participation in ideation exercises, ably complemented by efficient research, screening and analysis. The firm may also tune its innovation appraisal practices and ensure greater efficiency in its innovation leadership.
- Lead users may be more significantly involved in product development. The firm may also make greater use of external expertise and expand its partnerships to leverage its innovation exercises.
- Care needs to be taken in order to preserve the internal culture that is innovation-supportive. The firm may also ensure greater flexibility in its innovation operations.

5. Conclusions

The case of Moser Baer India Limited has been analyzed using flowing stream strategy framework. An attempt has been made to capture important innovation management related processes that facilitate innovation in the context of a manufacturing firm and analyze how these impact innovation performance and overall firm performance. Finally, a set of strategy suggestions for further enhancing the firm's capabilities in this sphere has emerged as an outcome. It may be noted that more of the positive attributes of the firm have been analyzed in depth as these could be more readily authenticated.

The purpose of this paper is largely to illustrate application of an innovation management framework in the context of a manufacturing firm. While only an incremental contribution is acknowledged, the single case study reveals the factors that have been particularly important to the performance of the case company (flexible operations, top management commitment and new supplier use) which corroborates previous research that has indicated the importance of these factors for innovation performance and overall firm performance. These findings need doubtless be further investigated within alternate contexts before a generalization can be done. It is felt that the framework illustrated can be applied with suitable modifications in different kinds of organizations to further understand and enhance the impact of innovation management processes on innovation and firm performance.

References

Amabile, T. M., Conti, R., Coon, H., Lazenby, J. and Herron, M. (1996). "Assessing the work environment for creativity," *Academy of Management Journal*, ISBN 978-0324405361, 39: 1154-1184.

Barney, J. B. (1995). "Looking Inside for Competitive Advantage," *Academy of Management Executive*, ISSN 0896-3789, 9(4): 49-61.

Bhat, J. S. A. (2005). "Concerns of New Technology Based Industries - The case of nanotechnology," *Technovation*, ISSN 0166-4972, 25(5): 457-462.

Collins, J. C. (2001). *Good to Great: Why Some Companies Make the Leap...and Others Don't*, ISBN 0066620996.

Ferris, G. (2002). "Response and Recovery at Morgan Stanley," *Risk Management*, ISSN 1460-3799, 49(12): 24-27.

Hamel, G. (2007). *The Future of Management*, ISBN 1422102505.

Kim, W. C., and Mauborgne, R. (2005). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant?*, ISBN 1591396190.

Leonard-Barton, D. (1995). *Wellsprings of Knowledge Building and Sustaining the Sources of Innovation*, ISBN 0875848591.

Christensen, J. L. and Lundvall, B. A. (eds.) (2004). *Product Innovation, Interactive Learning and Economic Performance*, ISBN 0762311568.

National Knowledge Commission, (2007), *Innovation in India*.

<http://knowledgecommission.gov.in/downloads/documents/NKC_Innovation.pdf>

(accessed December 22, 2009).

Nonaka, I. and Takeuchi, H. (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, ISBN 0195092694.

Sushil (2005). "A Flexible Strategy Framework for Managing Continuity and Change," *International Journal of Global Business and Competitiveness*, ISSN 0973-4619, 1(1): 22-32.

Sushil (2009). "Making Flowing Stream Strategy Work," *Working Paper, IIT Delhi*.

Teece, D. J. (2007). "Explicating Dynamic Capabilities: the Nature and Micro-foundations of (sustainable) Enterprise Performance," *Strategic Management Journal*, ISSN 0143-2095, 28(13): 1319-1350.

Tidd, J., Bessant, J. and Pavitt, K. (2001). *Managing Innovation: Integrating Technological, Market and Organizational Change*, ISBN 9780470093269.

Tushman, M. L. and Anderson, P. (1986). "Technological Discontinuities and Organizational Environments," *Administrative Science Quarterly*, ISSN 0001-8392, 31: 439-465.

Utterback, J. (1994). *Mastering the Dynamics of Innovation*, ISBN 0875847404.

Venkatraman, N. and Ramanujam, V. (1987). "Measurement of Business Economic Performance: An Examination of Method of Convergence," *Journal of Management*, ISSN: 0149-2063, 13(1): 109-122.

Zollo, W. and Winter, S. G. (2002). "Deliberate learning and the evolution of dynamic capabilities," *Organization Science*, ISSN: 1047-7039, 13: 339-351.

Table 1: Strategic Response to Continuity Forces

| Classification | Continuity forces | Strategic Actions of MBIL |
|---------------------------|--------------------------------|---|
| <i>Vital</i> | Companywide innovation | An integrated approach for implementing both new projects and process improvements prevail. |
| | Flexible operations | Flexibility in operations is ensured and deviations permitted (selectively). |
| | Employee Involvement | Team-working and multi-department involvement practiced. |
| | Organizational culture | Supportive organization culture; efforts to propagate sharing and trust taken. |
| | Management commitment | Top management committed to innovation. |
| | Structured trajectory | Managerial tools deployed, core competence well-defined and innovation road-map effectively communicated. |
| <i>Desirable</i> | Customer-oriented NPD | NPD somewhat closely aligned with customer needs. |
| | Idea sourcing | Fairly well-established systems approach used. |
| | Organizational structure | Structure, work-routines and employee-assessment-systems somewhat acceptable. |
| | Innovation leadership | Leaders inspire to a moderate extent. |
| | Training | Employees somewhat regularly undergo training. |
| | Knowledge-sharing | Knowledge capture/transmittal systems reasonably in place. |
| | External learning | Mechanisms for learning from external sources (users, suppliers, partners, institutes and others) moderate. |
| | Strategy link | Business and innovation strategies somewhat closely dovetailed. |
| | Environment tracking | Prevalent to a moderate degree. |
| | External interactions | Mechanisms for tracking customer needs, other linkages moderately prevalent. |
| | Use of lead users | Used to a moderate extent. |
| | Collaboration with other firms | Mechanisms and opportunities fairly in place. |
| Use of external expertise | Sought somewhat regularly. | |
| <i>Burden</i> | Benchmarking | Not done periodically. Employees hardly participate in inter-organizational exchanges. |

Table 2: Strategic Response to Change Forces

| Classification | Change forces | Strategic Actions of MBIL |
|-----------------------|--|--|
| <i>High Impact</i> | New supplier use | Experiments enthusiastically with new suppliers. |
| <i>Medium Impact</i> | Innovation Options | Explored to a moderate extent. |
| | Strategic partnerships | Somewhat proactive in collaborating on potential innovations. |
| | Technology alert mechanisms | New-technology alert-mechanisms being used somewhat effectively. |
| | Entrepreneurship & peer pressure | Employee entrepreneurship encouraged to some much. Peer-pressure fairly used. |
| | Innovation rewards | Somewhat effective motivational measures in place. |
| | Use of learning tools | Used moderately to speed-up learning efforts. |
| | Flexible strategy | Fairly flexible. |
| | Management tools use | Somewhat proactively used. |
| | Resources & Planning | Resource-deployment and planning moderate. |
| | Communication | Communication of innovation goals moderate. |
| | Dynamic customer interface | Fair association with lead users/customers. |
| <i>Low Impact</i> | External linkages | Average formal/informal external linkages. |
| | Technology transactions | Hardly expends efforts to spin-off ideas/ technologies that do not fit its business, or to acquire technology efficiently. |
| | Tolerant attitude | Intolerance towards failures/innovation-experimentation. |
| | Creativity inculcation | Low efforts taken. |
| | Quick recovery | Systems hardly in place to continue/resume normal operations in an eventuality. |
| | Enhance capabilities | Measures for assessing and enhancing innovation capabilities only just exist. |
| | Sustained efforts | Efforts hardly made to identify futuristic practices. |
| Ideation | Less use of open innovation. Few linkages with research/academic organizations . | |

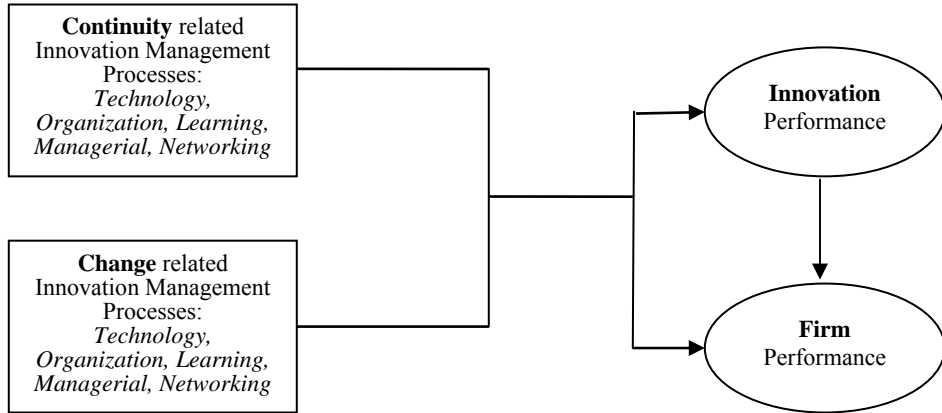


Figure 1:
Impact of Innovation Management Strategy

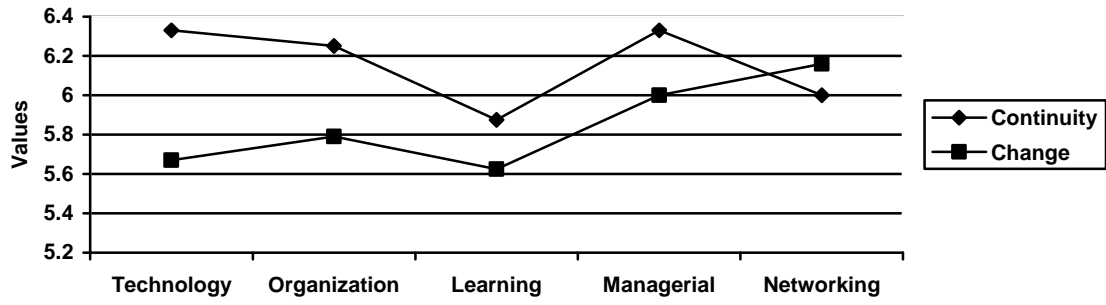


Figure 2:
Relative Importance of Continuity-Change Forces

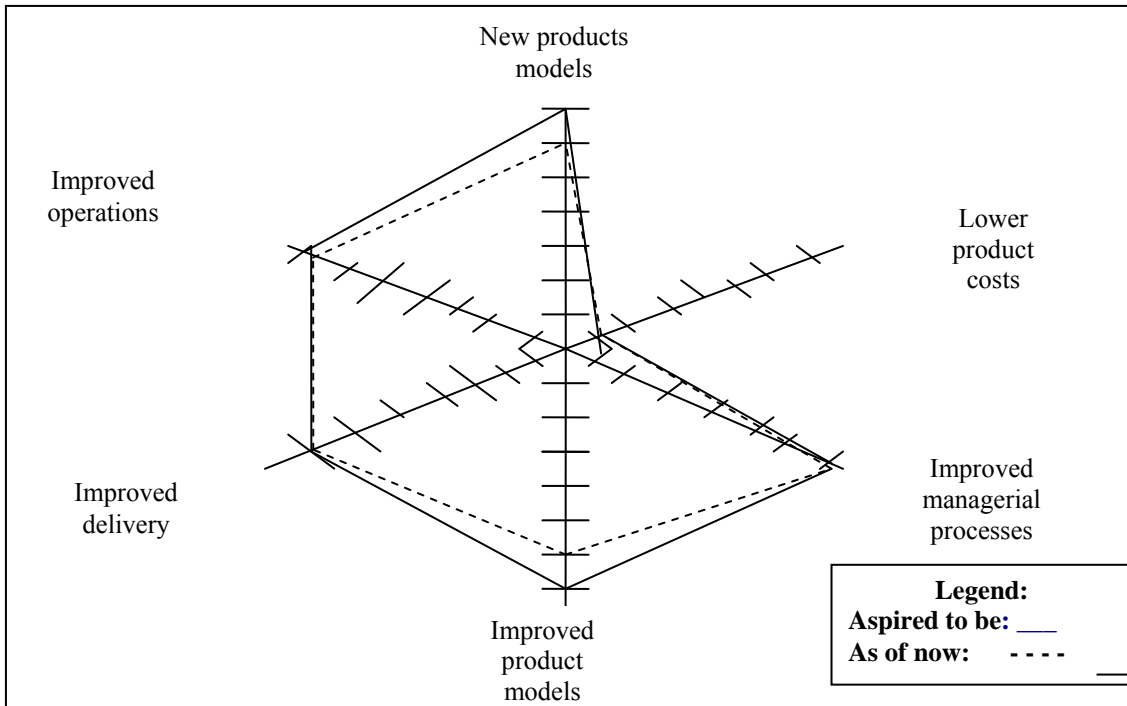


Figure 3:
Strategy Landscape for Innovation Performance

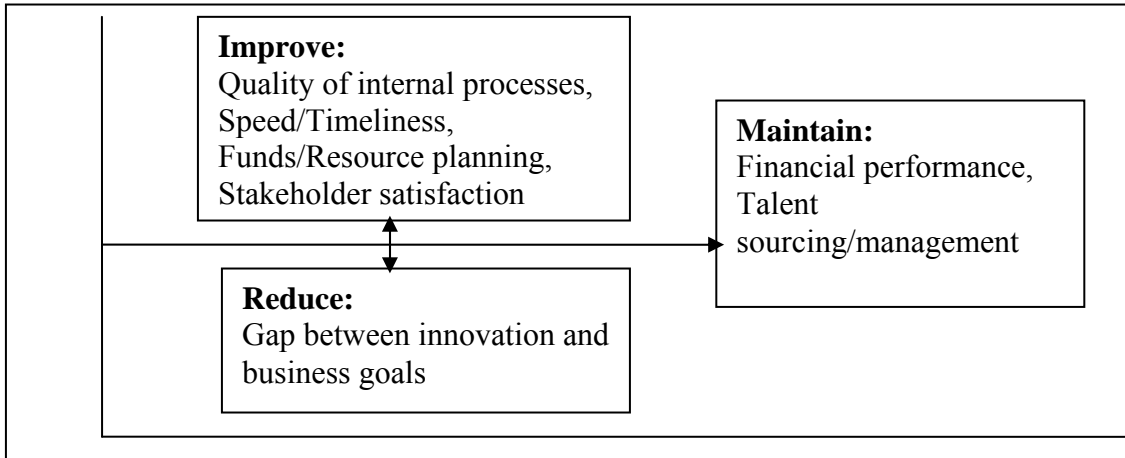


Figure 4:
Strategy Diagram for Firm Performance

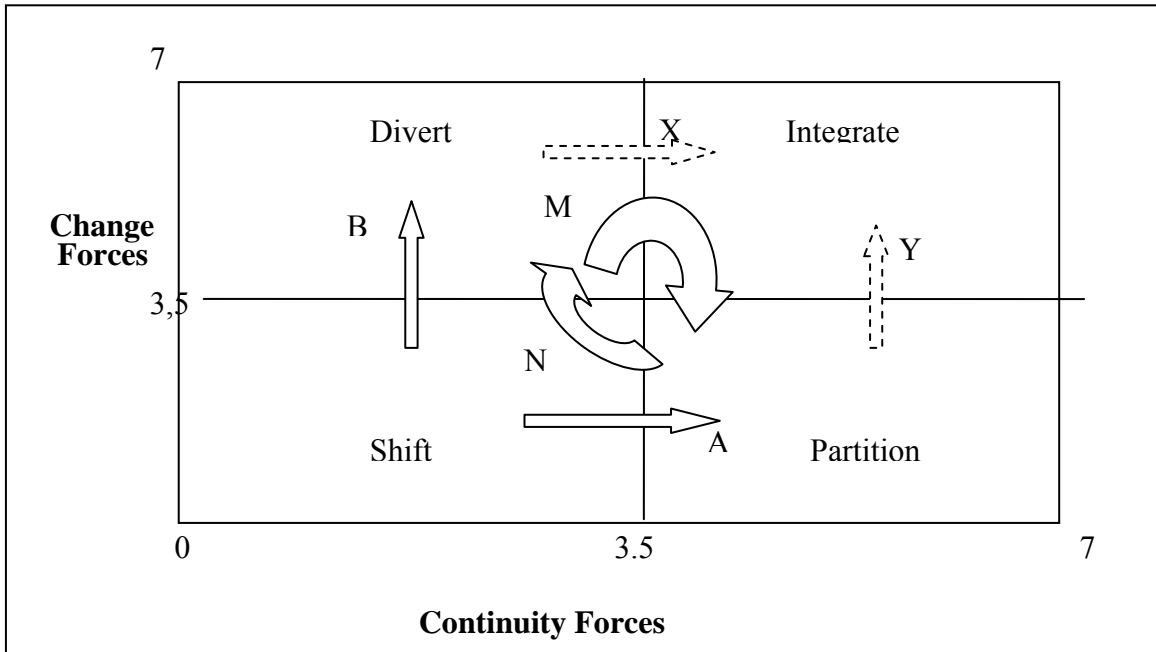


Figure 5:
Channel Selection Matrix

Appendix 1: Key Strategy Interactions (Illustrative)

| Sno | Relationship | Type of interaction |
|-----|---|---|
| 1. | Continuity forces - Innovation Performance | Companywide innovation, Management commitment, External learning, Innovation leadership → New product/service, Production process improvement, Innovativeness, Managerial process improvement Flexible operations, Knowledge sharing → Production process improvement Employee Involvement, External interactions, Training □ Innovativeness Organizational culture → Innovativeness, Managerial process improvement Structured trajectory, Organizational structure, Use of external expertise → Production process improvement, Managerial process improvement Customer-oriented NPD, Strategy link, Idea sourcing, → New product Environment tracking, Use of lead users, Collaboration with other firms → Production process improvement, New product/service |
| 2. | Continuity forces - Firm Performance | Companywide innovation, Customer-oriented NPD, Training, External learning → Process capabilities, Stakeholder satisfaction Flexible operations → Process capabilities, Resource generation Employee Involvement, Organizational culture → Stakeholder satisfaction Adequate procedures → Process capabilities, Resource generation Management commitment, Innovation leadership → Innovation goals, Process capabilities, Resource generation, Stakeholder satisfaction Strategy link, Environment tracking, Structured trajectory, Idea sourcing → Innovation goals External interactions, Use of lead users, Knowledge sharing, Use of external expertise, Collaboration with other firms → Innovation goals, Process capabilities |
| 3. | Continuity forces - Change forces | Employee Involvement, External interactions, Collaboration with firms, Idea sourcing, ⇔ Ideation Environment tracking ⇔ Use of management tools Structured trajectory, Adequate procedures ⇔ Resources & Planning Use of lead users, External expertise, Knowledge sharing ⇔ Alternate innovation processes Organizational culture, Management commitment ⇔ Innovation rewards Customer-oriented NPD ⇔ Dynamic customer interface Flexible operations, Strategy link, Innovation leadership ⇔ Flexible strategy Training, External learning ⇔ Creativity inculcation Companywide innovation ⇔ Use of learning tools, Communication |

Appendix 1/contd.

Appendix 1/contd.

| | | |
|----|--|--|
| 4. | Change forces -Innovation Performance | Innovation rewards → Innovativeness, New product/service Dynamic customer interface, Innovation Options → Production process improvement Flexible strategy → New product/service Creativity inculcation, Communication, Use of learning tools, Ideation → Innovativeness Resources & Planning → New product/service, Production process improvement Use of management tools → Managerial process improvement |
| 5. | Change forces-Firm Performance | Innovation rewards, Use of learning tools, Use of management tools → Process Capabilities Dynamic customer interface, Communication → Stakeholder satisfaction, Process capabilities, Innovation goals Innovation options → Innovation goals, Resource generation, Process capabilities Flexible strategy → Process capabilities, Resource generation Creativity inculcation, Ideation → Innovation goals Resources & Planning → Resource generation |
| 6. | Innovation Performance – Firm Performance | New product/service → Financial performance, Stakeholder satisfaction Production process improvement, Managerial process improvement → Stakeholder satisfaction Innovativeness, Managerial process improvement → Innovation goals |

Note: → Impacts one way, ⇔ Impact both ways