



Proceedings of GLOGIFT 07

November 15-17, 2007

UP Technical University

Noida, pp. 767-782

PERSPECTIVES OF FLEXIBILITY AND COMPETITIVENESS IN TELECOM INDUSTRY

Manoj K. Sharma* and Pramod K. Jain**

ABSTRACT

Management literature is full of references emphasizing on flexibility in organizations can enhance corporate responsiveness and can create competitive advantages. The multitude of complexities and dynamic economic environment poses many challenges to organizations trying to formulate and implement strategies that are flexible enough to anticipate and react to the rapidly unfolding changes in this environment. So far, research on flexible organizations has emphasized only the operations management perspective and not the strategy perspective.

This paper presents a conceptual framework of flexibility and competitiveness that suggests considering flexibility at all levels can lead to competitiveness. The framework proposes that flexibility at various levels of organisation i.e people, processes and technology, should be considered as competitiveness enhancing route.

Keywords: Flexibility, Competitiveness, Customer, Internal Business Process, Financial, Learning and Growth perspectives of organisation.

Introduction

Organisation operating in today's economy are experiencing increased pressures due to several factors including a rapidly changing business environment, shorter product life cycles, increasingly demanding and less loyal customers with rapidly evolving preferences, and fiercer competition (Bucki & Pesqueux 2000, Dryer & Gronhaug 2004). These trends are positively favoured by an increasingly global economy, deregulation in many Industry and sectors of economy, and fast developments in information technologies that enable new business models and new forms competition. This is especially the case for firms that operate within an online environment which is characterized by lower switching costs, lower barriers to entry, more substitution threats, quickly changing regulations and increased competition due to lower differentiation and increased geographic reach (Porter, 2001).

Telecommunication is a major infrastructure for development of National economy and it has been recognized globally as a catalyst for competitiveness and investments. Telecommunication sector is witnessing tremendous technical and structural changes coupled with major growth. There are two key drivers of this sector : first, the increasingly flexible policy environment and second, accelerated technological advancements. The liberal policy environment is being achieved through privatization of public telecommunication service

* Director General (Honorary) Global Institute of Flexible Systems Management, New Delhi

** Professor, Department of Management Studies, Indian Institute of Technology Delhi

providers and through introducing competition in this sector. The introduction of competition has changed the industry structure from monopoly to many service providers. Many authors have suggested that privatization has a positive impact on the performance of the telecommunication firms. Telecom sector represents a dominant industry segment which faces major challenges due to its complex structure, and these challenges are further increased due to new business environment and its dependence on technology and knowledge based sectors.

This is the fastest growth of technology ever witnessed,” said Craig Ehrlich, Chairman of the GSMA. “While it took just 12 years for the industry to reach the first billion connections. The second billion has been achieved in just two and a half years boosted by the phenomenal take up of mobile in emerging markets such as China, India, Africa and Latin America, which accounted for 82% of the second billion subscribers.”

Mobile services based on GSM technology were first launched in Finland in 1991. Today, more than 690 mobile networks provide GSM services across 213 countries and GSM represents 82.4% of all global mobile connections. China is the largest single GSM market in the world today, with more than 370 million users, followed by Russia with 145 million, India with 83 million and the USA with 78 million users*. In India, mobile has even become the fastest selling consumer product - pushing bicycles to the number two spot.

By drawing upon the concept of flexibility resulting into competitiveness, a conceptual model is developed to link the characteristics of Telecom Companies providing mobile service and their long-term performance together. Flexibility is viewed as freedom of choice, externally and internally and competitiveness is viewed as a threefold concept comprising the potential, the process and the performance. To remain competitive, an organisation needs to satisfy the four conditions of sustainability, controllability, relativity, and dynamism. The potential dimension is addressed by both the competitive scope and the organizational capabilities of the firm, whereas the performance dimension comprises multiple indicators. Finally, this study points out the needs to further identify the flexibilities leading to competencies so that such companies can compete with the prior awareness of competitiveness in their segment through flexibility route.

The next challenge the mobile telecom is facing is the development of data mobile telecommunications. Technological progress will make it feasible to transmit increasing data rates and therefore provide a wider array of services. The prospective third generation (3G) mobile telecommunications technology represents a substantial innovation, designed to provide new services over the mobile telecommunications network enabled by high-speed data transmission.

New regulations have also enabled virtual operators to enter the industry and thereby increase the competition and further stimulate untraditional co-operation. The mobile telecom industry is rapidly changing and the mobile operators, network operators as well as virtual operators, are facing difficult but exciting challenges. In order to meet such challenges, organizations would require flexibility driven competitiveness and the regulators would also be required to incorporate flexibility in their regulatory mechanism.

Literature Survey

The high growth of telecommunication sector has been mainly because of the well established notion that there is positive high degree of correlation between telecommunication and national development and secondly the felt need of telecommunication technology for holistic growth of the humanity. Beginning in 1960s, published papers of economists categorically cited a

relationship between telephone density and GDP (Mowlana & Wilson, 1990).

Three important studies have been most influential in this regard. The International Telecommunication Union (ITU) in collaboration with the organization of Economic Co-operation and Development (OECD) produced the first set of studies in the late 1970s. The result of the studies, later summarized in *Telecommunications for Development*, focused on the role of telecommunications in the process of development and especially in the development of the rural areas of the world's poor countries (Jipp, 1963).

In 1983 the ITU established the independent Commission for Worldwide Telecommunication Development, also known as Maitland Commission, to recommend ways in which the expansion of the telecommunications across the world could be stimulated. In 1984, the Commission, after studying the earlier works by ITU, OECD, the World Bank and other international agencies, published "*Missing Link*", which embodied its conclusions and recommendations. The Commission's study of the role of telecommunication persuaded its members that "telecommunications can increase the efficiency of economy, commercial and administrative activities, improve the effectiveness of social and emergency services and distribute the social, cultural and economic benefits of the process of development more equitable throughout a community and a nation (ITU, 1984). It is, however, far too evident that both organizational capabilities and market environment shape business strategy and performance, and vice versa (Henderson and Mitchell, 1997).

Flexibility

In Webster's Dictionary, "flexible" is defined as "a ready capability to adapt to new, different or changing requirements." Because of the multitude of choices available to customers, today, flexibility is a key factor in business success. Not surprisingly then, it is suggested that the organizations should offer solutions for isolating, extending and modifying the business rules that drive the processes within digital value chain (Porter, 2001, D'souza, and Williams, 2000). Consequently, much research has demonstrated the importance of flexibility for firms to prosper in turbulent environments (Dreyer & Gronhaug, 2004). Flexibility within a business context is a rather complex concept to define as it incorporates several dimensions (Shi & Daniels, 2003; Dryer & Gronhaug, 2004). Traditionally, flexibility tended to focus on the ability of firms to adjust their manufacturing volumes to varying market demand. However, more recently, the concept of flexibility has been extended to incorporate the ability of firms to develop new products, enter new markets and industries (Dreyer & Gronhaug, 2004).

External Flexibility (EF), Internal Flexibility (IF) such as Financial Flexibility (FF) Organizational Flexibility (OF), Technical Flexibility (TF), Strategic Flexibility (SF) Operational Flexibility (OF) and Market Flexibility (MF) have been identified as the key factors affecting the competitiveness.

Organizational Flexibility

Becoming flexible is becoming imperative for survival. There are several dimensions to becoming a flexible organization including the following: creating a responsive internal environment that can quickly react to any change in the marketplace, planned or unforeseen, a threat or an opportunity. Second, an organization should have variable cost structures to manage costs in proportion to growth of the organization or change in demand. Third, an organization needs to be focused on what is profitable and core to the enterprise's success. Finally, the organization needs to have a resilient infrastructure that is available around the world and round the clock (Phan, 2001). Flexible organizations mandate that business processes are integrated end-to-

end, enabling it to respond with flexibility and speed to any customer demand, market opportunity or external threat (Shi and Daniels, 2003, Sethi and Sethi, 1990). As organizations use real-time information to accelerate an increasing number of business processes, flexibility and adaptability become fundamental requirements for supporting today's—and tomorrow's—business imperatives (Davidson, 1999).

Flexible Workforce

The organization chart of a traditional enterprise had long been defined as a shrinking pyramid with the CEO at the top. The 21st century organization will look like the Web; horizontal, a mesh that connects partners, employees, external contractors, suppliers, and customers in various forms of collaborations. The players will grow more and more independent. Tomorrow's corporations will be virtual, defined not by their location but by their ability to acquire knowledge, organize information, and organize independent contractors and suppliers worldwide. To keep ahead of the steep new-product curve, it will be crucial for organizations to attract and retain the best thinkers. Companies will need to build a deep reservoir of talent - employees and free agents - to succeed in this new era (Amor, 1999, Aalst, 2000). Companies should be flexible enough to employ customer- focused people at every level of the organization and build processes that are simple to execute and flexible enough to change with changing times.

Organisation Flexibility

The need for organization flexibility to accommodate a changing world is well understood. Today's high-velocity and competitive markets apply added pressure to adapt rapidly and perform at high levels. Organization is essentially a systemized whole consisting of interdependent and coordinated parts. Flexibility, however, centers on modification or adaptation. The more systemized and interdependent a group of humans is, the more difficult the change process. Thus, flexible organizations typically have been thought of as having less top down control and more than an individual empowerment. Finally, many present day theorists speak of the importance of possessing the dynamic resources and abilities necessary for rapid and effective action in business activities and decision-making. These action-oriented or kinetic capabilities are presented as essential complements to positional competitive advantages, a view that puts even further demands on the organization. Thus, organizational approaches are cornerstones or kinetic capabilities, and are likely to be of primary importance for certain positional advantages, such as relationships with stakeholders.

Technical Flexibility

Technical flexibility refers to freedom of choice organization possess in terms of technology platforms available. Once the enabling technologies are flexible enough to quickly adapt to a changing market environment, it is important to create flexibility in core processes of technology related business processes.

Flexible Technology Infrastructure

In order to provide the flexibility, scalability and reliability required of mobile telephony services companies need to create a flexible e-business infrastructure. This infrastructure should consist of open interfaces that allow new applications and services to easily connect. The flexible e-business infrastructure should include; universal connectivity through the use of open standards, and integration with internal and external services. Universal connectivity through the use of open standards implies that companies must allow customers, business partners, suppliers, and influencers to have access to systems and applications with a variety of access devices available. Having interoperability to allow sharing or communicating with mixed technologies

across and beyond the enterprise is an important success factor and technology infrastructure should have capability to integrate internal and external services seamlessly. By integrating business applications and data among customers, suppliers, partners and employees, companies can achieve a more effective and efficient e-business model. Enabling integration is accomplished by using open standards-based infrastructure elements in conjunction with an integration, which allows existing application functionality to be integrated with the new application logic (Shi and Daniels, 2003).

Flexibility in Technology

Many studies in the past have shown that organizations can use technology as a resource to gain competitive advantage (Clemons & Row, 1991; Parsons, 1983). Technology, which is the primary force behind the emergence of the new economy, has become not only a means of production but also a main component of service, relationship building, collaboration, and co-existence. In this context, the importance of flexibility in technology cannot be overemphasized. Byrd and Turner (2001) identify several dimensions of technological flexibility such as data transparency, compatibility, application functionality, connectivity, technical skills, boundary skills, functional skills, and technology management. They also observe that flexibility in technology as measured by integration, modularity, and IT personnel flexibility is positively correlated to an organization's innovativeness, mass customization, market position, and difficulty to duplicate. Malhotra (2001) identifies technology flexibility as the ability to cope with the integration of new e-Business applications with the existing brick-and-mortar infrastructures. Such integration entails flawless fusion of enterprise resource planning, supply chain management, and customer relationship management, which is not possible without having integration standards, network capacity, data storage capacity, and processing power. Gronhaug (1999) links technological flexibility with product and services flexibility by using the open-system metaphor (Katz & Kahn, 1966) in which organizations are viewed as input-throughput-output systems. Flexibility in formulating and executing a technology strategy, which is critical to achieving a sustained competitive advantage for firms in the new market environment, must address such issues as: impact of technological change within the organization, impact of technological change on the market, technological changes can exert a huge impact on the market by directly affecting the size and nature of customers, partners/suppliers competitors, and products.

Operations Flexibility

For consistent customer service, applications, customer data must be integrated with different databases and applications (Oliver,2001). The integration of applications, processes and data creates a single view of the customer, prevents discrepancies in customer data, and ensures consistent service of the customer, no matter the channel. In addition, any employee who interacts with customers, no matter where they are in the organization, can access any customer information necessary in order to provide superior service (Papazoglou, et al, 2000).

Strategic Flexibility

Strategic Flexibility, or non-routine steering capacity refers to capabilities related to the goals of the organization or the environment. This most radical type of flexibility is much more qualitative and involves changes in the nature of organizational activities. Strategic flexibility is necessary when the organization faces unfamiliar change that has far-reaching consequences and needs to respond quickly.

Flexibility in Collaboration

Strategic alliances are more likely to involve competitors (Duysters, Kok & Vaandrager, 2000). and Lorange (2002) suggest that the role of inter-organizational cooperation grows in the future due to three broad reasons: regulatory factors, changes in the business and economic environment, and changes in industry practice and strategy. Companies must have flexibility in their alliance strategies to allow them to form quickly and effectively virtual supply chains that may transcend industry and national boundaries overcoming regulatory hurdles. Also, intermediaries need to renew organizational skills, resources and functional competencies to sustain the advantages that they build (Teece, Pisano & Shuen, 1997).

Flexibility in forming strategic alliances must address issues such as:

- The nature of collaboration – As the nature of competition becomes increasingly based on rapidly reconfigurable value chains (Rayport and Jaworski 2001),
- Mechanisms of quality assurance – Digital intermediaries, which assure quality for the company's products and services, should be considered strategic partners because they can play a critical role in building brand image and enhancing customer satisfaction and loyalty.

The capacity of forming collaboration and alliances maintaining a strong brand image is possible only when companies can afford to be flexible in strategies related to the above issues.

Marketing Flexibility

Companies must be flexible in their product offerings because one standard cannot meet the different needs, tastes, and expectations of an increasingly segmented and global customer base. Flexibility, in this context refers to the ability of a company to meet this challenge within the overall framework of its business strategy. The capacity and speed of product innovation is an attribute of such flexibility.

Financial Flexibility

The concept of flexibility has basically developed in the context of manufacturing systems and organizational systems. As regards financial management systems, the need and *raison d'être* of flexibility has drawn increased attention of professionals only in the recent years. New concept in this area real options and their interaction with the financial flexibility of the firm have been reviewed by Trigeorgis (1993). Kaulatilaka (1993) has presented new methods for determining the value of flexibility in project selection and concluded in a case that the value of flexibility exceeds the value of incremental/additional cost. In the concept of financial management Gupta (1983) has aptly underlined the significance of flexibility. The balance sheet can be used primarily for assessing the vulnerability of an enterprise in terms of the strength and flexibility of its financial frame which can be best thought as a kind of constraint ring surrounding the enterprise.

Flexibility in financial management refers to liberation of the financial management from the clutches of the strict normative framework for providing freedom of choice to financial managers. Financial Flexibility can be defined as “exercise of the freedom of choice within the framework of government's monetary and fiscal policies, capital market regulation, investor's risk returns preferences and corporate strategy, evolving financial processes with versatility, adaptiveness and transparency for better resonance with business environment”.(Jain and Sushil, 2000).

The investment decisions will be governed by the growth strategy adopted by the organization and matching of the project with corporate strategies and core competencies . This is further compounded by the inter-play of “financial flexibility” in terms of capital availability, sources of finances and the cost of capital.

Flexibility in capital structure process is concerned with exercise of the freedom of choice to dynamically interplay among the various sources of financial , providers of fund(individual and institutional investors from the country and abroad) and various financial instruments, keeping in the view the conditions prevalent in financial markets, government regulations in vogue and firm's own financial profile.

Flexibility in dividend decisions, being open to various policy options as well as different modes of implementation, provides leverage to the decision-maker in terms of speed of adjustment, taking care of extreme financial position of the firm and the liquidity crisis. This will prove to be more ‘investor friendly’ and thereby contribute towards price enhancement of the share, eventually furthering the value of the firm.

Competitiveness

Firms operating in today's economy are experiencing increased pressures due to several factors including a rapidly changing business environment, shorter product life cycles, increasingly demanding and less loyal customers with rapidly evolving preferences, and fiercer competition (Dreyer & Gronhaug, 2004). These trends are motivated by an increasingly global economy, deregulation in many industries, and fast developments in information technologies that enable new business models and novel forms of collaboration and competition. This is especially the case for firms that operate within an online environment (such as Mobile Telephony) which is characterized by lower switching costs, lower barriers to entry, more substitution threats, quickly changing regulations and increased competition due to lower differentiation and increased geographic reach (Porter, 2001).

‘Competitiveness’ originated from the Latin world, *competere*, which means involvement in a business rivalry for markets. In business parlance, the term can be simply as the ability to compete. Competitiveness is a complex, multidimensional and relative concept. It is linked to a large number of interdependent variables, thus, making it difficult to sense and define it. Defining and measuring competitiveness is itself a research challenge. So is measuring competitiveness, it is being relative concept without bearing any direct relationship with economic performance indicators. Competitiveness has been dealt with by coining two separate but related concepts viz., comparative advantage and competitive advantage. Competitiveness advantage corresponds to the notion of firm specific assets and describes the proprietary elements of the firm that determines what activities it should undertake and what distinguishes it from its competitors. The real difference between these two terms in existing literature seems to lie in their levels of analysis. While the literature on comparative advantage deals with the issue of competitiveness of nations and their industries, writers on competitive advantage are more concerned with firm level.

The competitiveness has been getting importance in the USA toward the later half of the 20th Century. Declining competitiveness of USA in the early 1980s can be attributed to macroeconomic factors. The firm level behavior is strongly influenced by macro economic factors. For example, short-term profit orientation of US firms in this era resulted into high cost of capital due to low private saving. The rising competitiveness of Japan in international trade was inter-linked with macro-economic factors, such as long- run productivity growth, higher savings and investment rates, governments emphasis on quantity and quality of education

and investment in public infrastructure (Baumol and McLennan, 1985). Some authors (Vernon, 1966; Krugman, 1983, 1986; Porter, 1990) have argued that while factor advantages were important in the 18th and 19th centuries, economies of scale, technological change, comparable factor endowments, cheaper transportation costs and inflow of foreign capital and other factors have pushed firms towards factor exploiting advantages of multiple nations, thus leading to the emergence of a large number of multinational firms. Some writers (Borras et al., 1983; Tyson, 1988, 1992) have given prominence to the role of the government. It is noteworthy to see that in NICs (newly industrialized countries), governments have nurtured infant industries and shaped competitiveness of firms in these industries to gradually enter the global market and gain prominence. The market promotion policy of the government has been focused on those industries that have spill over effect over entire economy because of 'linkage externality' (Krugman, 1987) and on which the future competitive success of various industries depend (Tyson, 1988).

Competitiveness is also defined as the accumulation of competitiveness of firms operating in nation's boundary cutting across industries or group of industries (Chesnais, 1986 in Papadakis, 1994). Researchers have conceptualized firm level competitiveness as competitive position of a firm vis-à-vis its competitors in international markets. This is determined by three sets of interrelated factors, namely delivered costs. Product characteristics and users' perception about the match between a product/ service and their needs, which has been measured by factors like cost and quality of product/services, speed of delivery, brand image, etc. or a composite factor. Porter argues that the role played by comparative factor advantage are there but there exist competitive industries in many countries not endowed with comparative advantage in the relevant factors (Porter, 1990). Classic example of this argument is Japan. Some writers (Hays and Wheelright, 1983) attribute the competitiveness problem and challenges of US to micro (firm level) developments, such as lower emphasis on manufacturing and operations, product and process innovation, short-term orientation of corporate managers and less emphasis on technology development.

Balanced Scorecard

The information age organization operates with integrated business processes that cut across traditional business functions (Brady,1993). The strategies for information age organizations, however, can not be linear or stable. Today's information age organization operate in more turbulent environments and senior managers need to receive feedback about more complicated strategies. In such constantly shifting environments, new strategies can emerge from capitalizing on opportunities or countering threats that were not anticipated when the initial strategic plan was articulated. Frequently, ideas for seizing new opportunities come from managers farther down in the organization (Simons,1994)

The balanced scorecard provides front-end justifications, as well as focus and integration for continuous improvement, reengineering, and transformation programs. As we stand today, the financial aspect of business unit performance has been highly developed. Many commentators, however, have criticized the extensive, even exclusive use of financial measurements in business

The strategy is a set of hypothesis about cause and effect. The measurement systems should make the relationships(hypothesis) among objectives (and measures) in the various perspectives explicit so that they can be managed and validated. The chain of cause and effect should pervade all four perspectives of a Balanced score Card. In similar vein, recent work in the service profit chain has emphasized the causal relationship among employee

Perspectives of Flexibility and Competitiveness in Telecom Industry

satisfaction, customer satisfaction, customer loyalty, market share and eventually , financial performance (Heskett, 1994).

Many organizations are now actively trying to lower their selling, general and administrative expenses (Mintz, 1994). The success of these efforts can be measured by tracking the absolute amount of these expenses or their percentage to total cost or revenue. Recent research has indicated that just scoring adequately on customer satisfaction is not sufficient for achieving high degrees of loyalty, retention, and profitability. Only when customer rate their buying experience as completely or extremely satisfied can a company count on their repeat purchasing behavior. (Jones and Sasser , 1995). For the Internal Business process perspective, managers identify the processes that are most critical for achieving customer and shareholder objectives. Typically, cost, quality, throughput and time measures would be defined and measured of these processes. Unless one can outperform competitors across the board on all business process, inequality, time, productivity, and cost, such improvements will facilitate survival, but will not lead to distinctive and sustainable competitive advantages (Cooper,1995)

The balanced scorecard stresses the importance of investing for the future, and not just in traditional areas for investment, such as new equipment and new product research and development. Organization must invest in their infrastructure- people, systems, and procedures- if they are to achieve ambitious long-term financial growth objectives (Kaplan & Norton, 1996)(Figure. 1) and additional approach ,suggested by Beer M. et. al (1996), based on his strategic human-resource-management research, is to substitute text when measurements are undeveloped or unavailable.

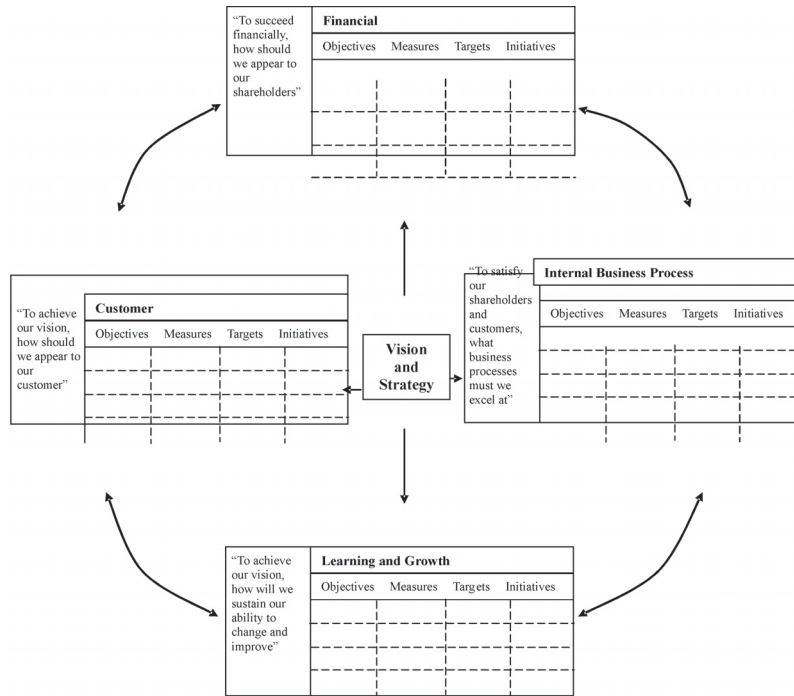


Figure 1: Translating Vision and Strategy: Four Perspectives

Source: Kaplan & Norton (1996), HBR (Jan.-Feb.) , p.76

A Typical mobile telecom service provides can be shown as in the following Figure 2:

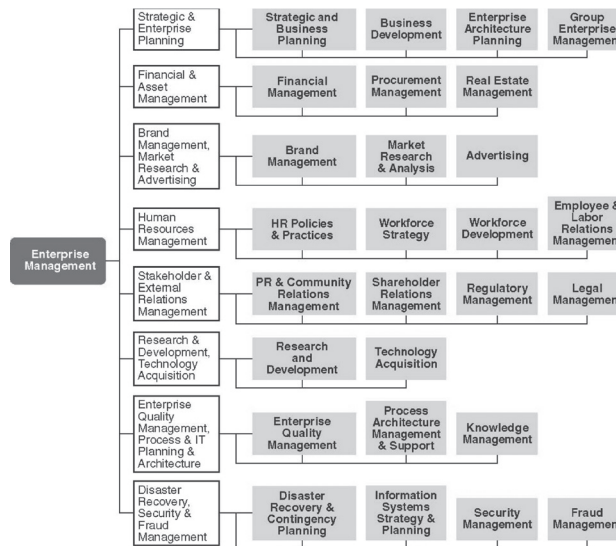


Figure 2: Enterprise Management Process

Source: exp – Volume 2- n. 4 – December 2002) , p.33

Objectives of the Proposed Framework

The objective of this paper is to evaluate the flexibility and competitiveness of the Mobile Telecommunication Service Providers (Firms) in Indian telecom industry using various tools and frameworks and learning from the success case studies and identification of issues and problems of the industry; specific objectives of the study are as follows:

1. To develop measures of various components of flexibility and competitiveness.
2. To assess the status of flexibility and competitiveness in mobile telecommunication service provides in Indian context within the larger macro Asian perspective.
3. To develop a model interrelating various flexibility and competitiveness indicators.
4. To interpret the validation model in 'case' situations for developing implementation guidelines for incorporating flexibility in various strategic domains of organization in particularly mobile telecommunication service provides

Issues to be Covered

In particular, the study addresses the following issues:

- Identifying the various flexibilities which are existing inside and outside of the organization which have strong influence on competitiveness of firms.
- Identifying the factors affecting various flexibilities (external and internal) for the firms.
- Identifying the factors which act as enablers and enhance the flexibilities of firms.
- Identifying new elements of competition
- Identifying the organizational factors that act as drivers or determinants in the enhancement of competitiveness of firms.

Scope of the Study

The study examines the issues related to flexibility and competitiveness and the modalities of competing in emerging industry segment in Telecom sectors (Mobile Telecommunication Service Providers operating on GSM and CDMA technology platforms) . The study also applies the synthesis of the findings and specific recommendation have been evolved. The study does not focus on other Telecom Sector and it encompass only mobile telecommunication segment operating in Telecom sector with macro Asian perspectives and micro Indian perspectives. The focus of the study would be to show directions to compete these industries in their business areas by incorporating competitiveness through flexibility.

Proposed Conceptual Framework for the Study

The proposed framework for the study on flexibility and competitiveness , considers various flexibilities of the organization. It further proposes that the resultant flexibility affects the overall competitiveness of the organization manifested in four perspectives of the organization as shown in Figure2.

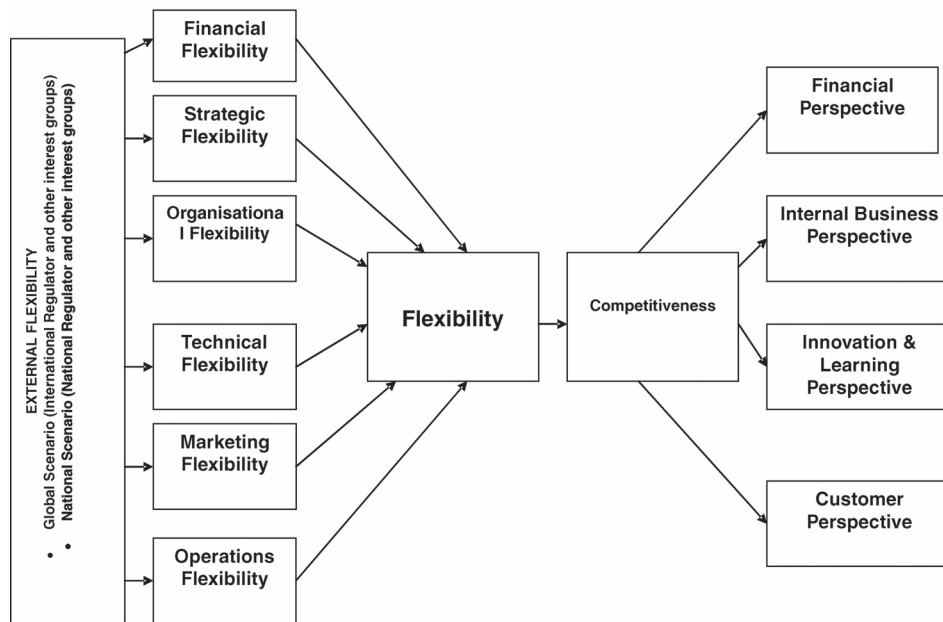


Figure 2: Conceptual Framework for Flexibility and Competitiveness

The important variables in the conceptual framework are as follows:

External Flexibilities

This relates to external dimension of the strategy that ensures the ability of an organization to grow despite insecurity and turbulence and capitalize on emerging opportunities while maintaining a focus on existing customer, market and suppliers. This type of flexibility also originate from regulatory mechanism from the regulators and government departments of the country dealing with the industry segment. This flexibility is also affected by International scenario / Global regional scenario/ Own country scenario in terms of technology available, integration of international regulators and global service provider in mobile telecommunication sector.

Internal Flexibilities

These flexibilities are related to the internal dimension of the strategy. The creative, innovative, capabilities for quickly recombining and redeploying resources and competencies. Internal flexibility of the organizations ensures not only the different organizational sub-units and linkages continue to work together efficiently even while the organization renews itself for the new operations, market or customer. The following are the internal flexibilities taken up in the proposed framework.

- Strategic Flexibility
- Organizational Flexibility
- Technical Flexibility
- Marketing Flexibility
- Operations Flexibility
- Financial Flexibility

Competitiveness Perspectives of the Organization

- Financial Perspective
- Internal Business Perspective
- Innovation and Learning Perspective
- Customer Perspective

Conclusions

The main theme of this paper is that flexibility need not be only considered only in processes but throughout the enterprise in people, processes and technology in various forms of flexibilities. Based on the framework presented in this paper, we convey that flexibility incorporation is required for enhancing competitiveness. Therefore, further research is required to measure various perspectives that indicates enhancement of competitiveness of telecom service provider.

This proposed framework a comprehensive industry level framework for telecom industry catering to mobile telecom services. The framework is not intended to be prescriptive about how the various processes are carried out, how a telecom service provider is to be organized or how the tasks are identified in any single organisation belonging to mobile telecom service provider.

The one of the strengths of this proposed framework is that it can adopted at enterprise level by allowing a service provider to enhance their competitive positioning by following multi-flexibility routes.

References

- Aalst W. (2000) Loosely Coupled Inter-organizational Workflows: Modeling and Analyzing Workflows Crossing Organizational Boundaries, *Information & Management*, 37(2), 67-75.
- Abbot A., and Banerji (2003), Strategic Flexibility and Firm Performance: The Case of US Based Transnational Corporations, *Global Journal of Flexible Systems Management*, 4(1,2), 1-12.
- Amor D. (1999) *The E-Business (R) Evolution: Living and Working in an Interconnected World*, Prentice-Hall.
- Barlett and Ghoshal (1989), *Managing Across Border, the Transnational Solution*, Harvard Business School Press, Boston, MA.

Perspectives of Flexibility and Competitiveness in Telecom Industry

- Baumol and McLennan (1985), *US Productivity Performance and its Implications, Productivity Growth and US Competitiveness*, Oxford University Press, New York
- Beer M., Eisenstat and Biggadike R. (1996), "Developing and Organisation capable of Strategy Implementation and Reformulation, "in *Organizational Learning and Competitive Advantage*, Sage, London.
- Byrd, T. A., & Turner, D. E. (2001), An exploratory examination of the relationship between flexible IT Infrastructure and Competitive Advantage. *Information & Management*, 39, 41-52.
- Bhandari G, Bliemel M, Harold A and Hassanein K. (2004) Flexibility in e-Business Strategies: A Requirement for Success , *Global Journal of Flexible Systems Management*, 5(2,3), 11-21.
- Blaine (1993) Profitability and Competitiveness: Lessons from Japanese and American Firms, *California Management Review*, Fall, 3 (1), 48-71.
- Borrus (1983), *Trade and Development in the Semiconductor Industry: Japanese Challenges and American Response, American Industry in International Competition*, Cornell University Press. Ithaca, New York,
- Bucki J. and Pesqueux Y. (2000) Flexible Workshop: About the Concept of Flexibility, *International Journal of Agile Management Systems*, 2(1), 62.
- Byrd, T. A., & Turner, D. E. (2001). An exploratory examination of the relationship between flexible IT infrastructure and competitive advantage. *Information & Management*, 39, 41-52.
- Chesnais (1986) in Papadakis (1994), Did (or does) the US have a competitiveness Crisis? *Journal of Policy Analysis and Management*, 13 (1), 1-20.
- Clemons, E. K. (1991). Competition and strategic value of information technology. *Journal of Management Information Systems*, 7(2), 5-8.
- Clemons, E. K., & Row, M. (1991). Sustaining IT advantage: The role of structural differences. *MIS Quarterly*, 15(3), 275-292.
- Contractor, F. J., & Lorange, P. (2002). The growth of alliances in the knowledge-based economy. *International Business Review*, 11: 485-502.
- Cooper R.,(1995)in *When Lean Enterprises Collide: Competing through Confrontation*, Harvard Business School Press,Boston:
- Correa C. (1993), *Produccion y Comercio de Telecom en America Latina, Zagier and Urruty: Buenos Aires.*
- CRIS-INFAC's (March 2003, *Cellular Services Annual Review*
- D'souza, D.E and Williams, F.P. (2000). Toward a Taxonomy of Manufacturing Flexibility Dimensions. *Journal of Operations Management*, 18(5), 577-593.
- Dataquest (India) (1998) *Made in America*, Cambridge, MIT Press.
- Davidson W. (1999) *Beyond Re-Engineering: The Three Phases of Business Transformation*, *IBM Systems Journal*, 38(2/3), 485-499.
- Doz and Prahalad C.K. (1987), *The Multinational Mission*, The Free Press. New York
- Dreyer, B., & Gronhaug, K. (2004). Uncertainty, flexibility and sustained competitive advantage. *Journal of Business Research*, 57, 484-494.
- Duysters G., Kok G. and Vaandrager M.(2000), *Crafting Successful Strategic Technology Partnerships*, *R & D Management*, 29(4), 343-351
- Economist (1994), *The Third Age: A Survey of the Computer Industry*, September 17, *Special Supplement*, London
- Enderwick (1995), The International Competitiveness of Japanese Service Industry, *California Management Review*, Winter, 23-42.
- Francis (1992), The Process of National Industrial Regeneration and Competitiveness, *Strategic Management Journal*, Winter Special Issue, 61-78.
- Grewal R. and Tansuhaj P. (2001), Building Organizational Capabilities for Managing Economic Crisis: The Role of Market Orientation and Strategic Flexibility, *Journal of Marketing* , 65,67-80.
- Gronhaug, K. (1999). Technological flexibility and organizational buying strategies. *European Journal of Purchasing & Supply Management*, 5, 13-22.
- Gupta, LC, *Financial Ratios of Monitoring Corporate Sickness: Towards a More Systematic Approach*, Oxford University Press, New Delhi (1983).

- Hamel G. and Prahalad C.K.(1993), *Strategy as Stretch and Leverage*, HBR, 77 (2), March – April, 75-84.
- Hays and Wheelright (1983), *Restoring our Competitiveness Edge: Computing through Manufacturing*, New York, John Wiley and Sons.
- Heeks R.B. (1996), *India's Telecom Industry*, Sage Publications, New Delhi.
- Heeks (1999), Telecom Strategies in Developing Countries, *Development Informatics Working Paper Series, Working paper no. 6*, Institute for Development Policy and Management, University of Manchester, Precinct Centre, Manchester, M13 9 GH, UK.
- Heeks (2000), Myths of Telecom Development in Developing Countries, *Development Informatics Working Paper Series*, Institute for Development Policy and Management, University of Manchester, Precinct Centre, Manchester, M13 9 GH, UK.
- "Implementing the Balanced Score Card at FMC corporation: An Interview with Larry D. Brady," *Harvard Business Review (September-october 1993): 143-147*
- Heskett J., Jones T, Loveman G., Essar E., and Schlesinger L., 1994 "Putting the Service Profit Chain to Work," *Harvard Business Review*, March-April, :164-174
- International Telecommunication Union (ITU), (1984), *The Missing Link*, Report of the Independent (Maitland) Commission for Worldwide Telecommunication Development, Geneva, pp. 1-28
- Jain P.K., and Sushil (2000), Financial Flexibility for Corporate Performance, in *Cornerstones of Enterprise Flexibility*, Global Institute of Flexible Systems Management, Vikas Publishing House, New Delhi.
- Jipp, A. (1963), "Wealth of Nations and Telephone Density," *Telecommunication Journal*, Vol. 30(1), 199-201
- Jones and Teece (1998), *The Research Agenda of Competitiveness, Cooperation in The Global Economy*, Ballinger Publishing Company, Cambridge
- Jones T.O., and Sasser W.E., "Why satisfied Customer Defect," *Harvard Business Review*(November-December 1995):88-99
- Kaplan R.S. and Norton D.P., (1993) Putting the Balanced Scorecard to work, HBR, 134-147
- Kaplan R.S. and Norton D.P., (1996) Using the Balanced Scorecard as a Strategic Management Systems, HBR, 75-85
- Kaplan R.S. and Norton D.P., (1996), *Translating Strategy into Action: The Balanced Score Card*, Harvard Business School Press, Boston, MA, USA
- Katz, E., & Kahn, R. L. (1966), *The Social Psychology of Organizations*, Wiley, New York.
- Kehoe L. (1986), Business Market Grows Apace, *Financial Times*, London, June 27, 9.
- Kogut B., (1993), *The Diffusion of American Organizing Principles to Europe, Country Competitiveness*, 179-202, Oxford University Press. New York,
- Krugman P.(1983), New Theory of Trade and Industrial Countries, *American Economical Review*, 73 (2), 343-347.
- Krugman P. (1986), *Introduction to new Thinking about Trade Policy, Strategic Trade Policy and the New International Economies*, MIT Press. Cambridge
- Krugman P.,(1987), *Strategic Sectors and International Competition, The US Trade Policies in Changing World Economies*, Mass, MIT Press, Cambridge
- Malhotra, Y. (2001). *Enabling Next Generation e-Business Architectures: Balancing Integration and Flexibility for Managing Business Transformation*: Brint Institute.
- Mintz SL, "Spotlight on SG&A, *CFO Magazine*(December 1994): 63-65.
- Momaya K.,(2001)International Competitiveness :*Evaluation and Enhancement, 1st edn., Hindustan Publishing Corporation(India)*
- Mowlana, H. & Wilson, L.J. (1990), *The Passing of Modernity: Communication and the Transformation of the society*, New York, Longman, 43-75
- Oliver R.W. (2001) Real-time Strategy: What is Strategy, Anyway?, *The Journal of Business Strategy*, 22(6), 7-10.
- Papazoglou M.P., Ribbers P. and Tsalgatidou A. (2000) Integrated Values Chains and their Implications from a Business and Technology Standpoint, *Decision Support Systems*, Vol. 29, 323-342.

Perspectives of Flexibility and Competitiveness in Telecom Industry

- Parsons, G. L. (1983). Information technology: A new competitive weapon. *Sloan Management Review*, 25, 3-14.
- Phan D.D. (2001) E-Business Management Strategies: A Business-to-Business Case Study, *Information Systems Management*, 18(4), 61-69.
- Porter M.E. (1990), *The Competitive Advantage of Nations*, Free Press. New York,
- Porter Michael E. (1998), *The Competitive Advantage of Nations-with a New Introduction*, Macmillan
- Porter, M. E. (1980). Industry structure and competitive strategy: Keys to profitability. *Financial Analysts Journal*, 36(July-August), 30-41.
- Porter, M. E. (1987). From competitive advantage to corporate strategy. *Harvard Business Review*, 65(3) 43-59.
- Porter, M. E. (1996). What is strategy? *Harvard Business Review*, 74(6), 61-78.
- Porter, M. E. (2001). Strategy and the Internet. *Harvard Business Review*, 79(3), 62-78.
- Porter, M.E. (2001). Strategy and the Internet. *Harvard Business Review*, 79(3), 62-78
- Prahalad C.K. and Hamel G.(1990) The Core Competences of Corporation, *Harvard Business Review*, 79-80
- Rayport, J. F., & Jaworski, B. J. (2001), *Introduction to e-Commerce*: McGraw-Hill. New York
- Ross J.W., Breath C.M. and Goodhue D. (1996), Develop Long-term Competitiveness through IT Assets, *Sloan Management Review*, Fall, 3841, 31-82.
- Scott and Lodge (1985), US Competitiveness in the World Economy, Boston, *Harvard Business Review* Scott Morton M.S. (1991), *The Corporation of 1990s*, Oxford University Press, NY.
- Sethi A.K. and Sethi S.P. (1990) Flexibility in Manufacturing: A Survey. *International Journal of Flexible Manufacturing Systems*, 2(4), 289–328.
- Simons R., *Levers of control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*(Boston : Harvard Business Press, 1995),20
- Sharma S.K. and Gupta J.N.D. (2004) e-Strategy Model for Creating Flexible Organisation , *Global Journal of Flexible Systems Management*, 5(2,3), 1-8.
- Shi, D. and Daniels, R.L. (2003). A survey of manufacturing flexibility: Implications for e-business flexibility. *IBM Systems Journal*, 42(3), 414-426.
- Sushil (1994) Flexible Systems Methodology, *System Practice*, 7(6), 633-652.
- Sushil (1997) Flexible Systems Management an Evolving Paradigm, *System Research Behavioral Science*, 14(4), 259-275.
- Sushil (1999), *Flexibility in Management*, Global Institute of Flexible Systems Management, Vikas Publishing House, New Delhi.
- Sushil (2000), SAP- LAP Models of Inquiry, *Management Decision*, 38(5), 347-353.
- Sushil (2001), SAP-LAP Framework, *Global Journal of Flexible Systems Management*, 2(1), 51-55.
- Sushil and Kak (1997), Global Competitiveness with Core Competence: A Study of HCL, *International Conference of Technology (ICMOT) Proceedings*, IIT Delhi, 75-84.
- Teece D.J. (1983), Multinational Enterprise, Internal Governance and Industrial Organization, *American Economic Review*, 75, 233-238.
- Teece D.J. (1987), *The Competitive Challenges: Strategies for Industrial Innovations*, Cambridge, MA, Ballinger.
- Teece D. J., Pisano, G., & Shuen, A. (1997), Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Trigeorgis, L, (1993), Real Options and interactions with Financial Flexibility, *Financial Management*, Autumn pp 202-223.
- Tselichtchar I.S. (1994), Rethinking Inter Firm Ties in Japan as a Factor of Competitiveness, *The Global Competitiveness of Asian Firms*, New York, St. Martin Press, 49-70.
- Tyson L.D.(1988), *Making Policies for National Competitiveness in a Changing World, Cooperation and Competition in the Global Economy*, Ballinger Publishing Co. Cambridge,
- Tyson L.D.(1992), *Who's Bashing Whom?* IIE, Washington DC.



Manoj K. Sharma and Pramod K. Jain

- Vernon R.(1966), International Investment and International Trade in the Product Cycle, *Quarterly Journal of Economics*, 80, 190-207.
- Yin, R.K. (1994), *Case Study Research, Design and Methods*, Sage Publication,USA

Web-Sites

www.trai.gov.in

www.coai.com

www.mtnl.net.in

www.russellbeattie.com

www.bhartiteleventures.com

www.itu.int

www.gsmworld.com/news/press_2006/press06_29.shtml

www.exp.talecomitelailab.com

