

CUSTOMERS SATISFACTION THROUGH FLEXIBILITY DESIGN: A CASE OF INDIAN DEFENSE PUBLIC SECTOR UNDERTAKING

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***Synopsis:** Today, Customer Satisfaction is mission of most companies. Companies like Dell have made make-to-order products and direct sales their Competitive Advantage in increasing customer satisfaction at a relatively low costs. These aspects of business models have been addressed widely in management literature (Chakravarty and Kumar, 2002). In sectors with restrictive and controlled supply scenario, management research literature is practically non-existent.*

It is observed that Indian suppliers for Indian strategic sectors like defense, space, nuclear etc., are facing different challenges for customers' satisfactions. The sectors are demanding different operational performance parameters of quality and customized delivery. Based on a case based longitudinal research using SAP-LAP framework, research-findings indicate that Innovations on strategic decisions like creative product design, outsourcing, capacity build-up and re-structuring, operational decisions like manpower productivity, equipment productivity and systems improvements with an aim to create flexibility in operating systems (internal) and supply chain system (external), have given rich dividend over the period of more than five years. The creation of flexibility at internal and external levels have been found to help in improvements in quality and customized delivery, thus proving mediating role of flexibility build-up through independent decisions' variables at strategic and operational level. Strategic leadership has also been found to play significant role in such decisions.

Key Words: Flexibility, Strategic Leadership, Customers' satisfaction, Case-Study, Decisions

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1. Introduction

Ford's famous strategy that "you can have any color as long as it is black" is passé now! Today, Customer Satisfaction is mission of most companies. Build-to-order and Value Proposition are two most factors to influence customer satisfaction in today's market. (Chakravarty and Kumar, 2002). The authors have further indicated that design for postponement, outsourcing, dynamic pricing, reactive capacity and information technology help in building capability to increase customers' satisfaction. Some authors have advocated that use of best practices will bring about desired improvements in manufacturing capabilities and customers satisfaction performance. The linkage between manufacturing practices, capabilities and customers' satisfaction performance, however, are complex and not well understood (Skinner, 1969). Strategy integration plays a strong, central role in the creation of capability. It also moderates product-process development, and process quality management practices on certain manufacturing capabilities. In turn capability mediates the influence of strategy integration on customer-based performance (Swink, Narsimhan and Kim, 2005).

Flexibility and Efficiency are paradox corners of addressing strategy formulation and its execution (Adler, Goldoftas and Levine, 1999). Increasing flexibility is a key for efficiently improving market responsiveness in face of uncertainty (Jordan and Graves, 1995). Gerwin (1993) has further categorized flexibility into banking (slack capacity), adaptation (variability as per demand), reduction (by reducing environment uncertainty itself) and redefinition (focusing on flexibility while competing). Choosing how and where to be flexible is a critical issue. Such flexibilities may be defined at two levels (strategic and tactical) (Cannon and John, 2004). The attempts by scholars to make useful prescriptions using these aspects of flexibility on customers' satisfaction remain hampered by fragmented nature of literature on flexibility.

2. Theoretical Foundations

Organizations depend on internal and external environment for resources-labor, capital, technology and customers' demand. Organizational performance depends on matching organizational capabilities with the demand made by customers.

The role of flexibility in meeting customers' variable/changing demand is understood by all academician and managers. However, its creation and build-up still under-developed, especially in a make-to-order environment where though flexibility has been advocated as a

hedging tool against variability in customer orders, its creations and build-up is not well-addressed (Bish, Muriel and Biller, 2005).

In Webster's Collegiate Dictionary, flexibility is defined as "the quality of being capable of responding or conforming to changing or new situations". Flexibility is defined as the degree to which an organization has a variety of managerial capabilities and the speed at which they can be activated to increase control capacity of management and improve the controllability of the organization (Volberda, 1996). The subject of flexibility has been explained by many authors (Sushil, 1997, Sharma, Sushil and Jain, 2010).

Cannon and John (2004) has advocated that organizations can be made flexible in one (or both) of two areas: (1) their ability to absorb stochastic environment fluctuations; and (2) their ability to respond to substantially transformed landscapes. While the former was named tactical flexibility, the later was termed as strategic flexibility.

Strategic Flexibility has been further divided into internal and external orientation (Aaker and Mascarenhas, 1984). Sanchez (1995) has indicated strategic flexibility from resource and coordination perspective, making more internal in focus. Operational/tactical flexibility requires changes which are familiar and often lead to a temporary change in organizational activities. These changes may be internal or external (Oliver, 2001, Papazoglou et al. 2000, Volberda, 1998).

Organizational performance may be measured in a variety of manner. Balanced Score Card (Kaplan and Norton, 1996) is one of such methods. Sushil (2009) has advocated that performance to be managed and required from dual perspective of the enterprise as well as customers.

Strategic leadership primarily means a process by which Chairman, Chief Executive, and top management of any business unit perform the roles of a manager and leader. Key dimensions like decisions at strategic and operational level are the underlying success criteria of leadership. The role of the influence of leadership on external and internal context is also included in the literature of strategic leadership. Climate and effectiveness of leadership linkages has been researched (Håkansson et al., 2008)

3. Theoretical Framework

The literature provides clearly the following frame-work which can be seen in real-life cases. Figure-1 indicates that Strategic leadership who takes timely decisions will be in a position to create and build-up desired flexibility in the organization with a passage of time which ultimately improves customers' performance.

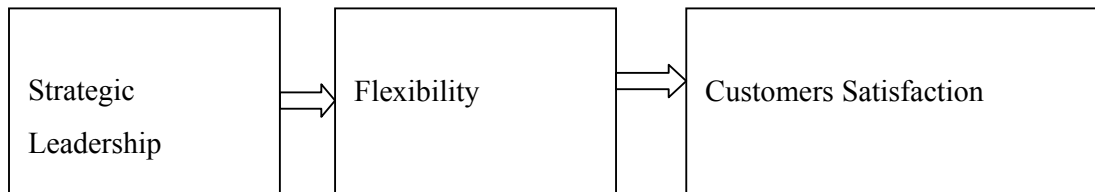


Figure-1: Framework explaining Linkages between Research Variables

4. The Case Study and Research Design

The organization under scrutiny is Mishra Dhatu Nigam Limited (MIDHANI), a national manufacturer of metal parts and components for strategic sectors of the country, which include defense, space, nuclear etc., with an annual sales of more than Rs 400 crores in 2010-11. It operates single location plant primarily on principle of typical job/batch shop. It is best characterized as a process manufacturer in that process-type operations in India. Its melting, refining, forging, heat-treatment and down-stream facilities are equipped to meet part or full requirements of strategic customers. The key concern of customers are delivery as per customized quality and delivery schedule. The final product is often a discrete unit (such as a sheet of metal, length of tube, bar, rounds etc.. Though production process may be converted as a continuous process at one place, capacity constraints often demand operations and strategic decisions at senior levels. The process industry is such that capital investment is comparatively large and roughly 200% of sales turnover/existing fixed assets. However, conversion rates with strategic supply chain partners are feasible due to high contribution margin in complex products.

As there are plants of different size, age and complexity exist in India, the case only takes only one case for study to avoid influence these variables. The sample will help first understanding of interactions between key independent variable (strategic leadership) and mediating variable (flexibility) and performance variable (Customized delivery).

Primary data were collected from April 2006 to March 2011. Collection of data was strongly guided by contingency theory, because primary goal was to elaborate frame work defined above in the case study. Because framework has a strong theory underpinning from the beginning, the study, it is not inductive study but a mechanism to understand theoretical elaboration that emerges from the study.

The case research is expected to deliver the following outcomes:

- To understand theoretical framework, outlined at Figure-1 in real life case and to enhance insight on issue of Customers Satisfaction through Flexibility Design by taking decisions
- To provide guidance for building Flexibility by understanding key factors that influence leadership decisions

SAP-LAP framework has been advocated for better insight through case research (Sushil, 2000, 2001 a, b). A typical SAP-LAP model for case development for core competence and flexibility is presented by Kak and Sushil (2000), which is used for developing six cases in IT and Pharmaceutical sectors.

SAP-LAP framework consists of situation, actor, process, learning, action and performance. The SAP-LAP framework consists of three entities in any context, viz. a situation to be dealt with, an “actor” or group of actors who deal with it and a “process” or processes that recreate the situation. In this framework, freedom of choice lies with the actor. A synthesis of SAP leads to LAP which deals with learning, action and performance. Based on the SAP-LAP framework, one can prepare generic as well as specific models for managerial inquiry and problem solving. These models could be qualitative in terms of critical questions or may employ certain tools, such as quantitative analysis tools, matrix representation etc. The interplay and synthesis of SAP leads to Learning-Action-Performance (LAP). One needs to learn about the situation, actor and process and performance to bring out key learning and action issues of interest. Based on the performance triggered by SAP, learning and action are to be worked out on the fronts of situation, actor or process. Depending upon the effectiveness of such actions on factors of situation, actors and process, performance may be generated in terms of improved processes/actors and better situational parameters. In a business situation, the alliance performance parameters could be multi-dimensional such as

market share, profitability, quality, productivity, competitive advantage, core competence, learning and so on.

SAP-LAP framework with adaptation to AP-P has been used for case analysis. The steps for case analysis using adapted SAP-LAP framework are: understanding situation, actors' decisions, flexibility impact and performance.

5. The Case Study Analysis

The company made a loss in 2002-03. Decisions by leaders helped the company to turnaround in 2003-04. However, in 2005-06, a sales turnover of about Rs 150 crores with Profit After tax of about Rs 12 crores, the company was not confident to sustain profitability. For the company, it has been an unparalleled experiment and a challenge undertaken to create the technological ability for manufacture of perhaps the widest range of advanced metals and alloys anywhere in the world, under one roof.. The leaders of the company took certain operational and strategic decisions that allowed company to go beyond the scope of the original product-mix and developed over 100 grades to meet the felt need of strategic and commercial sectors. Through generation of an in-depth understanding of the Processing - Structure Evolution - Material Performance / Behaviour interrelationships, the company has contributed to solving several daunting technological problems surpassing international standards. The company handled challenging developmental tasks, taking a lead position in indigenisation of critical technologies and products to render support to several programmes of national importance and hi-tech segments of Indian industry.

Strategic decisions allowed the company to start offering building core competence of developing and manufacturing custom alloys tailor-made to suit the specific requirements of customers for their critical applications. The concept of Quality Functional Deployment where-in voice of strategic customers were translated into products, thereafter voice of product was translated into process design and finally voice of each processes into actual operations. At operational levels manpower productivity, equipment productivity and material productivity measure decisions by leveraging tacit know-how of manpower, training in gaps areas and motivational measures. These measures helped in removing internal constrain and allowed to build internal flexibility in the organization.

As capacity of process center was becoming bottleneck, customers' requirement of finished

products started increasing. The leadership took certain strategic decisions to build in-house capacity. In addition, short/term measures were taken to build capacity in required process areas of value chain. These short/medium measures helped in creating external flexibility to respond to customers requirements. At operational level, systems/process of outsourcing was slowing the speed. The same was streamlined by creating a dedicated outsourcing department, effective vendors' management system along with local industry development efforts.

Actors (CMD, Directors and top management) introduced platforms for such strategic/operational decisions. These platforms included regular Production Review Meeting, Corporate Management Committee Discussions, external consultants' inputs etc. Such decisions helped in increasing internal and external flexibility of the organization. Flexibility helped in responding customers' requirement in terms of customized quality and delivery. The performance impact started becoming feasible with increasing order position to more than two years sales level. Actors decisions improved processes that enabled flexibility both internal and external level. Such improvements in processes helped in improving performance to more than Rs 400 crores sales turnover in 2010-11 with four times profit levels. Strategic decisions which are further impacting internal flexibility will allow customers to realize more volume from the company in near future, as state of art new expansion facilities to build process capabilities are under various stage of implementation.

6. Conclusions

It is evident that company needs to address efficiency and flexibility trade-off, keeping its process-customers profile. While Dell needs focus on price/cost, the companies in strategic sectors with differentiation need to address flexibility dimension of operations. Given the fundamental role of leadership decisions in maintaining such a development path, future research might usefully use the same framework in other similar Public Sector Undertaking operation in similar sectors. Another variables such as trust may be also may be examined to find out usefulness in building flexibility amongst various actors and processes may be trust.

Based on case study analysis, we may conclude through figure-2 which explains how interaction between types of leadership decisions and their influence on internal and external flexibilities have been witnessed in the company.

Table-2: Contingency Table Framework explaining Linkages between Decisions and Flexibility

	<i>Internal Flexibility Impact</i>	<i>External Flexibility Impact</i>
Strategic decisions	Quality Functional Design (Customized Product Design) and Expansion Decisions	Strategic Alliances (MOU/LTA/Outsourcing Contracts)
Operational decisions	Productivity Improvements Measures	System/Process Improvements

Future research also should also extend our temporal horizon in the same company. May be over a longer period, such companies may resort trade-off between flexibility and efficiency towards efficiency.

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