CHAPTER - 2
LITERATURE REVIEW

During the last few decades, organizations have made immense investments in Computer Based Information Systems (CBIS). The implications of these investments for performance have been widely discussed in business and academic communities. This chapter discusses the frameworks and the theoretical contexts and provides an overview to the relevant literature related to CBIS and its impact on organizational performance.

From the organizational point of view the relationship between the organizational performances and organizational effectiveness is important because these terms are often used interchangeably (Rojas, 2000; Herman and Renz, 1998). A definition of organizational effectiveness is provided by Robbins (1998) “the degree to which an organization attains its short-term (ends) and long-term (means) goals, the selection of which reflects strategic constituencies, the self-interest of the evaluator, and the life stage of the organization”. Effectiveness by that definition is therefore rating of performance.

The interpretation of effectiveness tends to equate performance measures as measures of effectiveness. It is therefore necessary to reiterate as that effectiveness can only be determined by a comparison of actual performance on any aspect with the anticipated or target performance (objective) for that aspect (Fig 2.1).
2.1 Organizational Performance

Organizational Performance is a multi-dimensional concept and Robbins (1998) presented key approaches to determine the level of performance. These are discussed below with a consideration of the implications with an end user perspective.

Robbins (1998) suggested that the goal attainment theory approach is intuitively sound and is the most commonly used approach for measuring performance and effectiveness. Some assumptions are necessary to validate the goal attainment approach as a measure; goals must be identifiable, understandable, have general agreement or consensus, and progress must be measurable. Robbins stated that if we go by the above mentioned assumptions, the key decision makers of the organization should be responsible for specifying the goals and ensuring an appropriate measurement system to monitor the achievements.
However, there has been a criticism to the approach in which an organization has many conflicting goals. There is a need to identify the key decision makers and obtain consensus from them. Robbins also argued that organizations may have official goals dictated by social standards, which may not represent actual goals. Short term goals are often different from, and conflicting with the long term goals, while goals are formulated to promote actions. Robbins suggested that goals can often be a rationalisation of the past actions. He did not suggest that the pursuance of goals is not useful but that there is a problem in identification and measurement, which introduces significant complexity into the performance measurement system. A further limitation of the goal attainment approach is the fact that an organization could be deemed effective and performed well if goals are achieved, although those goals may be inappropriate or sub optimal. The governance issue with regard to the goal attainment approach is the extent to which the management is responsible for the determination, agreement, prioritization and measurement of goals.

Robbins (1998) defines system’s approach as “… emphasis criteria that will increase the long term survival of the organization – such as the organization’s ability to acquire resources, maintain itself internally as a social organism, and interact successfully with its external environment”. This approach refers to the ability of the organization with regard to its throughput or transformation process, including its ability to acquire scarce resources. This is the organizational theory underlying resource dependency theory. It is noted that resources are not confined to physical resources and can include intangible resources such as strong supporter bases. It can also include reputation and contacts.
Slack (1997) described a variation of the system’s approach through identification of key internal processes e.g. the human resource processes and the efficient use of economic resources. The human resource focus was on the quality of the human resource processes such as teaming, sharing information, reward and recognition policies, and staff development. There are two aspects firstly; it can represent financial health in terms of earnings and sales also evaluating fiscal policies and the second aspect related to indicators based on ratios of inputs to outputs and throughputs.

A focus on internal process enables comparison of similar organizations, which have different inputs or outputs, it also provides a focus on the important factor of human relations. However many of the measures would be difficult to operationalise.

Robbins (1998) discussed two problems with the systems’ (or process) approach. Firstly, the problem of measurement of the process and secondly, whether these processes (or means) really matters. In support to context, a further complication was discussed by Slack (1997) who reiterated that it was too simplistic to concentrate only on inputs and those inputs in terms of gate receipts, sponsorship as examples were often dependent upon outputs like team success.

The author further suggested that as both the goal attainment approach (which focused on ends) and the systems approach (focusing on means) have goals; it was perhaps preferable to use the method where the goals are more meaningful, which is the goal attainment approach. Although the validity of the systems approach has been questioned, it has some resonance with governance in that providing resource that is an identified role of the board, particularly
in the nonprofit and sports context. It is consistent with **Stewardship** theory, which focuses the role of the board on the provision of structures and processes.

Strategic constituencies approach is more integrative as it considers the requirements of key stakeholders and evaluates performance against each of these stakeholder’s criteria. The extent to which the organization meets the specified criteria is the measure of performance.

**Slack (1997)** indicated that the advantage of strategic constituents approach is the recognition of the complexity of multiple dimensions of an organization. The problems associated with this approach include the difficulty in identifying the constituents, the difficulty in establishing their expectations, the importance of constituents changing over time, and the measurement of constituent criteria. However the author suggested that this approach is becoming more popular and recommended as it is a superior approach for determining performance gap.

As discussed in chapter two, consideration of stakeholders is integral to the governance process for a nonprofit sector. The role of the board in the determination of goals and overseeing the achievement of those goals has already been discussed above. This approach further defines the responsibility to include the identification of key stakeholders and determination of goals specific to them.

**Rojas (2000)** proposed the Competing Values Framework (CVF) which was originally developed by **Quinn and Rohrbaugh (1983)**, as an appropriate model to evaluate organizations across sectors. They suggested that it was particularly suited to the nonprofit sector and described the model in terms of quadrants: human relations; open systems; rational goal; and internal processes. The human relations perspective referred to using participation
and openness as a way to engender commitment. The internal process used measurements, documentation and information management as a driver of stability, control and continuity. Open systems saw innovation and adaptability as a key to achieving recognition and growth, and the rational goal quadrant linked financial performance and productivity to goals and direction.

Slack (1997) indicated that an important feature was the polarisation of the quadrants, in which the human relations model was distinctly contrasted with the rational goal model. The following table 2.2 illustrates the components of the model.

Rojas (2000) endorsed CVF as an appropriate model due to the fact that it “possesses instrument validity, reliability and breadth of empirical research to suggest a high degree of confidence in estimating measurements of OE across sectors”.

In terms of links to governance, the competing values approach could only be operationalised after significant input from the board in goal definition, key management appointments and establishment of clear mission and values, as well as a vigorous oversight and monitoring role. These factors could only be determined with extensive consultation with constituents.

There were similarities between all the models in which each of them used identifiable goals. The systems, strategic constituency and competing values approaches were refinements which sought to overcome the limitations of relying solely on the goal attainment approach. The systems approach focused on the means to achieve a desired result, while the strategic constituency approach sought to answer the question posed by critics of the goal attainment approach in determining whose goals should be considered. The competing values approach
was a further refinement on the strategic constituencies approach and reflects the complexities of determining effectiveness, while recognizing that complexity then becomes difficult to operationalise.

This discussion has focused on Organizational effectiveness, which was defined earlier in this chapter to be the consequence of an evaluation of achievement of organizational objectives. As the preceding discussion demonstrated, the various approaches to effectiveness involve firstly the determination of objectives; Secondly, the measurement of performance; and finally, the comparison of actual performance to objectives.

2.2 Information Systems

Information system success depends on numerous circumstances, rather than any clear cut formula. These systems are open systems as they are dynamic, affected by the environment, and influenced by the people who use them. However, these systems are also goal-driven, so we can measure IS success by focusing on whether the system achievement of goals of the organization. It, therefore appears that neither a purely subjective paradigm nor a purely functional paradigm of the organization is adequate for understanding the impact of the deployment of Information Systems. There is a wide spectrum within which the concept of effectiveness may be interpreted and the dimensions in which such an interpretation may be placed. Definitional and measurement issues have retarded the orderly and scientific accumulation of knowledge in this field.

Existing literature has been showing increasing interest towards understanding the impact of Information Systems on organizations. Although this theme has been widely investigated, as a
result different views have emerged. Some assert a positive impact (Bama, 1995; Stratopoulos, 2000), while others hold the contradictory views (Brynjolfsson, 1995; Holland, 1997; Setzekorn, 1998). Nonetheless, it is crucial to discover how to relate the significance of Information Systems to organizations.

Several researchers opine productivity as a measure of results achieved through investment in Information System. Strassmann (1990 and 1997) have highlighted the so called “Productivity Paradox”, and observed that the productivity and competitive advantage of information and communication systems emerges from strategic use of ICT and not from the investment in ICT as such.


Barua et al. (1995) experimented a process-oriented methodology to examine the impact of Information System on business strategic units. After working on it for about five years, found a positive impact of information technology on different performance measures such as market share and ROA. Some other researchers (Hitt and Brynjolfsson, 1996) also studied and analyzed the possible impact of Information System on performance measures like ROA and ROE but were not able to find any correlation between them. More often in the Information System literature, most empirical research is based on large companies which have knowledge
about the real advantage of Information Systems for their business and more generally, to the cultural deficiencies and resistance to change (King, 1994; Palvia, 1994). Thus there is also a need to study the relatively smaller organizations and study the impact of Information Systems on them for comparative purposes (Marco Tagliavini et. al.)

As quoted by many authors, strategic alignment is the key factor for managing Information Systems effectively and accurately (Venkatraman, 1986; Das, 1991; Henderson, 1989 and 1993; Burn and Szeto, 2000). Studies suggest that the concern of the entrepreneurs about Information System is the initial contribution essential to initiate the strategic activities pertaining to Information System (Das, 1991; Croteau, 2000).

Poor alignment between the strategic focus and the actual performance of the Information Systems manifests itself in numerous ways. When business executives can’t articulate their Information Systems need or when Information Systems personnel have limited vision or knowledge, Information Systems are likely to be costly and probably yield low returns. High potential Information Systems applications may not be identified, and the executives with first-rate technology ideas may find it difficult to turn ideas into action (Chan, Yolande E., 2002).

Information System literature suggests that the performance “the fit between an organization and its strategy, structure and process, technology and environment” is required. Focused definition such as “convergent intentions, shared understanding and co-ordinate procedures” have also been unfolded (Shams R, Wheeler F, 1997).

Information Systems performance relates to the degree to which the Information technology’s
mission, objectives and plans are supported by business mission, objectives and plans (Reich B, and Benbasat, I, 2000).

Paul Strassmann, argues that there is no relationship between computer related expenditures and company’s performance. Information technologies have therefore shifted their focus from just automation to acting as a business enabler and become a part of organizational strategy (Mahadeo and Mital, 2004).

Some researchers have argued that the investment in the Information technology department give benefits to the other departments. Value of Information Technology is the price that users are prepared to pay. Therefore, the users know more about the value of computer applications, and also have the power and motivation to achieve it (Mahadeo, Mital, 2004).

It is pertinent that in order to understand the use of technology in business, focus is to be laid on Information technology disciplines. Matrices of technology domain are insufficient for intangible benefits such as process improvement and customer satisfaction. Although these could be adequate for achieving tangible benefits such as reduction in inventory costs and other operating costs.

According to the theory of production a firm will seek to invest first in those inputs that affect output the most. Li Chtenberg (95) found a gross marginal benefits of over 60% as a result of Information technology for firms as well as industry as a whole. Also, net benefits as a result of Information technology, (taking case of depreciation rates) found to be positive.

Porter, 1980, in his research on competitive strategy, opines that Information technology cannot help an organization to gain large profits on a continuous basis because as a result of
competition other companies will also follow suit (eg SBI followed ANZ Grindlays, Standard chartered ICICI in ATM and Internet Banking services). The company, therefore, has no one time Information technology solution possible, rather it becomes a competitive necessity. Although the investment in Information Systems affects the competitive positioning of a company, it does not increase profits directly per say, but rather influence intermediate variables, which in turn drive profits.

Berua et al, 1995, lays emphasis upon value approach and evaluation of Information Systems, which is the perceived value or the benefit of Information technology for the consumer both internal as well as external.


Information Systems, by definition (DeLone and McLean, D&M Model, 1992) are integrated systems for providing information to support operations, processes, management analysis and decision-making functions within an organization. In fact, effectiveness of the IS function has proven practically impossible to define and measure. One important reason to this is that the role of the IS function in the organizational performance, can be subtle and difficult to differentiate from other factors. Some organizations define IS efficacy in a way that the true value of it is hidden. Some depend on mostly qualitative rather than quantitative measures. Within the organizational context, many studies suggest that the efficacy of IS deployment has
a great value to the organization. Evidence also suggests that high IS effectiveness is associated with high organizational performance, which yields a connection between assessment and productivity.

However on the “IS Quality” side, many studies show that both researchers’ and practitioners’ approach to information system quality which is just like traditional approaches to software quality. However, it is evident that software quality is only limited to the development of software system, while IS quality is seen in the organizational context, where the use of software is stressed (Ozkan, 2003).

Over the last 11 years (i.e. between 1992 and 2003), DeLone and McLean (1992) have also realized the impact of the Internet on the IS Success, and hence added a new concept “measuring e-commerce system success” in an updated D&M model. The D&M IS success model is a process based model. Hence it is feasible for adoption to any change in the IS field. The model is applicable the information technology in general, and the Internet in particular, having a dramatic impact on business operations.

The Seddon Model (Seddon et al, 2002), conceptually elaborates and clarifies the aspects of the D&M model, thereby effectively integrating core theoretical relationships espoused in the literature. Seddon’s three constructed categories are; system and information quality, general perceptual measures about net benefits about IS use, and IS behaviour. Elements of DeLone and McLean’s model have been tested previously many times by different researchers. Rai et al (2002) have assessed the validity of IS Success Models in a quasi voluntary IS use context. This is an empirical test done on an Information Systems in use, and the analysis was
Figure 2.2: Drivers of Change

(Source:” Hitt, Lorin and Brynjolfsson, Erik ” Productivity, Profit and Consumer Welfare” (1996))
completely theoretical. The results supporting DeLone and McLean’s focus on integrated IS success models and their observation that IS success models need to be carefully specified in a given context.

Seddon (1999) additionally identifies three distinct models intermingled in DeLone and McLean’s model, each reflecting a different interpretation of IS Use. One is a process model of IS Success, that depicts the sequence of events relating to an IS. The second embedded model is a representation of the behaviour, that manifests as a result of IS Success and the third embedded model is a variance model of IS Success, which links System Quality and Information Quality with surrogate measures of the net benefits that accrue from IS use.

Seddon’s argument is that intermingling of the three models as one model of IS success creates confusion concerning the interpretation of the D&M. Hence to more clearly represent IS success, Seddon (1999) disentangles the process model, from a variance model of behaviours that occurs as a result of IS success.

Beale and Cole’s Information Systems Review (2008) by the associate, Matthew Simmons, focused on the internal processes and existing Information systems in the organization so as to highlight the major problem areas. The main problems found were; i) duplication of effort, ii) inefficiency in some processes including e-commerce strategy and iii) problems with communication. He developed a simple model, shown below (Figure 2.3), to explain all the main problems in detail and to highlight the impact of the improved Information Systems on performance and profitability in the organization.
James A O brien 1990 developed, implemented and suggested the conceptual framework for the business students, managers, enabling them to address the business issues and the complexities by implementing it in their own organizations according to their types and sizes. The same model has been adopted to collect the information of SMEDA, operating in the Pakistani based business environment to evaluate the performance as shown in figure 2.4.

Some recent studies have highlighted both the opportunities and the challenges that CBIS has imposed on the world economy. For instance, Hitt and Brynjolfsson (1996) have analyzed the implications of CBIS on organizational performance while studies by have looked at growth and development Stiroh (2001), Pohjola (2001) Satti and Nour, 2002.
Focusing on the business value of CBIS, an organizational performance has been a major concern of Information System (IS) research. It has been a matter of much debate whether or not investment in CBIS provides improvements in performance and business efficacy. In 2002, Morgan Stanley reported that US companies wasted $130 billion in the previous two years on technology. While organizations have increased investments in CBIS in order to improve organizational performance. Findings from earlier CBIS productivity studies have been inconclusive despite the fact, that several recent firm-level empirical studies have found
a positive relationship between CBIS investments and organizational performance. For several years, scholars and policy makers lacked conclusive evidence that the high levels of spending on CBIS by businesses improved their productivity, leading to the coining of the term "CBIS Productivity Paradox". Morrison and Berndt (1990) concluded that additional CBIS investments contributed negatively to the productivity, arguing that "estimated marginal benefits of investment in CBIS are less than the estimated marginal costs". Others, such as Loveman (1994) and Barua et al. (1991), said that there is no conclusive evidence to refute the hypothesis that CBIS investment is inconsequential to productivity. Of late, researchers working with firm-level data have found significant contributions from CBIS toward productivity (Brynjolfsson and Hitt, 1996). Most of these firm-level studies have been restricted to the manufacturing sector, in large part owing to lack of firm-level data from the service sector.

Kamil (2001) declared that appropriate use of CBIS in the companies increase the performance by:

a) Increasing the volume of capital used per worker (capital deepening), when firms invest in CBIS; and

b) A speedup of growth of TFP in organizations using information technologies.

In the studies of CBIS and productivity, for successful measuring, it becomes necessary to disaggregate capital into the component categories of investment—CBIS and the traditional forms of capital, labeled non-CBIS. CBIS investment, broadly defined, includes investments in both computers and telecommunications, and in related hardware, software, and services (Dedrick et al., 2003).
2.3 CBIS and Organizational Performance

During the last few decades, organizations have made immense investments in CBIS. The implications of these investments for performance have been widely discussed in business and academic communities, since the American economist Solow questioned their benefits (Horzella, 2005). In a recent famous quote from 1987, he claims, "You can see the computer age everywhere but in the productivity statistics" (Solow, 1987). Growth in productivity is a central measure of national and organizational success, and is often considered in economic decision-making. This is because the amount that a nation can consume is closely linked to what the nation produces. In a similar way, the performance of a company is dependent on its ability to deliver more value to consumers, based on the same resources. The inability to demonstrate a positive correlation between CBIS investments and improved performance and increase the CBIS investments in the companies was later defined as the paradox and formed a baseline for many studies. The results were conflicting (Harker, 2000).

Many studies in eighties have showed no correlation between CBIS investments and performance, whereas research based on subsequent data and new assumptions mainly showed a positive and significant effect on productivity and economic growth (Dedrick et al., 2003).

As various questions of measurement made it difficult to present distinct conclusions based on aggregate national or industry-level data, researchers turned to aggregate firm-level data when seeking explanations for this. The research indicates that organizations that have made CBIS investments of equal scale show substantial differences in the development of their performance (Brynjolfsson, 2003). Explanation for this phenomenon is that the benefits gained
from investments in CBIS are dependent on firm-specific conditions. Idiosyncratic conditions (market position, cost structures etc.) and complementary investments in management practices, organizational development and strategy are decisive for achieving planned effects. As an example is Åsa Horzella (2005) concluded that there is a correlation between the level of employee education and the performance from investments in CBIS.

Another part of the explanation for the “paradox” is the view of CBIS as a General Purpose Technology (GPT) that makes extensive further development possible and offers a wide range of potential applications. The implementation of other GPT's, such as the electrical dynamo and the steam engine, has shown that it takes time before full advantage of the technology that can be taken and performance improvements achieved. Information structures and operating modes need to be developed and an organization adjusted for the effects of a new technology has to be realized. Another explanation for “paradox” includes following (Brynjolfsson, 1993; Loveman, 1994):

i) Mis-measurement of outputs and inputs;

ii) Time lags due to learning and adjustment;

iii) Redistribution of profits, and Mismanagement of CBIS; and

Inappropriateness of traditional performance measures.

Some experts claimed that inconsistent findings from CBIS productivity research are due to interchanging terms between and also lack of adequate data. However, recent studies have claimed that CBIS paradox no longer exists (Åsa Horzella, 2005) and there is a positive
correlation between appropriate use of CBIS and Organizational growth.

2.4 CBIS Opportunities

CBIS has the potential to accelerate growth by:-

a) Improving the knowledge-based economy by

   i) increasing the efficiency of the educational system and learning to benefit from long-distance teaching in the near future;

   ii) developing the communication system, through the provision of cheaper, easier, faster and more efficient services; and

   iii) Upgrading skills and developing human resources, through improved educational and training systems and enhancing the capability of people.

b) Promoting the degree and the efficiency of the work organization.

c) Promoting e-commerce. Investments in CBIS has the potential to push/enhance e-commerce. Both Internet and the recent growth in e-commerce can help facilitate the fast delivery of products or services to large number of consumers (Satti and Nour, 2002). Table 2.4 shows the average of annual percentage of GDP devoted to expenditure on CBIS in different countries (from 1998-2008).
Table 2.1: (The annual percentage of GDP devoted to expenditure on CBIS)  
(www.wikipedia.com)

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>New Zealand</td>
<td>10.3</td>
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<tr>
<td>Singapore</td>
<td>9.6</td>
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<tr>
<td>Australia</td>
<td>8.7</td>
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<tr>
<td>UK</td>
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<td>USA</td>
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<tr>
<td>Japan</td>
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<td>Canada</td>
<td>7.7</td>
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<tr>
<td>Switzerland</td>
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<tr>
<td>Czech Republic</td>
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<tr>
<td>Denmark</td>
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<tr>
<td>Hong Kong</td>
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<tr>
<td>South Africa</td>
<td>7.1</td>
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<tr>
<td>Netherlands</td>
<td>7</td>
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<td>Colombia</td>
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<td>Malaysia</td>
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<tr>
<td>Korea</td>
<td>6.6</td>
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<td>Hungary</td>
<td>6.2</td>
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<td>Germany</td>
<td>6</td>
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<tr>
<td>France</td>
<td>5.9</td>
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<tr>
<td>Austria</td>
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<td>Slovakia</td>
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<tr>
<td>Norway</td>
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<td>Portugal</td>
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<tr>
<td>Ireland</td>
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<tr>
<td>Vietnam</td>
<td>4.7</td>
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<tr>
<td>Italy</td>
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<tr>
<td>China</td>
<td>4.3</td>
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<tr>
<td>India</td>
<td>4.27</td>
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<td>Iran</td>
<td>2</td>
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Moreover some important improvement factors for using CBIS in the firms are:-

a) **Better information about customers** - Retailers, wholesalers, service providers and manufacturers can now use detailed real-time information about customer purchases, to make business decisions.

b) **Faster information flow** - Information gathering and reporting is highly automated and flows almost instantaneously between business units and companies.

c) **Smaller and more accurate inventories** - At all stages of the value chain participants boost efficiency, by keeping lower inventories on hand.

d) **Sharp declines in operating margins and real consumer prices** - These are the ultimate rewards of the investment, and many of the gains are passed on to the consumer.

e) **Increased firm and store size** - The technology rewards scale and scope, enabling large centralized chains and "big box" stores to expand rapidly.

These achievements are substantial, but they have not been realized quickly or easily. Rather, they are the product of decades of heavy investment, meaningful organizational change, and effective managerial leadership. Indeed, the transformation is far from complete (McGuckin et al., 2004).

**2.5 CBIS, Coordination and Performance**

The relationship between Information Systems, coordination and organizational performance has been reviewed by organizational researchers. These researchers regard coordination as a necessary condition for effective organizational performance. Viewing
the organization as an information processing system, Galbraith (1973, 1977) argued that the primary function of an organization is to process the information for decision making needed for a given level of performance. Egelhoff (1982) also considered information processing as an important aspect of organizational performance. Coordination refers to all of the information processing necessary to integrate various economic activities (Namchul Shin, 2000).

From an information processing perspective, Cheng (1984) argued that coordination is associated with a given level of organizational output performance. The higher the level of coordination, the better the organization can synthesize information into the organizational knowledge which is needed for better organizational output performance.

According to Lawrence and Lorsch, coordination also aims to achieve unity of effort among various subsystems in the accomplishment of the organization's task, which is a complete input-transformation-output cycle involving at least the design, production, and distribution of some goods and services. The above organizational research agrees that a higher level of coordination can improve organizational output performance since coordination is a necessary condition for a given level of firm output performance. Since a higher level of coordination requires large coordination expenses, and since coordination can be achieved efficiently if coordination costs are reduced, CBIS can contribute to firm’s productivity by reducing coordination costs, thus facilitating a higher level of coordination. Production enhancement can also be achieved by CBIS applications, which automate production processes and improve the capabilities of existing machinery.
CBIS, however, is most often used to reduce coordination costs within and between organizations. Organizations can produce more if they cooperate, each specializing in its own productive activities and then interacting with one another to acquire the actual goods and services they desire (Milgrom and Roberts, 1992). The organizations are specialized producers that need to trade, their decisions and actions need to be coordinated to achieve these gains. A key problem in achieving coordination is that the information needed to determine the best use of resources is not freely available. By providing better means of communication, information processing, and searching, CBIS reduces coordination costs, improves the coordination cost efficiency, and contributes to firm’s performance.

2.6 Value Chain Analysis Model

The value chain is a concept from business management that was first described and popularized by Michael Poter in 1985 best seller, “Competitive Advantage, Creating and Sustaining Superior Performance”.

Coordination and collaboration, Investment in Information Technology, changes in organizational process, committed leadership, flexible jobs and adaptable, capable employees, a supportive organizational culture and attitudes are imperatives of superior performance. The value chain categorizes the generic value added activities of an organization. In the select organizations taken up for the study, the “primary activities” include: Inbound Logistics, Operations (production), Outbound Logistics, Marketing and Sales (demand), and Services (maintenance). The support activities include: Administrative Infrastructure Management, Human Resource Management,
| **Table 2.2: Value Chain Analysis**  
**Primary Activities in Select Organizations taken for study** |
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<tr>
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<tbody>
<tr>
<td><strong>Technology</strong></td>
<td><strong>Inbound Logistics</strong></td>
</tr>
<tr>
<td>Technology research</td>
<td>Purchasing / Procurement</td>
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<tr>
<td>Product development</td>
<td>Inventory Management</td>
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<tr>
<td>Product design</td>
<td>Receipt of raw material / Product from suppliers</td>
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<tr>
<td><strong>Human Resource Management</strong></td>
<td><strong>Operations</strong></td>
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<tr>
<td>Recruitment</td>
<td>Production Planning and Management</td>
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<tr>
<td>Rewards System</td>
<td>Product manufacturing</td>
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<tr>
<td>Training</td>
<td>Maintenance</td>
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<tr>
<td><strong>Infrastructural Activities</strong></td>
<td><strong>Marketing and Sales</strong></td>
</tr>
<tr>
<td>Planning</td>
<td>Planning of marketing Strategy</td>
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<tr>
<td>Financial management</td>
<td>Advertising / Promotion</td>
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<td>Legal Service</td>
<td>Sales Management</td>
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<tr>
<td>Salary and Wages</td>
<td>Customer Relationships Management (CRM)</td>
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<td>Quality Management</td>
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<tr>
<td>Information Distribution Across the firm</td>
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<tr>
<td>Payments (toward Supplies)</td>
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<tr>
<td>Incomes (from Customers)</td>
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<tr>
<td><strong>Outbound Logistics</strong></td>
<td><strong>Services</strong></td>
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<tr>
<td>Handling of goods</td>
<td>After Sales Service</td>
</tr>
<tr>
<td>Distribution</td>
<td>Customer Care</td>
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<tr>
<td>Dispatch of product / services</td>
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Technology (R&D) and Procurement. The costs and value drivers are identified for each value activity.

The value chain Analysis Model quickly made its way to the forefront of management thought as a powerful analysis tool for strategic planning. The simpler concept of value streams, a cross-functional process which was developed over the next decade, had some success in the early 1990s.

The value-chain concept has been extended beyond individual firms. It can apply to whole supply chains and distribution networks. The delivery of a mix products and services to the end customer will mobilize different economic factors, each managing its own value chain. The industry wide synchronized interactions of those local value chains create an extended value chain, sometimes global in extent. Porter terms this larger interconnected system of value chains the "value system." A value system includes the value chains of a firm's supplier (and their suppliers all the way back), the firm itself, the firm distribution channels, and the firm's buyers (and presumably extended to the buyers of their products, and so on).

Capturing the value generated along the chain is the new approach taken by many management strategists. By exploiting the upstream and downstream information flowing along the value chain, the firms may try to bypass the intermediaries creating new business models, or in other ways create improvements in its value system. The concept has also been employed in the development sector as a means of identifying poverty reduction strategies by upgrading along the value chain. Although commonly associated with export-oriented trade. Development practitioners have begun to highlight the importance of developing national and intra-regional chains in addition to international ones.
In the research study, the questionnaire has been framed on the basis of Value Chain Analysis model (Porter, M. (1985)). The construct of the instrument have been adapted according to this model. The classical representation of the value chain has been integrated with a more recent measure that was used to assess the impact of Business Performance Relationship on manufacturing firms Table 2.2 given above shows the whole set of business activities classification, as per this model, in eight subgroups.
References:


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