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Focus : Customer Relationship Management

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Contents

Managing Customer Relationship: A Framework for SCM & CRM Integration

B.S. Sahay, Vinita Singh & A.K. Gupta

In the present scenario of globalisation and fluctuating markets, Supply Chain Management (SCM) and Customer Relationship Management (CRM) are becoming significant to the corporate world as both identify and address the core element that directly impacts the bottom-line, the customer. This paper examines the linkages between these business strategies. A framework is proposed to integrate these paradigms.

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In this information age, companies that deal with consumers through complex supplier, distributor/retailer channels are finding themselves face-to-face with their end customers. Over the past few years, customer expectations have risen by leaps and bounds (Nebel et al, 2000). Customers have become more demanding and desire maximum value from products. Therefore, companies require adequate strategies for moving information and products quickly throughout their supply chain network. They have no option but introduce flexibility and agility in their operations and practise proactive marketing strategy to smoothen day to day business transactions. This is one of the reasons why companies are adopting supply chain management and focusing on enhancing and maintaining consumer base.

Supply Chain Management

Supply chain management has been conceived as integrative business philosophy and implementation actions to manage material, information and cash flow from raw material excavation to the ultimate end use (Cooper et al, 1997). It extends the concept of functional integration beyond organisation boundaries and enables integration across their supply chain network. The main objectives of implementing supply chain management are to reduce inventory level, increase customer satisfaction and build competitive advantage to create customer value (Cooper & Ellram, 1993). In a survey on supply chain practices in Indian industries, Sahay et al, (2001) found that enhancing customer service/satisfaction (4.93) outscores all other supply chain goals, confirming that meeting customer expectation is the ultimate objective of supply chain management. At the same time, expanding revenues (4.56), reducing inventory costs (4.52), lowering product cost (4.37) and improving on-time delivery (4.43) follow closely in terms of supply chain priorities (Sahay et al, 2001). For effective consumer response it is necessary to integrate supply chain activities. Supply chain integration enables

organisations to produce innovative products and deliver them with high quality and lower cost. Marien (2000) identified four key supply chain enablers as organisational infrastructure, technology, strategic alliances and human resources management for effective supply chain management. He also outlined that the role of technology and relationship with channel partners is crucial in achieving supply chain integration. As we enter the era of 'network competition', the winner will be those organisations who can better structure, co-ordinate and manage the relationships with their partners in a network committed to better, faster and closer relationships with their final customers (Christopher, 1999). Hence, a closer relationship with customers is essential to understand and fulfil their expectations for higher mutual value creation.

The main objectives of implementing supply chain management are to reduce inventory level, increase customer satisfaction and build competitive advantage to create customer value.

In the earlier days, the control of relationships lay in favour of manufacturers, who exercised power and dictated relationships in the supply chain with channel members and customers. But over the last few years, the dynamics of relationship have changed as the power has gradually shifted from manufacturer to intermediaries and consumers. With globalisation, information technology revolution and advances in telecommunication and technology consumers are more aware and have access to an extended market, cheaper and better quality products. The last three decades witnessed the sequential rise of MRP, MRP-II and ERP as information technology tools to ease business transactions, optimising factory operations. Presently SCM/CRM are emerging as cutting edge technology tools to impart greater flexibility in maintaining efficient flow of information, and physical flow across the network and direct relationship with individual customers. Customer Relationship Management (CRM) has great significance in satisfying and retaining customers and thus gaining long-term equity. It involves establishing long run sustainable relationship with potential customers of different segments at different levels. It is a comprehensive strategy and is the process of acquiring, retaining and partnering with selective customers (Seth & Parvatiyar, 2001). The purpose of CRM is to improve marketing productivity and enhance mutual values for both the customer and supplier (Sheth & Sisodia, 1995). CRM also entails involvement of company employees, channel elements and external entities such as advertising agencies and consulting organisations (Srivastava et al, 1999).

CRM is a front-end tool that ensures acquisition, detainment and expansion of long term relationship with potential customers.

The ultimate objective of supply chain management as well as CRM is to achieve higher customer satisfaction. SCM supports the backend operations in terms of effecting logistics operations, imparting greater manufacturing flexibility, lowering inventory and effectual sharing of product, demand and planning information for agile response to the varying needs of customers. CRM is a front-end tool that ensures acquisition, detainment and expansion of long term relationship with potential customers. Hence, it is necessary to develop a compound perspective to view the relationship between these two strategies.

Evolution of Supply Chain Management

Supply chain awareness can be traced back to the sixties. It was called logistics or physical distribution until the late 60s and was not considered an important management decision area as is the case today. It was, up until very recently, one of the most sadly neglected areas of management. For example, Drucker (1962) referred to the distributive work as "unskilled work", "donkey work", and that such activities were "low-grade nuisances". In the seventies, the decade of cost and quality competition, there was no co-ordination among the various functions of the organisations and each department worked to optimise its functional silo. This time witnessed various attempts to make distribution effective to gain more share from the market (Mitra & Chatterjee, 2001). In the 1980s the focus of supply chain management shifted to the re-engineering of cost structures. The myopic approach to work in functional silos transformed into integrated logistics approach to attain systems objectives (Vrat, 1999). At the end of the 80s the focus of supply chain management shifted from cost reduction to improving customer services (Gattorna, 1998). The supply chain at present faces more threats simultaneously posing new opportunities in terms of global access to each element of economic cycle. In essence now supply chain management has become more customer focused to create customer value and to provide them better product and related services at the cheapest. Figure 1 shows the successive stages of evolution of SCM.

Though supply chain management is a hot buzzword today there remains considerable confusion as to its definition and conceptualisation. Some authors (Ellram & Cooper, 1990; Houlihan 1988; Jones & Riley, 1985; Stevens, 1989) regard it as 'management philosophy' to deal with integrated material and information flow right from raw materials to finished goods consumption at end-use. Lambert and Pagh (1997), Novack et al, (1995) and Tyndall et al, (1998) emphasise that SCM is integrated and synchronised 'operational efforts' to improve flow of material and product. A third stream of authors (La Londe, 1997; Ross, 1998; Davenport, 1993) believe that SCM is 'management process'. Many practitioners equate logistics management with supply chain management. Some accept logistics management as part of supply chain management (Mentzor, 2001). To give a holistic approach combining all these perspectives, in this paper supply chain management is defined as the strategic integration and co- ordination of business functions within a particular company and across the supply chain network, for improving long-term performance of the individual companies and the supply chain as a whole.

Supply chain management is the strategic integration and co-ordination of business functions within a particular company and across the supply chain network, for improving long-term performance.

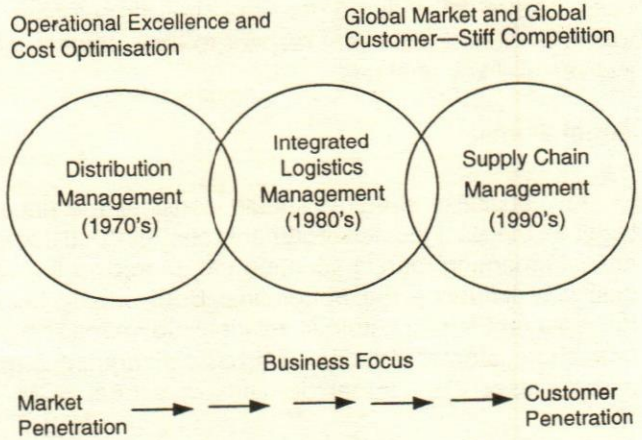

Fig. 1. Evolution of Supply Chain Management

Marketing & SCM

Though logistics has significant impact on supply chain due to primary focus on reducing inventory, agility and stock availability the role of marketing can not be ignored in successful supply chain implementation. Marketing as an individual business function has its own importance due to its direct relationship with customers in the era of customer driven business. Min and Mentzer (2000) exclusively studied the role of marketing in effective supply chain management—marketing concept, marketing orientation, relationship marketing and its impact on supply chain implementation. They hypothesised that marketing concept promotes individual firms' co-ordinated activities inside and outside the firms to achieve customer satisfaction at a profit. Marketing orientation, which is implementation of marketing concept, requires firms to generate, disseminate and respond to market information. Relationship marketing aims at establishing, maintaining and enhancing either dyadic relationship or multiple relationship in a supply chain to create better customer value.

Effective supply chain management requires partners to build and maintain close long-term relationship. Ellram and Cooper (1990) asserted that a successful business relies on forming strategic partnership—a long lasting inter-firm relationship with trading partners. Better relationship helps in inventory and cost reduction and joint planning to impart agility and success to the supply chain as a whole (Cooper et al, 1997). Marketing plays an important role in implementation and success of supply chain at strategic and tactical level. It provides valuable market information about customers, competitors, potential channel partners, marketing scenario and emerging business avenues and information is the key in managing the supply chain gamut. At operational level, marketing can influence day to day business transaction by providing customer information from earlier transactions.

In the pre-industrialisation era, developing direct customer relationship was the only means to carry out business transactions. This was due to the fact that economy was agriculture driven. Farmers, artisans, traders, labours etc. were customers of each other, which lead to direct relationship building. After industrial revolution, factory system and manufacturers as intermediary came into existence and led to transaction based trade relationships. This relationship has continually evolved in terms of marketing (Borch, 1957; Felton, 1959; McKitterick, 1957), transaction marketing (Ferber, 1970; Kotler, 1972), relationship marketing (Berry, 1980; Day & Wensley; 1983; Jackson, 1985; Macneil, 1980; Morgan & Hunt 1994) and marketing orientation (Kohli & Jawaroski, 1993). The main stream marketing management i.e. sales and promotion-based marketing is concerned with demand stimulation to obtain more sales. 1960s was the era of mass marketing,

in 1970s the focus was on segments marketing into publishing, advertising etc., in 1980s transaction marketing became niche competitive advantage and in 1990s turned into relationship marketing (Hopkins, 2001). More recently with the advent of electronic commerce, internet and digital technologies and telecommunication, the form of customer-supplier relationship is again turning into its antecedent phase of direct relationship with a new conceptualisation, named Customer Relationship Management (CRM).

CRM is a way to identify, acquire, and retain customers.

For some, CRM is a way to identify, acquire, and retain customers. For others, it is a way of automating the front office functions of sales, marketing, and customer service. For some vendors, whatever their current product may be, that is CRM. And some view it as a discipline as well as a set of discrete software and technologies which focuses on automating and improving the business processes associated with managing customer relationships in the areas of sales, marketing, customer service, and support. This diversity of definitions is a result of differences in perspectives. The first is based on a business perspective of increasing competition that is driving companies to focus on their customers. The second is based on the relatively new phenomenon of the integration of previously separate applications such as Sales Force Automation and Customer Service Support into Enterprise Applications. The third is a result of software vendors re-positioning their information technology products and services under the CRM umbrella, to take advantage of the fast growth of the CRM market.

CRM is a way of automating the front office functions of sales, marketing, and customer service.

Now a days, competing companies around the world can communicate with customers on a personalised basis with ease. In other words competition is so stiff that companies are finding both their customer and competitor a mouse click away. Customer relationship management is essentially a strategy for managing relationship with new and old customers, throughout the entire lifecycle. The key to successful customer relationship is to know your customers as individuals, to see things from their perspective and to understand their needs. In other words to understand and preferably share their vision to support the customer with right product and services at right time, right cost, right quality and right quality and right place. By seeking and achieving operational goals such as lower marketing cost, streamlining order processing and reducing burden of customer acquisition cost through customer retention economics, firms can achieve greater marketing productivity. Hence, to secure growth as well as profitability in new digital global market, companies must increase their focus on successful and efficient customer relations and use the full power of CRM with emerging information technology.

Linking SCM & CRM

Earlier manufacturers wielded power and dictated relationships in supply chain. The power is gradually shifting from manufacturers to intermediaries and consumers. SCM involves the positive and active role of raw material and component suppliers, third party logistics providers and management of relationship with them for quick response to customer demands. It also emphasises the management of key processes such as customer relationship management, customer service management, demand management and order fulfilment etc., which are focused on understanding and meeting customer needs (Cooper et al, 1997; Lambert & Pagh, 1998). CRM on the other hand puts emphasis on acquiring and retaining profitable customers and maintenance of long term relationship with them. The changing dynamics of market puts each element in the limelight and makes their role important. A combined perspective by integrating SCM and CRM is required to form a customer focused business strategy. Figure 2 presents a holistic perspective to link SCM and CRM with respect to their domain, objectives and key enablers.

Target Domain

Any business strategy, should consider the uncertainty in the business environment, changing customer needs, emerging market scenario etc. Moreover it must positively influence the bottomline. Both supply chain management and customer relationship management have the customer in focus. The basic difference in approach lies in their target domains or scope. SCM, a

A combined perspective by integrating SCM and CRM is required to form a customer focused business strategy.

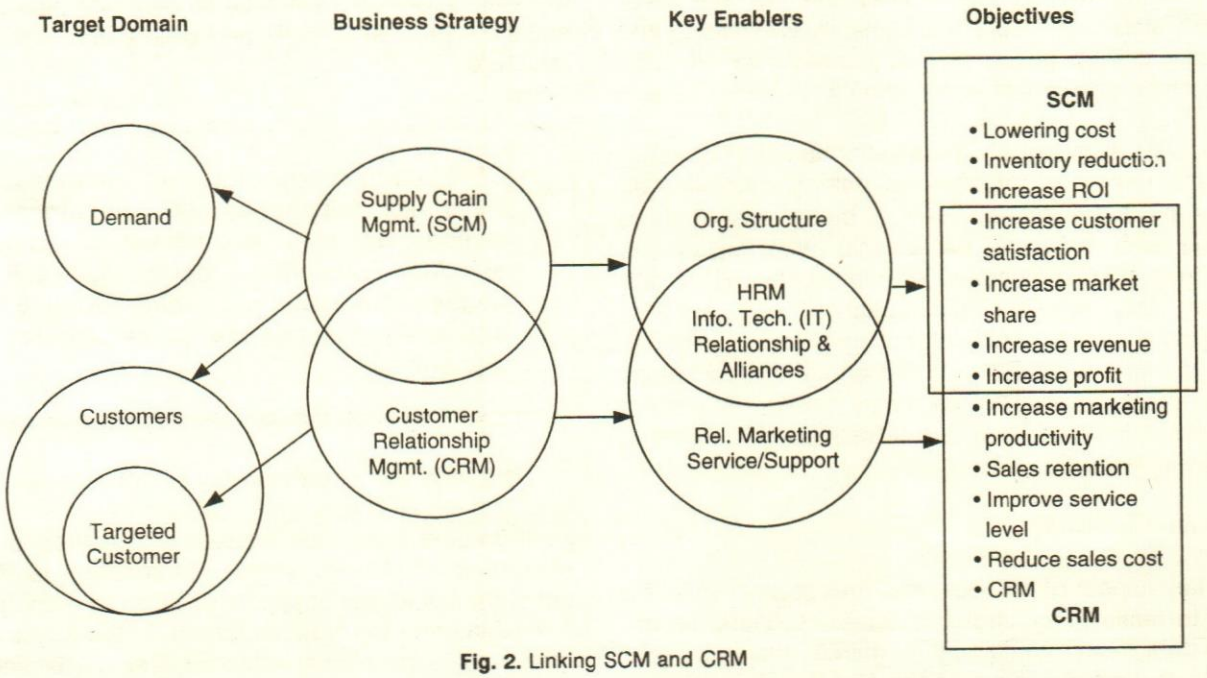

Fig. 2. Linking SCM and CRM

bigger umbrella covers the demand generated from all the channels and customers, whereas CRM targets profitable customers and provides tools to mine customer data to form appropriate customer offerings.

All Customers and Demand: A Supply Chain Perspective

The aim of supply chain is to respond efficiently and effectively to the fluctuating market demand (La Londe, 1997) to best satisfy the customer through integrated channel management. As depicted in Figure 2 the target domain of SCM is to address total demand and meet customer expectation. Functionally SCM includes multiple business processes. According to Bowersox (1997), Cavinato (1992) and Mentzer (1993), it includes marketing research, sales, promotion, product design, R&D, information technology and system analysis and is more comprehensive than mere logistics functions (Cooper et al, 1997). Thus functionally SCM encompasses all the traditional intra-business functions. According to Christopher (1992) leading edge companies have realised that the real competition is not between companies but it is supply chain against supply chain. In this context it is vital to recognise the importance of interfirm co-operation, information access, risk and reward sharing and collaborative planning to meet customer demand as an individual entity. In other words SCM means a collaborative response to customer-demand, supply chain as a whole.

Profitable Customers: A CRM Approach

Customer relationship management is essentially a marketing function and targets the profitable customers (Sheth & Parvatiyar, 1995). CRM is embedded with businesses to create customer database and enable relevant information sharing at different levels in the organisation to work as a team in responding to customer demands. It provides a personal interface to the customers in terms of their expectation, desires, purchasing capabilities and transactions made and discovers the useful interesting and novel information of commercial importance from non-trivial. The scope of CRM is limited to organisational boundaries—it does not look beyond that and is limited to profitable and potential customers. It is apparent while comparing the target domain that though CRM maintains its own identity and individuality as business process yet it is the sub-strategy of supply chain management.

Customer relationship management is essentially a marketing function and targets the profitable customers.

The Key Enablers

To create strategies for successful SCM and CRM implementation there are certain basic and specific considerations to be taken into account. Marien (2000) lays out the four key enablers' viz. organisational infrastructure, technology, strategic alliances and human resources management that are central to SCM effectiveness. Easton et al, (1998) also addresses the soft issues in

supply chain management. They identify that clear shared vision, a pressure and capacity for change and adequate first-up action plan is essential for effecting successful supply chain implementation.

As CRM is essentially a marketing function, it recognises the role of information technology, marketing alliances and better management of human resources to manage and enhance relationship with customers. Apart from that contribution of after sale services and support and relationship marketing can not be neglected as relationship marketing has power to improve marketing productivity and create mutual values by increasing marketing efficiency and/or enhancing marketing effectiveness (Sheth & Sisodia, 1995; Sheth & Parvatiyar, 1995).

Information Technology

A key aspect of any business philosophy lies in the ability to make quick strategic decisions based on accurate data related to fluctuating market and static constraints of the firms. Despite the fact that non-tangible and non-measurable soft issues are significant in reaping the benefits of supply chain implementation, primary focus of business organisation is to implement infotech solutions. The role of information technology (IT) is crucial in realising the abundant benefits of supply chain management implementation. Information technology possesses enormous powers of collecting, sharing, analysing, integrating and interpreting information across the business network. Through the use of advanced information technology many trade-offs to optimise supply chain can be eliminated, or, at the very least, their impact can be reduced. (Simchi-Levi et al, 2000). The promise of inter-company and customer integration over the internet suggests unlimited potential to gain productivity through information technology (Parker, 2000). EDI can improve the way a firm interacts with its customers and does business. E-commerce and e-enabled capabilities that rely on efficient data transfer have potential to revolutionise the existing business environment. IT offers structural alternatives that facilitate centralised strategic planning and day to day execution on a decentralised basis (Bowersox & Daugherty, 1995).

CRM as a concept is outlined around the rapidly evolving information technology. It is a technology driven approach. Its components include traditional ways of customer contact like telephone, mail, personnel selling, after sales services etc. as well as advanced web enabled customer database, call centres, automatic complaint handling, electronic point of sales and integrated information systems of digital world. Gathering information and segmenting information is essential to develop deep customer insight to conduct business effectively. Therefore, it is vital to carefully plan and execute the process of CRM and build it into organisation structure.

CRM components include traditional ways like telephone, mail, personnel selling, as well as advanced web enabled customer database, call centres, automatic complaint handling, and integrated information systems of digital world.

The increase in processing power at a decreasing cost has enabled the growth of sophisticated intrafirm, interfirm and customer focused information systems. According to Cooke (1999) information technology forms the backbone of supply chains and managing the flow of information is as important as the physical flow. Effective CRM implementation requires a front line information system that shares relevant customer information across all interface units (Sheth & Parvatiyar, 2001). The organisation can harvest a great deal of profits by smartly leveraging one solution over other. Today supply chain solution providers are talking about a complete business solution integrating SCM and CRM technologies or a complete suite comprising ERP (transaction processing), SCM (Efficiency focused organising tool) and CRM (Customer facing solution).

Relationship and Alliances

Both SCM and CRM endorse the management of soft issues in business progression. Marien (2000), rejects the core emphasis of focus on information technology (IT) solutions and asserts that the "soft" side of SCM implementation is as important as the "hard" side of information technology. In the enthusiasm of implementing CRM solutions, some companies seem to be overlooking the basic consideration that would make such initiatives successful – that is the formulation of CRM strategy and relationship program within the firm and with perspective customers (Sheth & Parvatiyar, 2001). In human relationship there is perceived risk of dissatisfaction among customer or seller from any business transaction; two variables – trust and commitment to each other, can reduce this risk (Morgan & Hunt, 1994). If companies simply install CRM applications, it works as mere operational tool and does not produce desirable results. If IT solutions are regarded as the body or infrastructural necessity then relationship management is certainly the soul or pathway to effectively and efficiently transform any business strategy into great success.

Human Resource Management (HRM)

Human resources management takes care of designing job descriptions and manages recognition, compensation, career paths, and human capital development. Involving employees in change endeavours is significant for the success of any business strategy. Though HRM as a factor in enabling successful supply chain performance is rated slightly less important than technology and strategic alliances, and organisational infrastructure (Marien, 2000), it is nevertheless important to drive successful implementation of business strategies.

The most important and substantially challenging task is to find practitioners and facilitators to lead and execute the implementation of SCM and CRM processes. These relatively new paradigms require co-ordination amongst the various functions within and beyond the organisation. Limited employee empowerment to make independent decisions to ensure ultimate customer satisfaction is crucial (Shainesh & Mohan, 2001). Many companies are struggling with the difficult task of finding people who are knowledgeable in supply chain theory and practices (Marien, 2000). Management of people and their involvement is essential for success of SCM and CRM strategies.

Objectives

Today business landscape has become more competitive, the ability of firms to acquire and keep customers has become increasingly important for long term success. In the highly fluctuating global market the biggest challenge that corporate world faces is to deliver customer satisfaction and maintain the bottom-line of the balance sheet. In other words managing the business activities in effective and efficient manner. It is reassuring to note that Indian organisations' view of increasing customer satisfaction has surpassed the goal of maximising profit, and delivering highest value to shareholders. They have realised that short-term profit-making does not lead to accomplishing long-term growth and profit maximisation and hence have taken customer satisfaction on priority (Sahay et al, 2000). The objective of a typical supply chain is to provide the most effective strategic solutions in terms of cost and/or service (Handfield, 1999).

The objectives of SCM and CRM in no way contradict the business objectives of organisations. The purpose of implementing supply chain management is imparting higher customer satisfaction, increasing profit, expanding revenue base, reducing inventory, lowering product cost and increasing reliability of products (Sahay et al, 2000). This trend confirms the findings at global level by many scholars (Cooper et al, 1993; Lambert & Pagh, 1997; Bowersox & Closs, 1993; Mentzor, 2001).

Table 1: Objectives of Supply Chain Management

Supply Chain objectives	Sahay et al (2001)	Bower-sox & Closs (1995); Cavinito (1991) Handfield (1999)	Lalonde (1997); Langley & Holcomb (1992)	Cooper (1993) Cooper & Ellram (1991)	Stevens (1989) Christo-pher (1999)
Lowering cost	√	√	√		√
Inventory reduction	√			√	√
Increasing ROI	√		√		
Increasing customer satisfaction	√	√	√	√	√
Increasing market share	√			√	
Increasing revenue	√	√		√	
Increasing value	√		√	√	
Increasing profit	√		√		√

Table 2: Objectives of Customer Relationship Management

CRM Objectives	Golden Berg (2000)	Sheth & Parvatiyar (1995; 2001)	Sheth & Sisodia (1995)	Stor-backa et al	(1994); Rust & Zahorik (1993)
Increasing marketing productivity		√	√		
Sales retention	√			√	√
Improving service level		√		√	
Increasing customer satisfaction	√	√	√	√	√
Increasing market share	√			√	√
Increasing revenue	√	√		√	
Increasing mutual value		√	√		
Reducing sales cost	√	√			
Increasing profit	√			√	√

Simchi-Levi D., Kaminsky P. & Simchi-Levi E. (2000), "Customer Value and Supply Chain Management, Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, Irwin McGraw-Hill.

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□

Society is always taken by surprise at any new example of common sense.

– Ralph Waldo Emerson

There is little difference in people, but that little difference makes a big difference. That little difference is attitude. The big difference is whether it is positive or negative.

– W. Clement Stone

e-CRM – Issues of Semantics, Domain & Implementation

Venkatesh Umashankar

There are debates about the concept of e-CRM as it has evolved and as it stands today. The present paper tries to delve into and explain the realms of e-CRM as a concept and tool by tracing an evolutionary path starting from the origins of Relationship Marketing through Customer Relationship Management and then to the conception of e-CRM. CRM as a concept has been explained by identifying the major components and implementation imperatives. The paper also discusses the problems in implementing e-CRM solutions in organisations emphasizing upon the need to first prepare the ground well for the fruitful implementation of such solutions.

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The term relationship marketing has come to vogue both in the academic (Hunt & Morgan, 1994; Morgan & Hunt, 1994) and business (Levine, 1993; McKenna, 1991) press. The original idea of Relationship Marketing, as enunciated by Levitt, (1983), suggested that the relationship between a seller and a buyer does not end with the sale being made. In a large and increasing number of transactions the relationship actually intensifies subsequent to the sale and this becomes a central determinant of the buyers' choice of the seller in the event of re-purchase. Levitt termed the relationship between buyers and sellers as inextricable, inescapable and profound. Based on this premise a whole edifice of relationship marketing has been built wherein relationship management is seen as the cornerstone of retaining existing customers (and attracting new ones). The logic is also that in comparison, it is easier as well as more cost effective retaining customers than creating new ones (Berry, 1983; Rosenberg et al, 1984; Reicheld et al, 1990). The concept of relationship marketing has been broadening beyond relationships dealing with one's customers (Hunt & Morgan, 1994). Parvatiyar and Sheth (1994), for example, view relationship marketing as an orientation "that seeks to develop close interactions with selected customers, suppliers and competitors for value creation through cooperative and collaborative efforts". Because of the need to ensure that all the dimensions of both external and internal markets are addressed in an integrated and cohesive manner and to achieve a sharper focus on the goal of building long-term customer relationships, Payne et al, (1995) advocated the development of relationship marketing plan. The purpose of this plan according to them is to ensure the highest degree of integration and focus across the six critical markets (Fig. 1) that form the platform for successful customer relationships. This conception is also in concurrence, in terms of the scope of relationship marketing encompassing various internal and external publics, with the postulate of Parvatiyar and Sheth (1994).

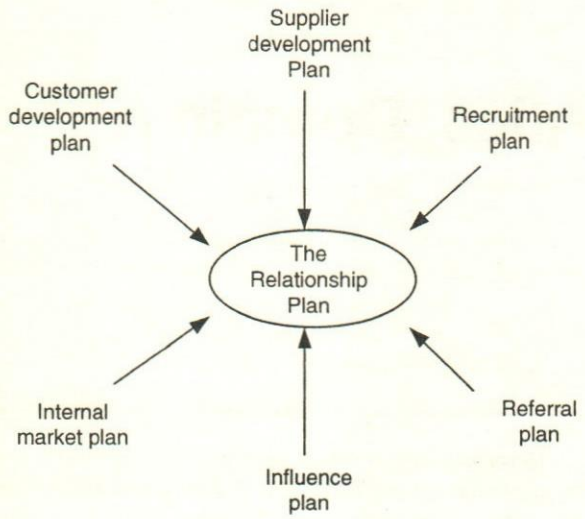

Fig. 1.

(Payne, Adrian, Martin Christopher, Moira Clark & Helen Peck (1995) Relationship Marketing for Competitive Advantage: Winning and Keeping Customers, Oxford: Butterworth Heinemann.)

Payne et al, (1995) also conceptualised what they called the 'Gold Card' customers who they defined as the 20 per cent of the total customer base who provide 80 per cent of the profit. This obviously makes it a more pressing imperative for firms to be able to firstly, identify these key customers of strategic importance; keep track of their purchase behaviour and decision making process and serve their needs proactively.

CRM: Domain & Definition

Given the domain of relationship marketing as defined in Fig. 1, it is clear that the original conception is a very wide one, encompassing, connecting and integrating all kinds of internal and external publics with whom relationships have to be maintained. This aspect of the multiplicity and variety of publics both external and internal, needs to be expounded here as this has bearing on further discussions on the domain of CRM (and therefore eCRM).

The efficacy and merits of relationship marketing can also be further expounded and enhanced by looking at the transaction process from the standpoint of the consumer and delving into the behavioural and other motivation(s) of why customers would desire to engage in relational marketing. Looking from the perspective of the customer, the fundamental basis of relationship marketing is that customers like to reduce choices by engaging in an ongoing loyalty relationship with marketers, reflected in the continuity of patronage and maintenance of an ongoing connectedness over time with the marketer. So much so that reducing choices and thereby engaging in relational market bahaviour is a prevalent, natural and normal consumer practice. It has been postulated that consumers engage in relational market behaviour to achieve greater efficiency in their decision making, to reduce the task of information processing, to achieve more cognitive consistency in their decisions and to reduce the perceived risks associated with future choices (Sheth & Parvatiyar, 1995).

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The concept of relationship marketing has been used to reflect a number of differing themes or perspectives. One view assumes a promotional perspective and emphasizes that relationship marketing will redirect the flow of promotional monies toward targeted customers often identified through marketing databases of current and potential purchasers while a second view stresses focusing on individual customers and building a close relationship with them or treating each customer as a segment of one. A third view focuses on keeping or retaining customers by using a variety of customer bonding techniques and staying in touch with the customer after the sale is made. A fourth view takes a more strategic perspective by putting the customer first and shifting the role of marketing from manipulating the customer (telling and selling) to genuine customer involvement (communicating and sharing the knowledge). Although there is a range of perspectives on relationship marketing, it historically has been associated with attempts by firms to develop long-term relationships with certain customers or key accounts (Nevin, 1995).

The two main objectives of relationship marketing are: the design of long-term relationships with customers to enhance value shares for both parties and the extension of the long-term relationship idea to vertical and horizontal cooperation partners (Juttner & Wehrli, 1995). Academics have come to realize that many of the relationships central to the success of any firm may not involve end-use customers at all (Hunt & Morgan, 1994).

The benefits of relationship marketing have been well documented over time, be it the economics of retention of existing customers over creation of new ones as described above, the competitive advantage that accrues to the firm (McKenna, 1991) when they

practice relationship marketing. In business-to-business marketing scenario especially, close relationships bordering and/or based on partnership have evolved wherein there are examples of organisations working closely with firms both backward and forward to derive benefits of the supply chain. But this somehow gives the impression that one is only concerned with inventories and cost controls. Beyond this what is also happening is that vendor organisations are working with clients in the areas of product design and redesign, innovations, coping with backward flows of new product/schedule demands as well as pre-empting these flows by proposing and driving new changes proactively.

In the FMCG category also, market research does have a major thrust area wherein existing customers are researched for developing insights into existing or new offerings. Even mass manufacturing based organisations, among others, are adopting mass customisation as a concept and trying to involve the consumer in the design, development and marketing processes of their respective companies. It is a moot point that technological advancements especially in the sphere of information technology have driven these initiatives by making them possible.

It can be therefore safely said today that relationship marketing is a route to survival and success for organisations vying for a share of the consumers' franchise. And also that it is fast becoming one of the minimum preconditions for retaining customers, as in a highly competitive marketing environment it is difficult to envisage profitable survival for business organisations with firms and sectors continuously approaching perfect market conditions. A market condition wherein economic profits become unviable and firms are supposed to work within the framework of what is conceptualised by economists as 'normal profits'. The fundamental principle therefore of relationship marketing is—the greater the level of customer satisfaction with the 'relationship', not just the product of the service, the greater probability that they will stay with the organisation.

Customer Relationship Management: The Concept

Having delved into the antecedents of Relationship Marketing and its domain, we can now focus attention on the conceptualisation of Customer Relationship Management (CRM). The dichotomy of what CRM should be and what it is perceived as by the users and implementers, is clear when a report published by Ernst and Young, the consulting firm, defines CRM as any strategy for managing customers and customer relationships, whereas firms themselves define CRM, which has been used for several years, as anything from data mining to developing strong customer relationships to segmenting services. The same report also found that 63 per cent of financial services firms do not know if there has been a change in customer profitability since they implemented CRM strategies. In addition it also reported that 60 per cent of these firms do not know if CRM programmes help cross-sell products even though the survey respondents indicated clearly and strongly that the most pressing strategic objective for both their CRM and e-commerce investments was retaining customers. In addition, 47 per cent of the firms said the ability to access all relevant customer information is the biggest challenge in implementing CRM strategies (Ernst & Young, 1999). This obviously is not deterring companies from jumping on to the CRM bandwagon as according to an October 2000 report by the Aberdeen Group the CRM market totalled $8 billion in 1999 and is forecasted to grow to $24 billion by 2003 (Chase, 2001).

Seemingly most firms have yet to create a working model to differentiate themselves in their respective markets and increase market share using CRM. Instead, they are trying out one of three models: competing on price, providing information on their sites to help customers identify and pursue life goals. Then there is the bifurcation between the supply side (Partner Relationship Management) and demand side relationships (CRM) that needs to be managed by the firm. The former is supposed to revolutionize the way firms relate to their suppliers and the latter is to do the same for customers. This categorisation obviously indicates the limits of CRM, within the framework of Relationship Marketing, as being restricted and focused to the customer end or demand end of the chain. If we define it by the available software, CRM is the process by which a company can manage sales leads and track customer interactions. But this definition does not look complete. What marketers really want is a comprehensive process by which they can manage their customers differentially.

CRM is any strategy for managing customers and customer relationships. The ability to access all relevant customer information is the biggest challenge in implementing CRM strategies.

What this means therefore is that the need for CRM is to provide ways and means to measure and manage customer loyalty across the enterprise, at all contact points. To achieve this goal, CRM must ultimately acknowledge and integrate into its conception the proven impact of traditional frequency/loyalty-marketing

models. Regardless of how customised and unique the firm may make each customer's experience with itself, the importance and power of points, miles, upgrades and elite memberships to create compelling customer bonds cannot be disregarded. It is likely therefore that CRM and traditional frequency/loyalty strategies will continue to evolve together into a comprehensive marketing model designed to simultaneously increase the customer base while increasing the value of best customers – a kind of perpetual motion machine (Barlow, 2000).

Another interesting proposition put forth by Child et al., (1995) is that of "Continuous Relationship Management" defined as a marketing approach in which a company seeks to build close relationship with its current and potential customers in order to encourage them to concentrate a disproportionately high share of their value with it. The company pursues this objective by developing and continuously updating a deep understanding of each customer's present and future needs, and by tailoring the choice, delivery and communication of its value proposition to these needs as closely as is economically feasible. Coupe (1999) goes on to stress the increased importance of CRM as companies shift their focus from chasing share of market to the pursuit of share of customer. His conception of CRM counts in vision, process, a way of doing business, turning data into strategy and empowering the communicators but what it counts out is more important to note, which includes – software, modelling and data mining, a new data warehouse or call centre or a department within marketing.

Kopf (2000) reported researchers at Ovum Inc. defining CRM as, "a management discipline concerned with how organisations can increase retention of their most profitable customers, while simultaneously reducing cost and increasing value of interactions; thereby maximizing profits. In managing relationships with customers, organisations employ a range of technology and processes." Commenting on the need to rationalise this definition he goes on further to state that a "simpler definition would be that CRM lets businesses integrate marketing, sales and service functions to better serve customers on an individual basis (the so-called "market of one") – but it's not easy to explain how they go about doing that. Needless to say, the proliferation of nebulous definitions makes CRM a tough bottomline decision".

As an interim conclusion at this stage it would be relevant to state that at this juncture the major issue is the way CRM is perceived by user firms or touted (a milder word than 'touted' may be used here) by vendors of CRM solutions. The basic dichotomy is that user firms are looking at CRM (solutions/applications) more as ends per se rather than considering and using them as means to practice, if at least partially, principles of relationship marketing. On the other hand this cause is not being helped at all by vendor firms, and the scenario vis-à-vis CRM solutions has started emulating and imitating the cycle that corporate world has already witnessed, with the attempted implementation of various ERP solutions and the resultant chaos frequently caused by it. Secondly, it can also be concluded that there are too many fragmented and piecemeal approaches to CRM that do not integrate (either with legacy systems on one hand or with other CRM patches available and/or being used currently by the organisation), into a holistic solution. Seemingly there are as many patches or solutions available and pushed aggressively as there are vendors. A telling comment by Child et al, (1995) is relevant here which says – "Continuous relationships with customers can, in fact, be achieved – Classic marketing skills, not expensive IT and neural networks, are what's needed".

As Robinson (2000) reports – "because CRM's tentacles reach into so many areas of a business, a CRM system is not something that can be implemented out of a box. Automating CRM is an ongoing process, and no single vendor is able to supply all pieces". Implementing firms have to understand and realise that CRM is a business strategy and these business strategies do not happen overnight.

Automating CRM is an ongoing process, and no single vendor is able to supply all pieces.

It would be interesting here to interject and again remind ourselves about CRM being a means and not an end by quoting Ruediger et al, (1997) who listed certain myths in CRM including the one that – "excellent CRM capabilities constitute a successful strategy". In a study of banks practicing database marketing they reported many banks being tempted to spend time and effort building CRM capabilities in the belief that these alone will deliver success. But without a clear, compelling value proposition, they found the power of marketing limited. Instead, they suggested that firms develop value propositions that give them an edge over product-focused rivals. They can then use CRM tools to extract maximum value from their competitive advantage. An emphasis on relationships can indeed become part of their strategy, but first they must make sure that enough customers value the proposition sufficiently to make it profitable, and that, they can deliver on that promise. Once a powerful set of value propositions has been

defined, a CRM approach can be used to identify which offers are likely to be most attractive to which people. Using databases to test and refine offers can be an element of a strategy, but it is not a strategy in itself. When integrating a CRM system, a company must first review the business processes, applications and technologies it uses to deal with customers. It should also consider its schedule, budget and what it hopes to gain from a CRM implementation.

Areas of CRM Focus

The three main areas that CRM systems focus on are sales, customer service and marketing automation.

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Sales, also called sales force automation, includes the following five areas:

- Field sales.
- Call centre telephone sales.
- Third-party brokers, distributors or agents.
- Retail.
- E-commerce, which is sometimes referred to as technology-enabled selling.

Customer service and support includes the following:

- Field service and dispatch technicians.
- Internet-based service or self-service via a Web site.
- Call centres that handle all channels of customer contact, not just voice.

Marketing automation differs from the other two categories because it doesn't involve customer contact. It focuses on analysing and automating marketing processes.

Marketing automation products include the following:

- Data-cleansing tools.
- Data analysis or business intelligence tools for ad hoc querying, reporting and analysing customer information, plus a data warehouse or data mart to support strategic decisions.
- Content-management applications that allow a company's employees to view and access business rules for marketing to customers.
- A campaign management system, which is a database management tool used by marketers to design campaigns and track their impact on various customer segments over time.

Depending on a company's goals, the tools it chooses would be integrated across the main areas of sales, service and marketing. The technology includes databases, data warehouses, servers and other hardware, telephony systems, software for business intelligence, workflow management and e-commerce, middleware and system administration management tools.

e-CRM

By this stage we have some understanding of the evolution and development of the concept of Relationship Marketing leading to the concept of CRM. This discussion was to provide the background and philosophy on which e-CRM edifice is built upon. The semantic confusion surrounding the terminology e-CRM is at such a base level that there is divided opinion on the expansion of the letter 'e' itself, that is, whether it stands for 'electronic' or 'enterprise' ...as these two are used very frequently to define and describe the term.

In simple terms, e-CRM provides companies with a means to conduct interactive, personalized and relevant communications with customers across both electronic and traditional channels. It utilizes a complete view of the customer to make decisions about messaging, offers, and channel delivery. It synchronizes communications across otherwise disjointed customer-facing systems. It adheres to permission-based practices, respecting individuals' preferences for how and whether they wish to communicate with you. And it focuses on understanding how the economics of customer relationships impact the business. Advocates of e-CRM recognize that a comprehensive understanding of customer activities, personalization, relevance, permission, timeliness, and metrics are all a means to an end – its customers.

e-CRM provides companies with a means to conduct interactive, personalized and relevant communications with customers across both electronic and traditional channels.

e-CRM therefore, however we choose to define it, must be the means to serve the three areas of– sales, customer service and support, and marketing automation.

Coming back to the semantic debate Frawley (2000) explains the various interpretations of the term 'e' in eCRM as–

Electronic channels: New electronic channels such as the Web and personalized emessaging have become the medium for fast, interactive and economic customer communications, challenging companies to keep pace with this increased velocity.

Enterprise: Through e-CRM, a company gains the means to touch and shape a customer's experience across the entire organisation, reaching beyond just the bounds of marketing to sales, services and corner offices–whose occupants need to understand and assess customer behaviour. An e-CRM strategy relies heavily on the construction and maintenance of a data warehouse that provides consolidated, detailed views of individual customers, cross-channel customer behaviour, and communications history.

Empowerment: In this new age, e-CRM strategies must be structured to accommodate customers, who now have the power to decide when and how to communicate with the company and through which channel. With the ability to opt out, consumers decide which firms earn the privilege to "talk" with them. In light of this new consumer empowerment, an e-CRM solution must be structured to deliver timely, pertinent, valuable information that a consumer accepts in exchange for his or her attention.

Economics: Too many companies execute customer-communication strategies with little effort or ability to understand the economics of customer relationships and channel delivery choices. Yet, customer economics drives smart asset-allocation decisions, directing money and efforts at individuals likely to provide the greatest return on customer-communication initiatives.

Evaluation: Understanding customer economics relies on a company's ability to attribute customer behaviour to marketing programs, evaluate customer interactions along various customer touch-point channels, and compare anticipated ROI against actual returns through customer analytic reporting. Evaluation of results allows companies, to continuously refine and improve efforts, to optimise relationships with customers.

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External information: The use of customer-sanctioned external information can be employed to further understand customer needs. This information can be gained from such sources as third-party information networks and Web-page profiler applications, under the condition that companies adhere to strict consumer opt-in rules and privacy concerns.

Conscious of each 'e' that will shape its future business, a company builds an e-CRM solution in order to optimise relationships between itself and its customers. For each company, optimisation might have different and multiple objectives: such as increasing the number of customers; increasing customer profitability; growing revenue; driving customers through cost-effective channels; cross-selling; and retaining customers. Therefore, e-CRM transcends sales, marketing and services within an organisation. It applies processes and tools to coordinate communication across the many differing customer-facing systems spanning the organisation and finally provides metrics to quickly measure the impact of customer-communications strategies, following the economic and ROI principles.

Implementing e-CRM Solution

The first and foremost rule of implementation of should be that the search for software package, that embodies what e-CRM is for the firm, comes last in a series of sequential steps. For ERP, that package was SAP, for e-CRM it is Siebel. These vendors have many strengths, but as Keen (2000) says, software does not substitute for clarity of business model, quality of business process base, IT infrastructure design and operation, integration costs or effective use of the software tools and data.

Regardless of the companies' objectives, a e-CRM solution must possess certain key characteristics (Frawley, 2000): It must be:

- Driven by a data warehouse.
- Focused on a multi-channel view of customer behaviour.
- Based on consistent metrics to assess customer actions across channels.
- Built to accommodate the new market dynamics that place the customer in control.

- Structured to identify a customer's profitability or profit potential, and to determine effective investment allocation decisions accordingly.
- Scalable to meet growth and performance needs.

In an e-CRM solution, the data warehouse or customer data mart contains a consolidated and comprehensive view of the customer. The warehouse provides the broadest possible profile of the customer, needed to determine an appropriate course of action, the most effective offer to make, and the best channel to deliver your pertinent message.

Organisations today have different methods for interacting with their customers. An e-CRM solution must have applications that coordinate or synchronize customer communications across channels and do so in real time. These applications must be able to capture customer transactions across disparate touch points and store that information in a temporary data store for immediate assessment and response. In addition, these applications must also feed information captured from touch points into the data warehouse, to broaden the customer profile obtained from back-end transactional systems and external sources.

An e-CRM solution must have applications that coordinate or synchronize customer communications across channels and do so in real time.

Today, many companies spend lot of capital communicating with customers, but spend little time and effort determining the effectiveness of those campaigns. e-CRM provides the means to customer communications efforts. e-CRM is a continuous, iterative process. It employs customer analytic tools to: project outcomes of customer communications initiatives; capture results; attribute changes in customer behaviour to a particular communication; and assess those results to improve subsequent customer interactions and return on investment. While a company can encourage customers to communicate through particular channels, the consumer ultimately decides how and when he or she will contact the company and grants explicit permission about how the company can communicate with him or her. Thus, an e-CRM strategy must deliver timely, pertinent messaging that a customer or prospect will gladly accept. By adhering to opt-in, permission marketing, a e-CRM solution makes marketers sensitive to when and how to communicate – i.e. email, wireless phones, etc. A customer may decide to opt in or opt out of dialogue across a particular channel – particularly email. Therefore, a e-CRM strategy must contain permission-based rules to avoid irritating customers.

e-CRM systems tend to quickly accumulate data, which is continuously manipulated by analytical tools to refine marketing processes, messages and strategies. The difference between a "test environment" and real-world application is often measured by scale and adaptability to dynamically changing situations. "Off-the-shelf" solutions may implement quickly, but will crumble from rigid and proprietary limitations that preclude the integration of additional functions and the ability to scale to meet future growth and dynamic business demands.

Finally, before implementation the following aspects need to be taken care of and accomplished –

- Define the business objectives
- Design the customer experience; it is after all customer relationship management.
- Focus on the use of e-CRM: customer segmentation, pricing, individual personalization and service.
- Ensure from the start a plan for multi-channel e-CRM integration.
- The implementing firm must think in terms of process, not system: marketing, selling, service. Therefore define business processes and make changes needed to support its goals.

When all the above are taken care of, then and only then think of software. The last stage is deriving the plan and time table to implement processes, create and erect the necessary data warehouse to attain a consolidate view of the customer, and select, implement and integrate the required e-CRM applications; keeping in mind the simple value driver that e-CRM is a tool that helps implement relational marketing strategies, rather than being an end in itself.

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(Child et al, 1997). The fact that developing countries such as India missed out on the technological pie in the past 50 years has made them realize the need to introduce IT in a big way to withstand competition and build competitiveness. Though CRM has tremendous potential to build firm level competitiveness (Peppard, 2000; Parvatiyar & Sheth, 2000), it is often conceived as an IT

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problem approached wrongly. If the IT bug is carried too far, we may soon miss the opportunity to use its potential completely. We should not let it go; the potential is enormous and should be exploited carefully. We will see why there is a threat to CRM's survival, and how it can be saved.

The technological push that IT has given to business across the globe has also brought to focus the importance of CRM in the success of a company.

On the demand side, industry in general is under the grip of tremendous competitive pressures and has reacted quite enthusiastically to the whole concept of CRM. It is like a new mad rush, probably a new whip for the CEO, who did not have a mission after the ERP wave had died down. One hears of top-level people talking of 'implementing CRM', as if it is 'amruit' on line. The confidence they exhibit also gives an impression that the companies are aware of what they are getting into. Also, one does not want to be left behind. If the others are doing it, there must be some worth in it! The impatience of companies to go on board with CRM also leaves them with no time to fully understand the concepts and philosophy behind it. Coming at a time when the IT wave is getting bigger by the day (disregarding the temporary slowdown), it is also being perceived as a specialised IT initiative.

On the supply side, consultants have not failed to notice the huge demand that is building up. With the ERP wave dying down, this is a Godsend opportunity to direct their energies to. They are quick to come up with their offerings of what each one portrays as the best. Their compulsions are no different from what the industry compulsions are – one needs to stay ahead of the competition. They are not always worried about perfecting their offerings either. After all, who is worried about the minute details, when what is important is to capture the mind share and market share. Perfecting would take place with time. Alas! The same old story of BPR and ERP seems to be repeating. To top it all, for a change this malaise is there the world over. The net result is that we are creating a make believe world where IT is the crown prince and customer is a bystander.

CRM Practices: Strengths & Weaknesses

How can we ensure that the histories of ERP, BPR and TQM not to repeat with CRM too. We will make a quick review of the strengths and weaknesses of the current approaches to CRM with a view to make it more robust and long sustaining.

Strengths

In the early days of development, a craftsman or a manufacturer or a service provider could identify their customers' needs and solutions appropriately. Later when scale economies became essential for survival and widespread distribution became necessary to meet growing customer demand, intermediaries came into the picture in the form of distributors, dealers and retailers. Such intermediaries also created communication barriers between managers and customers. Since the flooding of marketing literature with customer at the centre since the eighties, the need to understand the changing needs of customers has been well appreciated. The growing distance between manufacturer and consumers has only created a void, which CRM is supposed to fill. The positive contributions of the CRM approaches prevailing now are the following:

- A major contribution of IT has been its ability to support the development of linkages between product/service offerers and the final customers in order to understand their requirements. Indeed, it is a major advancement from the yester years when knowledge of customer was primitive.
- Essentially all CRM tools track the buying pattern of their customers. Their IT power enables them to aggregate and analyze all customer data the way they want. This leads to better inventory management, customer satisfaction and improved operations.

All CRM tools track the buying pattern of customers. This leads to better inventory management, customer satisfaction and improved operations.

- Disregarding the number of customers and the number of transactions, the current CRM approaches enable companies to have some clarity about their customers. They can also track the same customers anywhere in the world as has been happening in the case of airlines and logistics service providers.

In short, CRM has been built to bridge the gap that existed between the solution providers and the beneficiaries.

Weaknesses

Broadly, there are two types of weaknesses, one at the conceptual level and the other in implementation. We shall first discuss the challenges in implementation before considering the conceptual issues and suggestions for further strengthening CRM.

- Not all employees may have the right attitude towards CRM if they are not convinced about the need to track customers and their buying pattern. Very often, discussion on awareness creation and the logic behind CRM are restricted to senior and top management, led by outside consultants. The assumption that the thoughts emerging out of such exercise would disseminate to others down the line through further workshops is not always true. Since the bulk of implementation of CRM is handled by people at lower levels, it becomes a mechanical exercise for them (please see box for a case study).

CRM at a 5-Star Hotel

After a long day. I returned to my well furnished room and decided to have a 'dhania dosa', their special. I rang their Room Service, and a sweet lady's voice said, "good evening, Mr Ramachandran. What can I do for you?" (I knew that my name would have popped up on her screen as soon as I called). "Can I have a dhania dosa and a lassi in the room please?", I asked. The order was delivered after the normal 20 minutes wait. After a while the same lady again called me to ask how I liked the dosa. I said it was for the first time that I was having it, and I liked it. However, as a responsible customer, I made a couple of suggestions to make the product better, which were well accepted by her. She promised to pass them over to the chef. Then she asked whether I was visiting their city for the first time (means my name was not in their database earlier) to which I said 'no'. They she asked whether I drank wine to which I said 'yes'. She immediately asked me whether she could send me a glass of red wine (no choice!) as complimentary welcome drink. I felt a little elated with this service, and honestly thought it was all because of my suggestions to improve the 'dhania dosa'. The drink came in no time with a Room Services Manager accompanying. He asked me about the dosa and ensured that I was quite comfortable. After sometime, I decided that I should share some more of my thoughts around the dhaniya dosa, again as customer feedback. Accordingly, I wrote a one-page note suggesting new product possibilities and called up the Customer Service where again the same lady came on line. I told her that I had prepared a note for her and she could send someone to collect it. A person came in another 15 minutes. I spoke to the same lady a couple of times later for something else but there was absolutely no mention about my note any time. I stayed in the hotel for another 20 hours or so but nobody in the hotel called me to acknowledge receipt of my note if not a word of appreciation. While checking out I said, long live CRM!

- Many organisations do not examine the cost of hardware and software required to have a strong CRM. They often get puzzled with offers of new version of the same package and the long-term implications of recovering the investments made. Advocates of CRM often forget to emphasize the importance of analysing the costs and benefits while following a CRM approach.
- For want of consistent efforts on the part of management, after some time CRM processes may become too mechanical. There are several instances quoted in the press about the stereotyped apology letter and "will do better next time", promise letters sent to customers without attaching any value to such promises. In one instance, it is reported that the CRM manager wrote on the complaint letter asking his assistant to send the "SOB" letter. Unfortunately the assistant stapled that along with the profuse apologies from the manager!
- Computer packages used for CRM could handle enormous amounts of data simultaneously. Such huge quantity of data itself is posing as a problem for effective CRM. Many people do not know what to do with all the data and looking for the grain in the huge pile of chaff is difficult.
- Disillusionment with the consultant driven approaches such as ERP, BPR and TQM had raised questions in the minds of several managers about the relevance and practicality of the current CRM approaches. They would not like to accept the consultants' words blindly.
- On top of the above comes the problem of availability of time for the staff to address customer needs as per CRM requirements. An employee who is already stretched to the limit even otherwise may not be able to make full use of the data available.

We shall now examine the weaknesses in terms of conceptual dimensions:

- Most CRM approaches collect data on the past buying behaviour of customers and project it as the possible behaviour in future too. This could be a dangerous assumption in a number of cases. Customer wants do change based on the criticality of the function and the level of dissatisfaction the customer has with the existing options (Ramachandran 2001). Since criticality itself is a function of the mix of needs and changing life style, it is very difficult to assume that a computerised database about one person would be relevant for future behaviour too. Customer wants are dynamic and organisations need to understand their latent

wants in as clear a term as possible. An analysis of the success and failure of products in the market would show that one of the key reasons determining their performance is the maturity of latent want. It is very difficult to assume that CRM database can provide answers to such questions, except some trends. Indeed, we need to recognise that CRM can create patterns of behaviour, which have not been noticed by customers themselves.

- The mechanical application of customer data could often lead to spurious correlation. For instance, just because someone has occupied the last few rows in an aircraft, it does not mean that he or she always wants to have the last row. They may be getting the last row for a number of reasons. Similarly, it is dangerous to assume that some people prefer middle seats in the aircraft based on similar correlation analysis. Also, in the case study given in the box it may not be correct to assume that the person calling from a guest room will be the person on whose name the room has been booked.

Most CRM approaches collect data on the past buying behaviour of customers and project it as the possible behaviour in future too. This could be a dangerous assumption in a number of cases.

- Understanding the buying process of customers is very crucial for completing a sale. This involves a number of processes such as information collection, actual buying, delivery, payment, consumption, post sales service and so on. Some of these processes may be as important as the core product features particularly in service businesses. Lack of sensitivity towards the role of these processes was one of the major reasons why a large number of dot coms failed. A full fledged CRM should try to capture the requirements of customer at every stage starting with the collection of information till the disposal of the waste. This needs additional efforts and new research technologies such as participant observation. We have found that one of the most effective ways of collecting customer feedback is not survey method but observation of the consumer and customer at different stages in the process of buying and consumption.
- Human beings are emotional and not morons. Firms have to recognise this and understand customer needs beyond the obvious. Calling a guest by name does not extend personalised warmth and hospitality, as we saw in the 5 star hotel case (see box).
- Had there been an acknowledgment or appreciation for my note on dhaniya dosa, as mentioned in the 5-star hotel case, my relationship with that hotel would have been much warmer and longer lasting. As is clear from the case, the hotel employee was doing her job purely mechanically. it is also not clear whether they would act on suggestions from customers.

In short, existing CRM approaches take care of the requirements of the situation only partially. It is also for this reason that the fad about CRM is vanishing fast. Unfortunately, there is the tendency to throw the baby with the bath water. Let us not allow it to happen. CRM could be modified to incorporate activities and processes to eliminate its current state of weaknesses. CRM is a concept which can only be operationalised through a number of tools. It is the efficient and effective synthesis of a number of customer feedback tools integrated into a CRM framework that will provide rich data to develop long term customer relationship.

Methodologies

We shall discuss some of the methodologies used in other fields, but finding new applications in CRM. An important question is how to identify areas of dissatisfaction so that firms can develop new CRM approaches to eliminate them. Very often, customers are unhappy about more than one aspect of the products and processes involved in their purchase and consumption. Therefore, it is important to identify the extent of dissatisfaction customers have with each of the key features. The intensity of dissatisfaction depends on the extent of criticality of the particular feature to the customer, and also on the extent of dissatisfaction created by it.

It is important to identify the extent of dissatisfaction customers have with each of the key features.

Thus, customer dissatisfaction should be analyzed on two dimensions. One is to know the nature of want in

terms of whether it is essential to have the product or not. The other axis reflects the extent of dissatisfaction customers have with the existing product. The significance and impact of it on the customer depends also where the product falls, on the Desirable – Essential continuum (Figure 1). The effort required to convert the wants into actual purchase will be more for "Desirables" compared to "Essentials" because of the priority fixed by customers in their purchase decision ("wants are unlimited but the means to satisfy them are limited"). Besides, dissatisfaction is influenced by the number and quality of choice customers have for solving their problems.

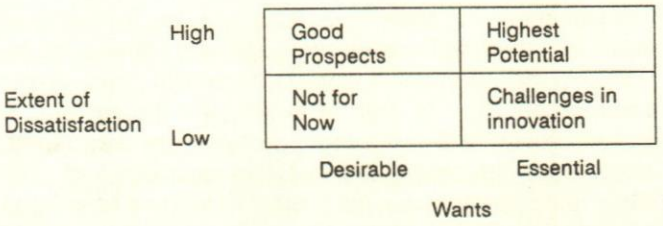

Fig. 1. ZCD Matrix for Opportunity Analysis

In this method, customers are asked to first rank the dimensions in order of their significance to them. Accordingly, the most essential attribute would be ranked one and so on with 'Desirable' attributes following. The same attributes are subsequently rated for their significance on a 5 or 7 point scale to find the absolute level of significance. These analyses would bring out the areas for further action. The result of this exercise can be plotted using the matrix given in Figure 2.

Scales developed and used based on the principles of personal construct theory (Bannister & Fransella, 1986) are found to be useful in answering questions as to why people consume certain products, and which attributes are significant to them. Surveys using both quantitative and qualitative analysis would bring out changes, if any, in the pattern of distribution for 'Extent of Dissatisfaction' for each attribute for different locations or segments.

It is often easier to create dissatisfaction in the minds of customers and virtually move the customers from 'Low' to 'High' on the extent of dissatisfaction (as in Fig. 1) for a 'Desirable' product when new features are introduced by a competitor. This is also because of the "fun" and "impulse" element involved in the purchase of a product. Constant upgradation of features is important for corporations to sustain their position is this segment. This also means that the rate of change on the horizontal axis is likely to be much higher for desirables compared to Essentials.

Constant upgradation of features is important for corporations to sustain their position.

Conventional tools such as focus groups, brain storming, qualitative surveys, feedback from distributors, dealers and retailers and formal reports from sales staff can be effectively used in isolation or in different combinations to understand the areas and extent of customer dissatisfaction. There are other possible methods too as discussed in Woodruff (1997, p. 139-153). Corporations should tap a number of sources constantly to follow the customer as a superimposed image. Hindustan Lever in India is known to have highly systematic ways of collecting information from the market. It is obsessed with the urge to achieve customer satisfaction on all fronts, which is the secret of its continued success over the years. This urge to achieve high level of customer satisfaction has grown up especially after the surprising start and growth of Nirma detergent powder at the low end of the market.

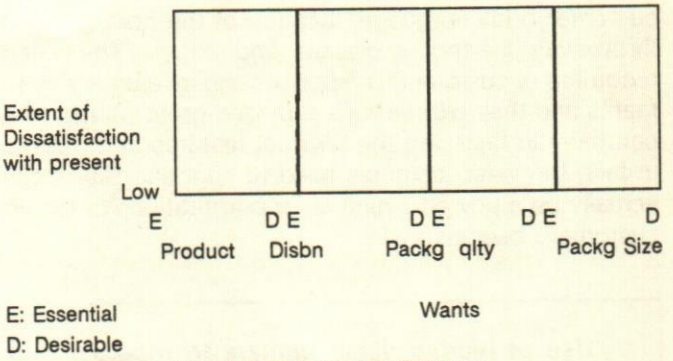

Fig. 2. ZCD to Identify CD Areas (Rank and rate for each)

One of the best but not yet widely used methodologies to find out the sources and, nature and extent of dissatisfaction is customer observation. Though widely used in sociological and anthropological research (Aller & Adler, 1994, p. 337-392) observational research process is yet to find wide application in management literature. Observational techniques can be used to understand level of satisfaction of both internal and external customers at different points on the value chain either through direct or indirect means. Observational research involves different stages starting with the selection of a physical setting for observation. The setting required to observe the behaviour of a customer while using a consumer durable will be different from that is required to study the behaviour of the same customer while examining and negotiating different

models and brands at a dealer's place, both active links on the same value chain. The number of people making observations of the same event may also vary. Some observers are active participants of the act, say while understanding customers' experiences with a new brand of tea. Here drinking of tea with customers as active participants is very useful and natural to understand customer perceptions clearly. At the same time, the observer may be a passive participant while recording customer behaviour while using a new car. It is useful to note that in such ethnographic methods (Atkinson & Hammersley, 1994, p. 248-261) the researcher can follow one or more of the roles: complete observer, observer as participant and participant as observer.

Use of hidden video camera to record both dialogues and action is probably one of the best but rarely used instruments of observation. This ensures that biases and self-consciousness of customers do not influence their responses. For instance, Thermax, a large engineering firm in India used a hidden video camera to record customer response for a newly developed water dispenser. The new machine was to be coin operated and dispensed fixed quantity of filtered and purified water. However, Thermax was keen to know several things such as quantity of water normally consumed, ease of use of coin, customer body language, location of the coin slot and throwaway thermocol glasses and so on. The video recording of customers' responses and involuntary comments and their expressions provided great value to the company in finalising the product features and design. In fact, the video cameras used to spot shoplifters can actually be a powerful means for corporations to record customer observations!

Use of hidden video camera to record action of customers is probably one of the best but rarely used instruments of observation.

McDonald Corporation regularly sends representatives from the head office to their outlets to evaluate the performance of staff there. These representatives queue up as regular customers and only after paying for their order and consuming it, they disclose their identity. As "customers" they keep observing everything that is happening in a store, especially related to external customers. This includes the quality of service such as the extent of courtesy, speed of service, cleanliness, and the process of taking order. Later they identify themselves to the store manager and other staff to interact with them and collect inputs for staff performance appraisal.

Jet Airways, the only successful private airline company in India regularly collects reports from a number of people they have identified as their ambassadors. They travel and observe airlines staff while checking in and customer responses while waiting for the aircraft and also in flight. The airlines has found that such reports are often more valuable than the customer responses to structured questionnaires and surveys. Of course, they also follow multiple methods for collection of market information. It is common knowledge that respondents' behaviour to questionnaires and interviews are not totally natural when they are conscious of the process involved.

Observational techniques can be used in combination with other methods. In any case, it is superior to the conventional customer satisfaction surveys primarily because such studies capture only some dimensions of dissatisfaction, which are more prominent and apparent. They hardly identify areas of latent demand and possible new opportunities. Also, most managers tend to be content or complacent if the level of satisfaction is 'high' or 'very high' on a multipoint scale. Over a period of time, dissatisfied customers move on to new companies which remove their dissatisfaction, and the original company stays where it is.

Scenario Planning (Ringland, 1998) is another tool that can be used very effectively in such analysis, along with the other techniques mentioned earlier. Here, scenario of life at different future points in time can be developed. Such scenarios should incorporate the direct and indirect effects of emerging technological, social, economic and other environments on a firm and its activities. For instance, scenarios on trends in technologies and their direct and indirect effects can be synthesised with similar exercise done on changing social preferences and customer interests.

At a macro level, there are other forces such as regulatory and political whose presence or absence in different intensity influence the level of dissatisfaction customers have today and tomorrow. For instance, we witness instances of governments in both rich and poor countries imposing restrictions on imports of high quality, moderately priced products to protect domestic industry often for political reasons. Similarly, many countries still do not permit Internet based long distance telephone calls for reasons of loss of revenue. Under such dynamic environmental conditions, it is useful to build multiple scenarios of the emerging environment to determine latent demand. Corporations may need internal task forces to identify and analyze the signals in the environment to project changes, say, in the area of broadcasting whose implications for customer dissatisfaction are significant.

Corporations very often do not keep track of their customers constantly. This is particularly so for some of the successful firms which either become arrogant or complacent. Firms, which identify need for and areas of change do not always incorporate them in the value chain. Sometimes this is due to their lack of understanding of where changes have to be made. There are also corporations, which are not sure about what to and how to keep track, beyond the conventionally accepted methods.

Conclusion

Customer needs are dynamic, and there should be new methods to capture them. Shantakumar and Xavier (2000, p. 26-32) have identified a number of research areas around this theme. This means, new dimensions have to be added to the set of IT based CRM tools. Quantitative oriented CRM approaches are only partial in understanding customers. Many organisations, which have adopted new CRM approaches, have not bothered to see whether all their requirements to understand customers have been met or not. It has always been a mix of quantitative and qualitative inputs that provide a more complete picture of the customer. We need to recognise that computers and packages are only tools and it is up to us to decide our purpose and make use of a mix of tools.

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I do not believe you can do today's job with yesterday's methods and be in business tomorrow.

– Nelson Jackson

Implementation Issues in CRM: A Study in the Indian Banking Sector

M.P. Gupta & Sonal Shukla

This paper examines the major issues in Customer Relationship Management (CRM) implementation in the Indian business scenario. In order to gain an insight into the perception prevailing among CRM practitioners, a questionnaire survey was conducted in select Indian (Public and private sector) and foreign banks which are into implementing CRM. The study revealed that CRM is gradually picking up and is definitely considered as a viable proposition by banks in improving services to their customers.

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Earlier, banks, insurance companies and car/shop retailers used to develop close relationship with customers by offering personalized service. This however was a costly and inefficient system. Today, through effective use of information and communication technology (ICT), organisations can offer large variety, lower price and personalized service and all at the same time. This approach to marketing which uses continually refined information about current and potential customers to anticipate and respond to their needs is the practice of Customer Relationship Management (CRM) (Peppard 2000). CRM is the new buzzword in business circles. As per definition, CRM is the establishment, development, maintenance and optimization of long-term mutually valuable relationship between consumers and organisations. Successful CRM focuses on understanding the needs and desires of the consumer and is achieved by placing these needs at the heart of the business by integrating them with the organisation's strategy, people, technology and business processes. It is not simply a buzzword, a new software package or a breakthrough in sociological research methodologies. It is the renaissance of a belief that at the heart of all transactions is the creation of mutual value for all parties (Heygate 1999).

Successful CRM focuses on understanding the needs and desires of the consumer and is achieved by integrating them with the organisation's strategy, technology and business processes.

CRM: The Concept

Although CRM is a recent concept, its tenets have been around for some time. Marketing people have al-

ways promoted close relationship with customers. Customer profitability has been touted as significant for many years, but has been difficult to determine as most institutions are organized along product or channel lines, as opposed to customer orientation. Similarly the concept of mass customization has been in literature for nearly a decade (Pine 1993). However, all have remained essentially theoretical concepts, aspirations rather than a practical or commercial reality. Today, due to advances in ICT, establishment of one-to-one relationship, customer-value analysis and mass customization are possible. Many organisations have recently made a commitment to become customer focused. But implementing customer relationship management is not easy. Optimizing customer experiences at all points of contact and creating real value for customers requires that all business strategies be based on an understanding of customers and their needs. These strategies need to focus on building value for the customer and the organisation and achieving greater customer loyalty. They should understand who their customers are and what they value, select customers carefully, design products and services that deliver the desired value, design effective sales channels, service channels and customer touch points, recruit and equip employees to deliver and increase customer value, and constantly refine value proposition to ensure customer loyalty and retention (Forsytyh 1997, Goldenberg 1998). Everyone has been exposed to these changes: as demonstrated in personal mail from hotels offering special rates, incentives etc. At the core of these efforts is the offering company's desire to develop a "relationship" with a target audience. Today's technology has reached a price/performance point where it is possible to acquire, consolidate, analyze, and manage the volumes of information that make this concept possible (Hiroshi 1997, Kenneth 1998). One of the most exciting uses of new technologies has been in the area of Customer Relationship Management (CRM) systems (Kestenbaun & Straight 1996). It is imperative to explore the nature of CRM, why companies are moving to this strategy in such astounding numbers, why information technologists should be aware of these trends, and what the IT community can do to support these initiatives and contribute to the success of the organisation with specific focus on Banking sector.

As per the 1997 Coopers and Lybrand survey of 800 North American companies, (figure 1) 40 per cent respondents feel CRM strategy led to enhanced target marketing. Result shows relative areas of improvement by companies who made an effort to improve their target marketing and move toward a CRM approach, underlining the tremendous advantage that a well- implemented CRM strategy can bring to an organisation. Companies that have introduced CRM packages include SAP, Baan, Oracle, Peoplesoft, and Siebel.

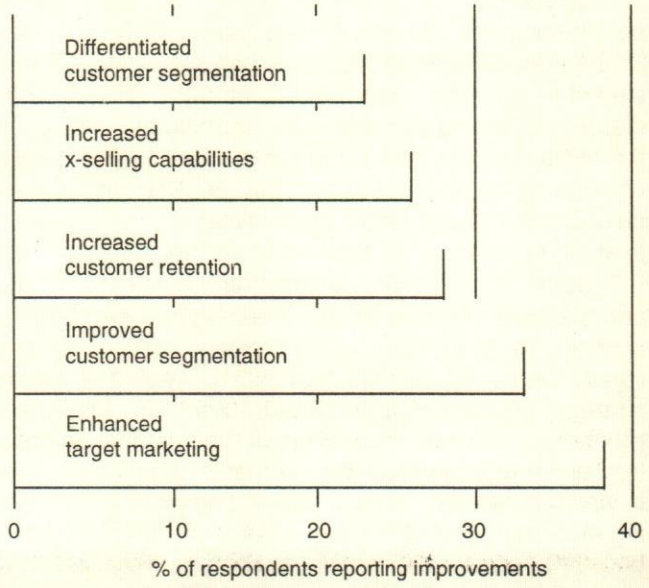


Fig. 1. Benefits of a CRM Strategy

Source: 1997 Coopers & Lybrand Survey of 800 North American Companies

This study is a modest attempt to identify the implementation issues associated with the emerging Internet technology CRM, with focus on the banking sector, to help assess the scope of CRM in the current business scenario. The focus is to study the importance of CRM, its technology and how it is driving customer service particularly in the banking sector. The study encompasses 8 banks each in the following three sectors: Foreign, Private and Public. Some of the implementation issues addressed are:

- Ensuring general acceptance of the CRM concept at all levels in the organisation and that e-CRM should be the main driving force underlying all future e-business developments
- Potential costs involved in CRM implementation
- Privacy—what information is needed for CRM, how to gather it, and how it can be used without infringing on people's rights
- E-mail campaigns' focus—Do they provide an offer the customer cannot refuse? How are these tied in with the relevant website so that the customer enjoys a seamless experience?
- Managing data across all the sales and marketing
- E-marketing efforts—How well they combine with the online selling operation.

CRM in Banking Sector: The World Scenario

According to the latest figures (2000, peoplesoft.com), European retail banks will be spending $2.4bn on CRM by 2003. The big push into CRM is expected to come next year. Banks are CRM tools to identify which customers are unprofitable and could therefore be 'dropped'. At present, more than a quarter of account holders fall into this area. Also the banking customers are becoming more dynamic and less loyal in their behavior. The Internet is further strengthening this trend, as it increases transparency in the market and allows customers to move easily from one bank to another. In a situation of decreasing bank customer loyalty, customer satisfaction is the key in a bank's strategy, because a satisfied client is loyal and profitable. However, knowledge of the customer is growing harder to acquire as the Internet is changing the way in which customers access banking services by interacting increasingly via their banks' Web sites. This calls for banks to improve their CRM capabilities, which are basically intended to maximize satisfaction through thorough knowledge of the customer, in order to understand needs and preferences of online customers (which are obviously different from traditional customers). Internet technology also gives banks the opportunity to improve their CRM capabilities. Since the explosion of the Internet, Western European banks have started to offer new Internet services and they are also rethinking their marketing strategies to deal with the increasing number of online accounts.

Why should banks adopt an integrated eCRM vision...

eCRM leverages the electronic marketplace as a channel to acquire, develop and retain customers in a personalized and interactive way. Integrating Web-based front-office tools with sales, service, marketing, administrative and other back-office processes provides an opportunity to improve customer relations and increase internal efficiency. In today's global marketplace, ebusiness strategies are transforming business-to-business and business-to-consumer relationships, allowing optimized IT cost-benefit distribution and management, fast launches of new products and services, and flexibility in the way products and services are delivered. eCRM solutions provide collaboration capabilities that allow offering more personalized services to customers, identifying the most profitable customers, handling customer inquiries more rapidly and at lower cost, and bringing new customers. Peppard (2000) suggests ECRM should include the whole 'enterprise' in dealing with customers. His research suggests that financial institutions in particular must adopt an enterprise-wide perspective, with front-office/back-office integration, if they are to become truly 'Customer-centric' and capitalize on the opportunities provided by the information which this makes available to them.

e-business strategies are transforming business-to-business and business-to-consumer relationships, allowing optimized IT cost-benefit distribution and management.

The implications of these trends on the IT spending at European banks

It is expected that CRM will contribute for 6.5 per cent of total IT spending of banks in Western Europe. Moreover, the market for CRM in banking will continue to grow strongly over the next year, recording a compound annual growth rate (CAGR) of 19.4 per cent in the 1999-2004 period (Source: IDC, 2000). It is expected that IT services will account for more than 60 per cent of the total IT spending on banking CRM in Western Europe by 2004. In particular, due to the growing use of e-commerce and the increasing complexity of CRM technology, systems integration and outsourcing are expected to maintain an important share of total IT spending on CRM in banking. From the point of view of software, a strong growth for CRM packaged software solutions (31% CAGR between 1999 and 2004) is foreseen. Packaged software will be exploited to maximize self-service, access to information and knowledge of customers, as a consequence of the rapid evolution in computer telephony technology, and the growing role of online communication and Internet technologies.

In Thailand and across Asia, the failure of financial institutions and the unwieldy non-performing loan accounts register has brought home the need for improved risk management and better understanding of customers. This has created a growing demand for advice about Customer Relationship Management (CRM) applications that can meet the specific business requirements of firms in the financial services industry. The following is a compilation of explanations in response to the issues raised:

Why should a financial institution implement CRM?

- While customer retention is vital for banks seeking to maintain market share, understanding customer profitability is an important factor in a bank's competitiveness. Most of any bank's profits are derived from a relatively small percentage of customers, and a significant number of customers are actually loss making over the course of their relationship with the bank.

- As a commercial reality in today's economy, banks need to be in a position to identify profitable customers and improve levels of service for these customers, while wasting less sales, marketing and customer service resources on unprofitable customers.
- Post implementation of Customer Relationship Management, a large bank (according to research by First Manhattan Consulting Group, 2000) learned that 20 per cent of their customers contributed to 150 per cent of their profits. Forty per cent to 50 per cent of the bank's customers eliminate 50 per cent of the profits. The remainder contribute nothing to the profit picture.
- CRM can help to identify who are the profitable customers and also help to figure out strategies to convert more customers to profitability.
- Banks need dynamic, not just static, information about the client base to achieve even the simplest objectives of CRM. Appropriate CRM technology helps by delivering tools for rationalizing information, working smarter, sharing information and retaining the intellectual capital of the organisation.
- Intellectual capital is a functional asset in banking and finance today, and influences what to sell. Client knowledge can no longer be contained solely in the heads of employees, so that if an employee leaves that knowledge does not leave too.

Thus a huge growth of CRM systems is predicted in the banking sector over the next few years. However, with other sectors CRM is seen to be problematic: there are problems in putting it in place effectively. Defining the correct data parameters for the business and market is crucial, but often done incorrectly, diminishing the effectiveness of the solution. CRM costs are high and companies are not necessarily being successful in providing return on investment. Instead of being a quick fix, CRM is a long-term effort, and that's why deep management support is crucial. Along with smart execution and buy-in from both investors and employees, such projects require strong leadership. But there's just no getting around the fact that CRM ultimately requires far-reaching organisational change. To achieve the holistic perspective that CRM demands, entire sales management system is to be aligned around it.

CRM is a long-term effort, not a quick fix, and deep management support is crucial.

CRM in Indian Banking Scenario

Indian banks have now started to recognize superior customer care and maintenance of well-greased relationship with customers as important tools to profitability. With the growth of awareness and rapid imbibing of the Internet culture, common man is not ready to accept anything less than the best. On one level, CRM simply refers to organizing the bank around the needs of its most valuable, i.e. profitable customers. That is a straightforward concept, and just about everyone in the marketing community would agree that it is a sound business strategy for any bank to follow. CRM represents a new way of doing business for banks. It incorporates such seminal concepts as the sales culture, one-to-one marketing, data warehousing, data mining, customer segmentation, loyalty programs, and cross selling.

To the large banks and other financial services firms, who are spending tens of crores to perfect these strategies, CRM is a state of mind, a behavior, an amalgam of strategies. Quite simply, it puts the customer at the center of the universe. It emphasizes profitability and is technology enabled. These initiatives have gathered such a lot of momentum today that even chronically dormant banks have suddenly become very aggressive customer savvy. Indian nationalized banks, which are largely governed by the RBI norms, are facing stiff competition from foreign banks that have entered India sometime ago. In the wake of such serious competition, Indian banks are left with no choice but to take adequate steps to protect themselves.

IDBI banks have chalked out clear-cut policies for improvement of services to customers. They have identified two mains areas of improvement—the lending side and the resource side. In the lending side, they have worked on creating a URL wherein the customers can actually get access to the database and make queries on them. It is a URL where a customer can get any information on the status of their loans e.g. on the prevailing interest rates, the EMI on the loan which is extended on a reducing balance scheme, the updated amounts payable and all other information which a customer normally requires at any stage. All these have been undertaken with the aim of improving relationship with the customers. Since IDBI has still not gone into the retail banking segment, the bank hasn't yet opened up this option to its website, but does plan to come up with similar offerings in the long run.

On the resource mobilization front, IDBI prefers to test the waters by trial and error. Here, they have tied up will private placements and auction sites to enhance their facilities like marketing of bonds. Their tie-ups with

financial portals like netexpress.com and myiris.com have helped them to reach out to each and every customer thus increasing better value delivery and higher penetration.

Another fast emerging nationalized bank, Dena Bank has adopted different strategy in order to further services to clients. It has struck strategic alliances with private sector banks. This will enable it to work towards mutually beneficial schemes like payment gateways and debit cards. IDBI invested close to Rs. 20 crore for this project of formulating CRM and final implementation. It started off on the fast track some 16 years ago on the pretext of improving the computer division (one of the front runners on this upgradation) and is now on the verge of completion. It has already set up call centers and is working on data warehousing. This is all because IDBI is trying to change the very image of the organisation. It is trying to shed its erstwhile image of product orientation focus to an entirely new concept of customer relationship approach. The basic platform of operation of the latest development will be of "batch system" type and will be on RDBMS and Unix. It has connected 75 per cent of its offices to the intranet with email and Internet facilities through VSAT connections. It has also set up an extensive network for MIS covering all the offices with a convergence and compilation at the head office in Mumbai.

Lessons for the new entrants

When it comes to upgrading to newer technologies, there are immense hurdles organisations face on this arduous task of change, reform and improvement. A major problem that most of the banks face is that of the bandwidth being offered to them by VSNL and DoT. As a result of this infrastructural problem, which is out of their direct control, they are impaired and hence find it extremely difficult to predict the success of their endeavour. Integrating all the software, networking all the branches and most importantly achieving success in changing the old mindset to adopt the new and more sophisticated tools and techniques is not easy. This mammoth task requires hundred per cent commitment and consistent support from the top management and tenacity and perseverance to go through that rough path. IDBI had to face similar problems in their search for competent players during the initial consultancy period and initialisation of the project. They derived immense strength from their highly talented human resource and today belong to the clan of lesser fortune banks in the country to have dared to tread the CRM road.

A major problem most banks face is bandwidth. As a result of this infrastructural problem, they are impaired.

The opportunity

Today the competition in banking industry has forced every bank to opt for this novel tool to inveigle customers. Time is not far when these very Indian banks take their foreign counterparts head-on on the global scene. There is a big scope for changes and improvement. Infact this is a very dynamic tool without any thumb rule of operation. As a result it is very flexible and each bank designs its own formulation, best suited for its own customers, for its own environment and for its own people.

It is clear that customer relationship management is evolving rapidly and should be at the center of most organisations' corporate strategies. New channels to market, for both product and communication, and new data related technologies are driving this evolution, in particular the need to make the campaign and communication management process operational in a real time environment. The New World of e-CRM is not here yet; for most organisations the vast majority of customer communication remains through direct mail and telephone. But over the next two years customer expectations of how a leading edge organisation will operate will inevitably change, and the demand from the customer for instant marketing dialogue between them and the supplier will force the pace of change in the CRM environment. Adopting a correct and future proofed IT infrastructure within the organisation now, allied to the architecture of the communication management systems installed, will provide the platform for successfully deriving competitive advantage from customer relationship management.

A Survey of Indian Banking Sector

In order to gain an in-depth understanding of Customer Relationship Management, a survey was conducted to identify the implementation issues and the scope of CRM in the Indian business scenario. The aim was to identify the scope of CRM in the Indian banking sector, through studying the current status of CRM in Indian (Public & private sector) and foreign banks and their inclination towards CRM implementation. The questionnaire covered the entire gamut of questions that help identify these issues to the core. A research model was designed (Fig. 2) to identify the variables for the questionnaire survey.

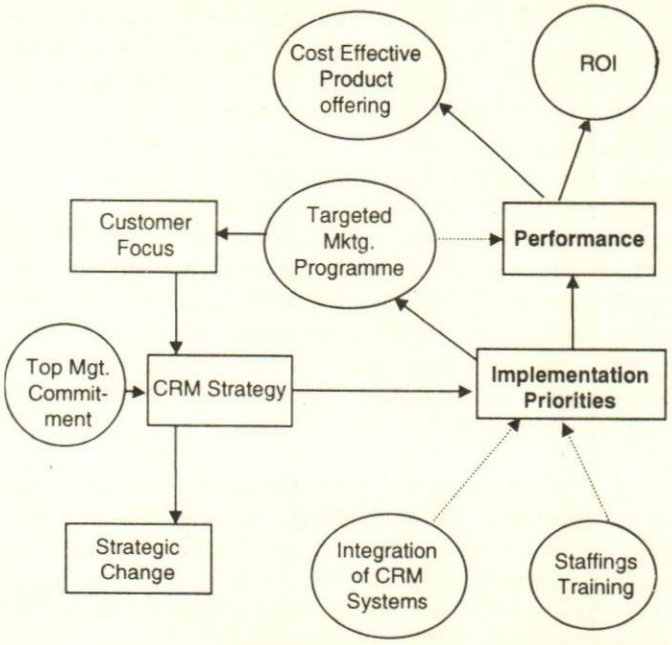


Fig. 2. Research Model

This model helps to identify issues like customer focus, CRM strategy, strategic change, implementation priorities and performance measurement around which the entire questionnaire was developed. The questionnaire consisted of five sections each dealing with a different issue related to CRM, details of which are given in Table 1.

Table 1: Structure of the Questionnaire

Sections	Issues covered
1	Organisational Information
2	CRM Strategy
3	Strategic Changes
4	CRM Implementation Priorities
5	Performance

A Likert like scale was chosen to represent: 1. Very Low 2. Low 3. Moderate 4. High 5. Very High. For a complete understanding of existing CRM status in the Indian Banking sector, 8 banks were chosen in each of the following sectors: Foreign, Private and Public Sector. This questionnaire was administered to IT/Systems and customer relations managers in 24 banks (shown in Table 2), which are known names in Indian banking sector.

Since the research topic was on new technology and mass opinion was required to form conclusions, observation method was ruled out and questionnaire as survey instrument was selected taking maximum cautions to avoid pitfalls associated with this method. All constructs were carefully explained before asking for feedback from respondents to ensure that thoughts of respondent are aligned with the research.

Table 2: Select Banks Chosen for Survey

Foreign banks	Private banks	Public sector banks
• Standard Chartered Grindlays	• ICICI bank	• State bank of India
• American Express	• HDFC bank	• Central bank
• Bank of Tokyo Mitsubishi	• Karur Vysya bank	• Jammu & Kashmir bank
• Citibank	• Centurion bank	• Punjab National bank
• Hong Kong Shanghai Banking Corporation (HSBC)	• IDBI	• Bank of Baroda
• ABN Amro	• Global Trust bank	• Allahabad Bank
• Bank of America	• IndusInd	• Indian bank
• Deutsche bank	• Syndicate	• Canara bank

Two categories of subjects were selected for this research:

- IT managers that represented the expert population to opine about the benefits/advantages from CRM application. Since these experts are using and closely evaluating these services for extent of usage and benefits applicable to Organisation as a whole, they had sufficient experience with CRM technology/application to be able to answer questions regarding its implementation in banks.
- Customer relations manager to provide information about the arising customer needs and expectations. Since they are aware of the different user needs, and service expectations from their day-to-day contact and communication with their clients, their opinion is more unbiased and closer to reality.

Analysis & Discussion

In order to make sense of the data collected, analysis of information collected as responses to questionnaires was performed. This involved the transcription of responses properly organized and categorized into Excel spreadsheets and depiction in the form of figures for drawing trends from the data. SPSS and Microsoft Excel were used for carrying out the analysis on CRM Strategy, Strategic Changes resulting from CRM, CRM Implementation priorities and Performance.

CRM Strategy

Following specific issues were examined: need for CRM, level of interest in CRM and related issues, channels used for CRM, methods of maintaining customer records, choice of CRM software and top management support for CRM implementation. It can be clearly seen from figure 3 that Foreign banks mainly use CRM to deliver timely service to customers (5), closely followed by customizing products and services/prices (4.75) and to reduce operating costs (4.625). Private banks follow a similar trend as the foreign banks with the degree of importance slightly varying for the same factors i.e. delivering timely service to customers (4.5), Customizing products and services/prices (4.125) and to reduce operating costs (4.0). Public Sector banks show a little variation, the most important reason for which they use CRM remains the same as the other banks i.e. to deliver timely service to customers (5), but closely followed by Reducing operating costs (4.0) and then Customizing products and services/prices (3.625).

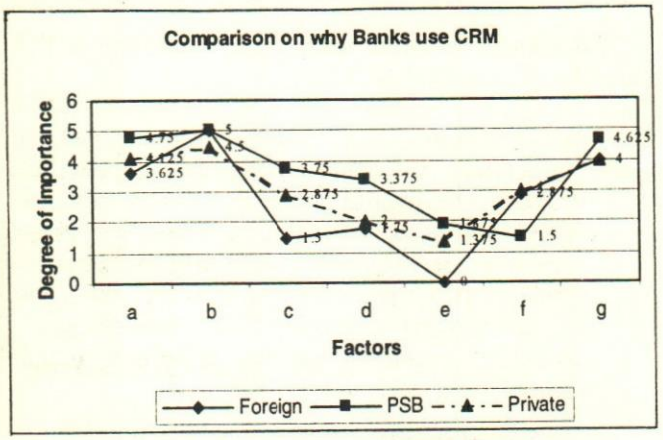


Fig. 3. Reasons for using CRM in banks

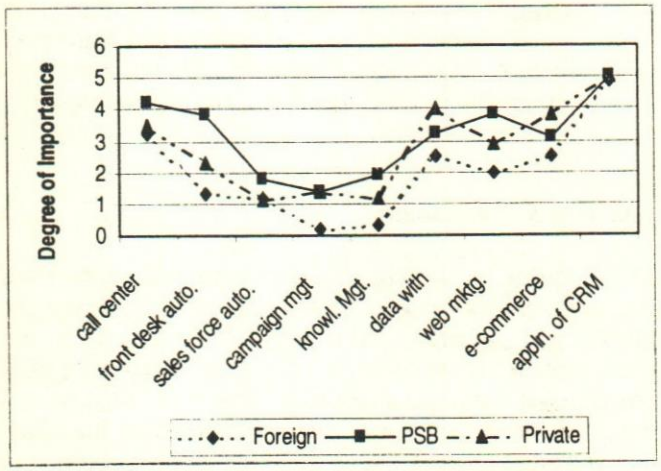


Fig. 4. Interest in knowing about CRM related topics

As depicted in Fig. 4, Foreign banks show a keen interest in knowing more on application of CRM (5) and call centers (4.25), and a moderate interest in front desk automation (3.75) and web marketing (3.75), and minimum interest in knowing about campaign management (1.375). Private banks show a keen interest in knowing more about application of CRM (5), followed closely by data warehousing (4), e-commerce (3.75) and call centers (3.625), with minimum interest in knowledge management and sales force automation (1.25). Public Sector banks show a keen interest in knowing about application of CRM (4.875), followed by some interest in call centers (3.25), data warehousing and e-commerce (2.5), whereas they are almost disinterested in knowledge management (0.375) and campaign management (0.25).

Figure 5 reflects that the channels most often used by foreign banks for maintaining customer relations are Call centers (4.875), followed by Internet (4.625) and mobile phone (4.375). For the Private banks it reflects that they mainly use phone lines (4.25), followed by branch/location (4.125) and Internet (3.5). For the Public Sector banks the channels most often used for maintaining customer relations are Branch/location (4.375), followed by direct contact (4) and phone lines (3.5). Private and Public sector banks do not use call center facility at the moment.

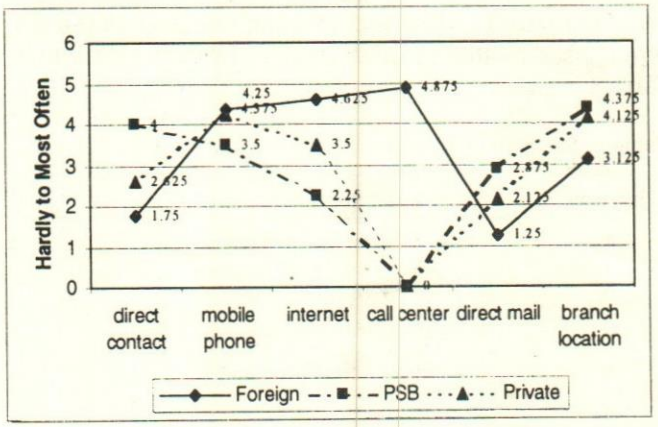


Fig. 5. Channels used for CRM in banks

Table 3 presents the methods used by banks to maintain records and information about their clients to determine how much they had upgraded themselves technically.

In is seen that foreign banks are quite fast on computerization and have totally eliminated manual records, moreover 25 per cent to them have integrated software solutions as their records are computerized. Public sector banks lag behind as only 50 per cent of them have computerized databases and rest still maintain manual records. The survey also reveals information on the CRM software used by the various banks for managing customer records and

Table 3: Methods of Keeping Customer Information

Foreign banks	Integrated Software Solutions	25%
	Computer Databases	75%
Private banks	Manual Records	0%
	Computer Databases	100%
Public Sector banks	Manual Records	50%
	Computer Databases	50%

customer interaction information. Only three foreign banks have installed CRM packages for maintaining customer details and the packages used are: Citibank: Seibel; American Express: Seibel; ABN Amro: Peoplesoft. The Citibank system has been equipped with the "sales" module for providing customers readily available information about their assets and liabilities with the bank. It also enables the Citibank relationship managers in maintaining a history of contacts with their customers thus assisting them in serving better. Though the other banks surveyed have started implementing CRM they have not implemented any technology or CRM software. Among private banks ICICI and IDBI have installed CRM software for managing customer details and services. The remaining banks surveyed have also initiated CRM in various forms i.e. providing efficient services to customers through mobile telephony or the Internet but still have to adopt a technology or software for the same.

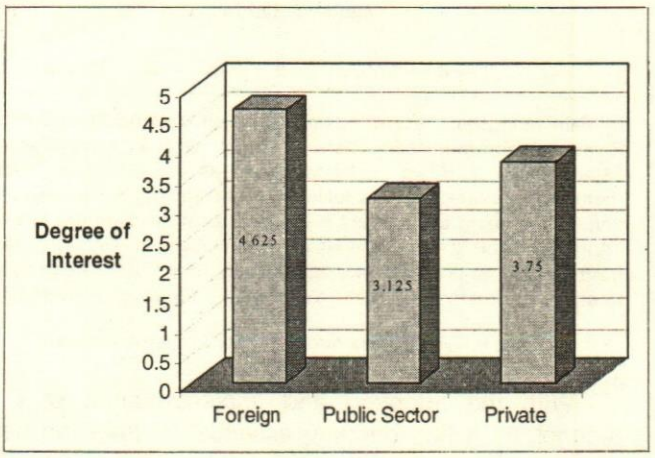


Fig. 6. Degree of top management interest in CRM implementation

Among Public sector banks, Bank of India is already in the process of fast adopting a software package, either Seibel or SAP. SBI uses a software developed by BK Systems of Hyderabad, but that service covers only its corporate and NRI clients. The Central bank uses a software SWIFT, but it is used only for managing its foreign accounts and transactions. The other banks in this category are still far from implementing any technology or software package but are venturing into providing internet and mobile services to their customers.

It can be seen from figure 6 that top management interest in CRM implementation is the highest in Foreign banks (4.625), followed by Private sector banks (3.75) and least by Public sector banks (3.125). Since top management plays a vital role in implementation of CRM in organisations, it is essential to gauge their inclination towards its acceptance. Thus we identify the factors that motivate the top management to support the technology (Table 4). It can be seen that in public and private sector banks, cost reduction due to CRM implementation plays a strong role in motivating the top management.

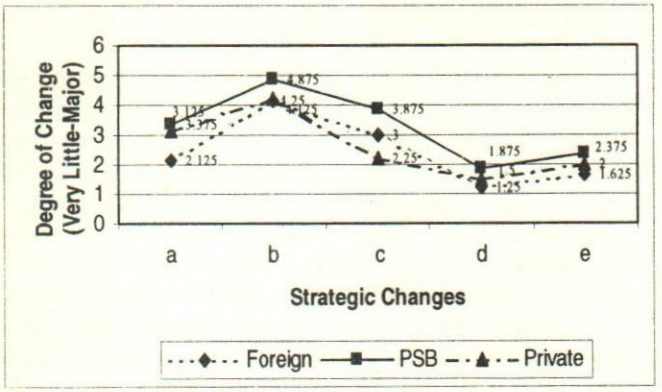
Table 4: Factors Motivating Top Management

Foreign banks	Significantly impact & improve existing processes	87.5%
	Significantly reduce costs	12.5%
Private banks	Significantly impact & improve existing processes	50.0%
	Significantly reduce costs	50.0%
Public Sector banks	Significantly impact & improve existing processes	37.5%
	Significantly reduce costs	62.5%

In public and private sector banks, cost reduction due to CRM implementation plays a strong role in motivating the top management.

Strategic Changes

Strategic changes in banks resulting from CRM are depicted in Fig. 7. The major strategic changes as reflected in Foreign banks include enhanced customer satisfaction (4.875), followed by expansion of customer base (3.875) and differentiation of products and services from competitors (3.375). For Private banks the major strategic changes reflected are enhanced customer satisfaction (4.25), followed by differentiation of products and services from competitors (3.125) and expansion of customer base (2.25). For Public Sector banks the major strategic changes reflected follow the same trend as that of foreign banks but with a lesser degree of change i.e. enhanced customer satisfaction (4.125), followed by expansion of customer base (3.0) and differentiation of products and services from competitors (2.125). Thus it is seen that the major strategic changes are the same for all three sectors although the degree may be varying.



a: Facilitated differentiation of products and services from competitors b: Helped enhance customer satisfaction levels c: Helped expand customer base d: Helped curb the threats of substitutes for your product or services e: Advantage over new entrants in your field

Fig. 7. Strategic changes resulting from CRM

CRM Implementation Priorities

The following CRM Implementation priorities were studied: functional area gaining competitive advantage due to CRM, issues for effective CRM implementation, Training requirements, factors to evaluate the potential of a CRM system, and average amount spent on CRM implementation. Figure 8 presents which functional area derives competitive advantage from CRM. It clearly reflects that in all the three sectors, the trend is the same I.e. in the opinion of banks CRM solutions provide maximum advantage to Customer Relations, followed by E-commerce, Financials, Human Resource, Supply chain and Manufacturing.

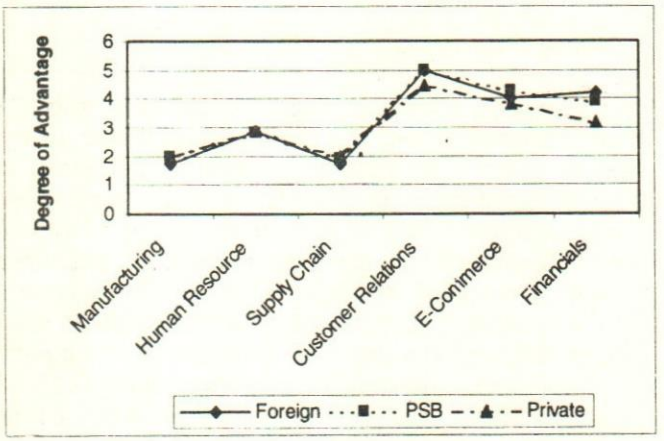
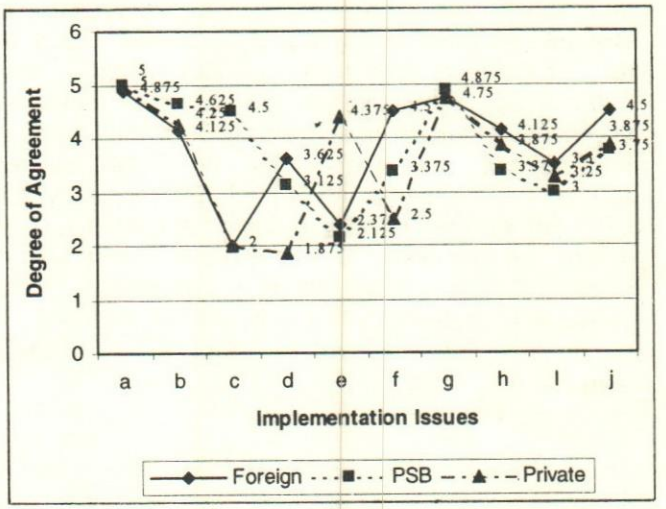


Fig. 8. Functional areas where CRM provides competitive advantage

Issues of CRM implementation are identified in Fig. 9. It can be deciphered from this figure that Foreign banks believe that the issue maintenance of database of customers to understand them better as the most critical (4.875), followed by Privacy (4.75) and potential cost involvement in implementation (4.375). Private banks consider Privacy (4.875) as the most critical issue in CRM implementation, followed by potential cost involvement in implementation (4.5) and balancing communication between customers and management (4.25). For the Public sector banks it can be deciphered that they follow an almost similar trend as the foreign banks i.e. most critical Implementation issue for them is maintenance of database of customers to understand them better (5.0), followed by Privacy (4.875) and balancing communication between customers and management (4.625). Thus it can be seen that the Public sector banks accord high priority to CRM implementation issues and are very much concerned about understanding these issues to implement CRM in their banks.



a: Maintaining database of customers to understand them better b: Balancing communication between customers & management 3: Telemarketing & direct mail activities to be carried out d: Involvement in lead tracking, lead followup, data transfer e: Re- organisation of marketing department f: Potential cost involvement in e-crm implementation g: Privacy—an important issue h: Ensuring storefront services to propel customers to cash point I: e-mail campaigns to offer customers a seamless experience j: Functional integration

Fig. 9. CRM issues necessary for implementation

With the adoption and implementation of CRM technology it has become essential to train the users of this technology within the banks so that they can implement it with ease. Table 5 identifies certain training methods which are popularly used within the banks.

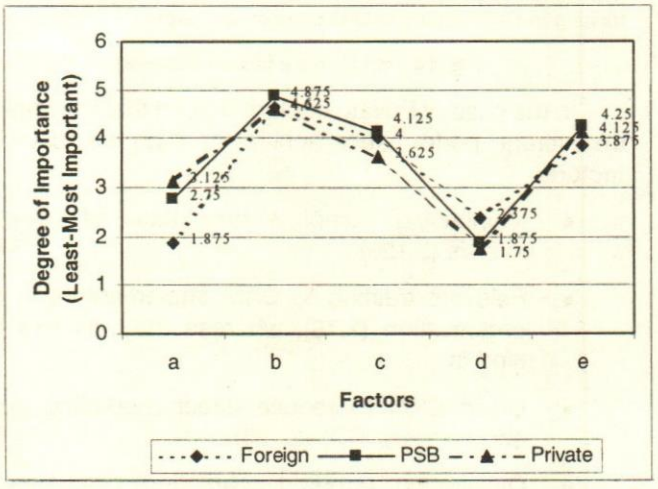
Average amount spent to implement CRM is presented in Table 6. (i.e., how much amount the banks can readily spend on acquiring and implementing CRM technology). Foreign and private banks are more open to spending higher amounts i.e. 10-25 lacs on CRM implementation whereas majority of public sector banks are not keen on spending more than 10 lacs.

Table 5: Nature of Training Provided

Foreign banks	Through Instructors assisted by Project Managers	25.0%
	Onsite courses for user training systems; administrator training and train the trainer	75.0%
Private banks	Through Instructors assisted by Project Managers	75.0%
	Onsite courses for user training systems; administrator training and train the trainer	25.0%
Public Sector banks	Through Instructors assisted by Project Managers	62.5%
	Train-the-trainer; train both the user and systems administrator within the company	37.5%

Table 6: Amount Spent on CRM

Foreign banks	10-25 Lacs	87.5%
	>25 Lacs	12.5%
Private banks	10-25 Lacs	75.0%
	5-10 Lacs	25.0%
Public Sector banks	10-25 Lacs	37.5%
	5-10 Lacs	62.5%



a: System provides information required to make key decisions b: System significantly impacts and improves existing processes c: Significantly reduces costs d: Is currently successful in similar installations e: ROI

Fig. 10. Factors to evaluate potential of CRM

For evaluating the potential of a CRM system Foreign banks consider (Fig. 10) the following factors as critical b: system significantly impacts and improves existing processes (4.875), e: ROI (4.25) and c: significantly reduces costs (4.125). For Private banks the critical factors for evaluating are the same as foreign banks varying only in the degree of importance that they assign to these factors i.e. b: system significantly impacts and improves existing processes (4.5), e: ROI (4.125) and c: significantly reduces costs (3.625). Again for the Public sector banks the critical factors for evaluating are the same as the foreign and private banks varying only in the degree of importance that they assign to these factors i.e. b: system significantly impacts and improves existing processes (4.625), e: ROI (3.875) and c: significantly reduces costs (4.0).

Performance

It can seen from Fig. 11 that the major advantages of CRM implementation as perceived by foreign banks include:

- Developing new product and service features based on what the customers value to enhance satisfaction (4.75)
- Consolidating critical information about each customer (4.5)
- Personalizing service and product offering to each customer (4.375)

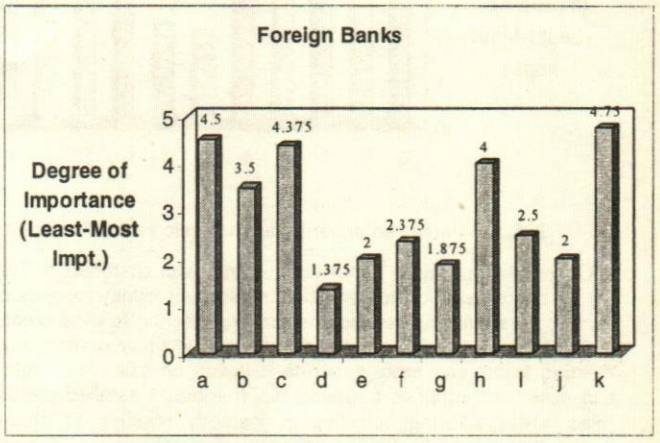


Fig. 11. Perceived advantages in foreign banks

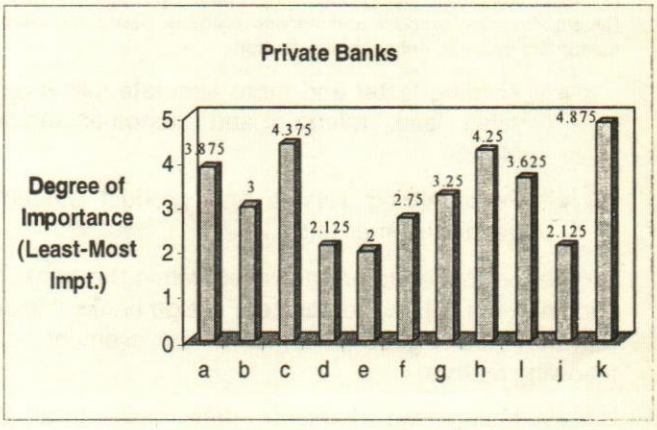


Fig. 12. Perceived advantages in private banks

The major advantages of CRM as perceived by Private banks (Fig. 12):

- Developing new product and service features based on what the customers value to enhance satisfaction (4.875)
- Personalizing service and product offering to each customer (4.375)
- Gaining deeper understanding of customers and maximizing marketing ROI (4.25)

The major advantages of CRM as perceived by Public sector banks (Fig. 13):

- Gaining deeper understanding of customers and maximize marketing ROI (4.75)

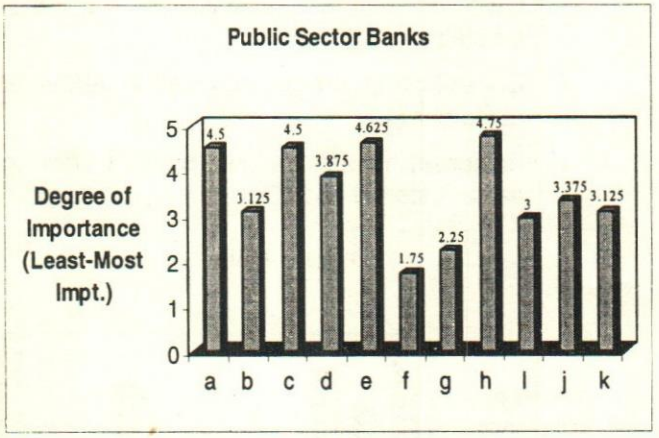


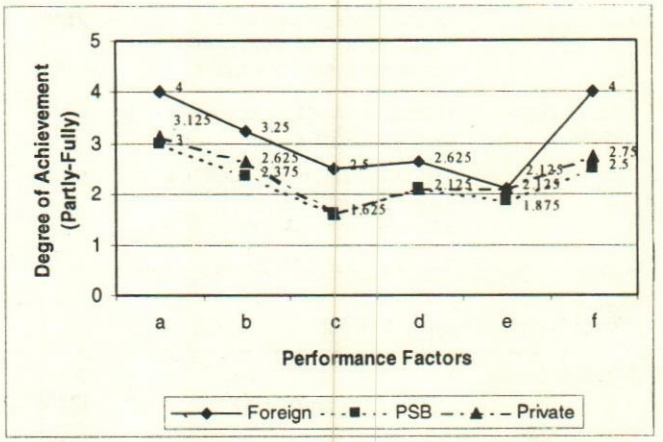
Fig. 13. Perceived advantages in public sector banks

a: Consolidating critical information about each customer b: Targeting most profitable customers to increase their loyalty towards company c: Personalizing service and product offering to each customer d: Boosting revenue per sales person and territory performance e: Yielding faster and more accurate followup on sales lead, referrals and customer inquiries f: Giving top managers detailed picture of sales and marketing activities g: Instantly reacting to changing market conditions h: Gaining deeper understanding of customers and maximizing marketing ROI I: Developing target mktg. Programs to match customer buying patterns j: Spending resources wisely k: Developing new product and service features based on what the customers value to enhance satisfaction

- Yielding faster and more accurate follow-up on sales lead, referrals and customer inquiries (4.625)
- Personalizing service and product offered to each customer (4.5)

Performance factors achieved within the banks are shown in Fig. 14. In the case of Foreign banks it is seen that they reflect good performance achievement on the following factors:

- Maintaining complete data base of all customers (4.0)
- Relevant training to CRM implementers in the organisation (4.0), whereas they still lag behind in:
- Using CRM implementation to capture new territories (2.5)
- Developing targeted marketing programs to match customer buying patterns (2.125)



a: Maintaining complete data base of all customer b: Providing Personalized services and offerings to customers c: Using CRM implementation to capture new territories d: Using CRM to reduce direct marketing costs and enhance ROI e: Developing targeted marketing Programs to match customer buying patterns f: Relevant training to CRM implementers in the organisation

Fig. 14. Performance factors achieved

In the case of Private banks it is seen that they reflect an average performance achievement on the following factors:

- Maintaining complete data base of all customers (3.125)
- Relevant training to CRM implementers in the organisation (2.75), whereas they still lag behind in:
- Using CRM to reduce direct marketing costs and enhance ROI (2.125)
- Developing targeted marketing programs to match customer buying patterns (2.125)

In the case of Public sector banks it is seen that they reflect an average performance achievement on the following factors:

- Maintaining complete data base of all customers (3.0)
- Relevant training to CRM implementers in the organisation (2.5), whereas they still lag behind in:
- Using CRM implementation to capture new territories (1.625)

- Developing targeted marketing programs to match customer buying patterns (1.875)

From the analysis, we comprehend that banks are still in the initial phase of CRM implementation, with some foreign and private sector banks taking the initiative on the technology front. Public sector banks still have a long way to go in adopting the new technology and effectively implementing it to provide world-class service to their customers. The starting point for developing CRM must be determined from a strategic review of the organisation's current position. Organisations need to address four broad issues:

An organisation should first examine its core business and consider how it will evolve in the future. It needs to consider the form of CRM that is appropriate for their business now and in the future and what organisation resources (IT infrastructure/vendors/ partners) does it have to support the business now and in the future. Effective implementation of CRM will require a fundamental shift in mindset and the way in which the company is organized. The overall aim should be to transform the company into a customer-led organisation – one that maximizes the full potential of business and emerging technologies to support and develop customer relationship.

Having identified the present and future focus of CRM, companies need to address the appropriate information architecture to enable their CRM strategy to be implemented. As organisations increase their sophistication they will need to creatively integrate these technologies. "Planned evolution" is a good way of summarizing the technology approach to building the backbone to support the relevant CRM strategy mapped for the business. It is to be ensured that the chosen strategy is underpinned by viable and appropriate technology architecture. This involves the selection of vendors and partners based on issues of customization capability and other appropriate commercial factors including both technological and commercial criteria.

Another major implementation issue is the integration of CRM systems with call centers, sales and marketing, supply chain, back-office, legacy systems, websites, email and other business systems and processes, ROI and performance measurement on how to justify the investment and measure the results. Appropriate project staff to having the right mixture of industry knowledge and CRM project experience is necessary. Other important issues are winning the approval and commitment of senior executives and other key participants, creating wide understanding of the necessity for CRM and the business benefits to be derived, ensuring that all future business decisions are assessed against CRM objectives, and ensuring close involvement of all staff in CRM developments, especially those closest to the customer. The acceptance of CRM as the driving force will require an innovative approach to measuring the subsequent performance of the bank's business.

Recommendations & Implications

All organisations have not reaped equal benefits from the same technology. Certain factors should be taken care of when implementing CRM. The following directions can be recommended for CRM adoption:

- Getting a first hand feedback from the customers – preferably through an unbiased party – would be vastly useful in identifying problem areas in the customer relationship cycle, a key for any CRM implementation exercise i.e. a customer rather than management led approach to business should be adopted.
- Winning commitment to the CRM concept at all levels in the organisation is critical.
- Short term business innovations should focus on high value customers rather than mass marketing.
- Customer mapping must begin immediately covering Customer identification, Differentiation, Interaction and Customization.
- Successful CRM implementation requires a well planned CRM infrastructure in place that allows capture, storage, and analysis of customer data.
- Organisation must select a CRM software based upon the incremental ROI (Return on investment) that it will bring to the organisation. Sans this exercise, the benefits of CRM implementation cannot be fully exploited.
- Prototype the system: prototyping the CRM system facilitates the phasing in of new technology, allows experimentation on a smaller and less costly scale, and tests the system's functionality.
- There is an increasing need in the country for institutions offering high class CRM training programmes to organisations, as this could save enormous cost and time to these organisations on learning and implementing the same.
- Administrate the system: one person or department must be held responsible for overseeing the welfare of the CRM automation system. A key role is the information "gate keeper" who is

responsible for ensuring that information is timely, relevant, easy to access, and is positively impacting users' decision making needs.

- Organisations need to select CRM vendors cautiously and must prefer those that offer sufficient training, incentives etc. to their employee/representatives, and bring with them a rich and diverse experience in the field.

With increasing competition, banks are embracing customer relationship management as a means to retaining customers and increasing what are currently very tight margins. If customer relationship management is ignored, the future is a bleak one of slower returns and poor customer retention. The study shows a significant improvement in the profitability of customer relationships, due to reduction in costs of campaigns, resulting from an improved understanding of customer behavior. However, CRM requires adoption of significant new skills, technology and culture together with some reorganisation of the marketing department.

CRM requires adoption of new skills, technology and culture together with reorganisation of the marketing department.

Concluding Remarks

In this new millennium there is an enormous opportunity for organisations to improve their 'customer ownership" by building a coordinate and integrated set of activities, which address all the key strategic elements of CRM. Ultimately, however, organisations' success in CRM will involve creating an appropriate strategic vision for the future, making the appropriate choice of applications, creatively using appropriate analytical techniques to exploit the data, and choosing the right vendor for supply of the technology solution. As the CRM journey continues, vendors predict that the near future will see a sharing of common customer interaction channels, with a push toward customization and personalization. There will also be a sharing of business rules across channels and the ability for customers to track channels in a seamless way. Another trend that is fast coming up is partnership among vendors. Seibel has an allegiance program where they work with 300 other companies to integrate and develop products. It is a partnering philosophy to deliver a product, even if they have competitive technology. Partnering is paramount. With regards to this study noting the limited scope with respect to subject selection and sample size with select banks in the Indian banking sector, it would be interesting to expand this research to other industries also. A wide spread study over a longer period of time using a large sample size and a methodology that ensured stronger reliability and validity measurements would make an interesting contribution to the customer relationship management literature.

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Marrying the Customer: A CRM Approach

S.P. Batra

Today companies have recognised that in order to survive the competition, the only factor which gives them the competitive edge is the long term relationship with customers, not just loyalty schemes, a help desk, or collection of customer data without undertaking detailed segmentation. Traditional marketing activities that emphasise customer acquisition are no longer sufficient. CRM recognises that marketing starts after the sale is over. Future marketing will need to create strategic relationship bonds and companies will have to practically wed the customer.

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We have seen that to inspire employees and make them customer oriented, many successful organisations display the following poster around their offices and on shop floors:

> "What is a customer? A customer is the most important person ever in our company—A customer is not dependent on us, we are dependent on him. A customer is not an interruption on our work; He is the purpose of it. We are not doing him a favour by serving him, he is doing us a favour by giving us the opportunity to do so. A customer is not some one to argue, to match wits with, nobody ever won an argument with a customer. A customer is a person who brings his wants—it is our job to handle them profitability to him and to ourselves".
>
> *– Mahatama Gandhi*

Customer—the Core of Business

Your company's revenues, profits and market-share and even your salary come ultimately from one source: your customers! No matter what products and services you provide, be it a bathing soap, data processing system, medical services, customers are the heart of your business. When you get right down to it, the one single thing a company needs to be in business is a customer.

- You don't need money to be in business,
- You don't need to have an idea to be in business,
- You don't need a shop, factory or office location to be in business,
- You don't need personnel to be in business,
- You don't even need a product or service to be in business.

All these things help, of course; But without a customer, you are not in business. If you have just one customer, you are in business. If you have lots of good customers, you have a successful business. If your company is successful—you have developed a solid base of good customers who do the nice things like:

- Buy more from you – even if your prices are (somewhat) higher than the competitors.
- Recommend you to colleagues, family and friends. There is no better promotional message than a recommendation from a satisfied customer.
- While a good customer will generate a lot of business for you, a dissatisfied customer can hurt you badly. For every complaint, there are ten other dissatisfied customers who did not make the effort to tell you of their dissatisfaction and since every dissatisfied customer gripes to an average of six people, every complaint represents 60 people who are walking around with a negative image of your company. Satisfied customers on the other hand:
  - Make you the 'standard' for an organisation
  - Try out new products and help you to make them better.

Good customers are usually willing to invest their time and effort to help you develop your new product and service. As customers become involved in your business, they tend to become better customers! They use your support, service training and other facilities. Often highly profitable products and service are usually offered to customers with whom you have a good relationship. Thus good customers are very essential to business, then the question – "What business are you in? will appropriately be answered as: "We are in the business of developing a solid base of good customers for our products and services"; And how can you get more (good) customers? That is what customer marketing is all about.

Half a century after independence, there has been a shift in the perception of customers. For a better part of this period goods were in short supply and there was a seller's market. But since the recent advent of the era of liberalisation, privatisation and globalisation, there has been total transformation in the way the customer is being perceived. Today markets direct efforts toward retaining customers and widening their customer base. The focus has shifted towards integrating the three elements – People, Service and Marketing, which is known today as Customer Relationship Marketing (CRM) which brings customer service, quality and marketing into close alignment.

Markets direct efforts toward retaining customers and widening their customer base. The focus has shifted towards integrating the three elements – People, Service and Marketing, as Customer Relationship Marketing.

In the past, there were not many players in the field. The customer was taken for a ride. Not much importance was given to product safety, quality, service and product appeal. The attitude of the manufacturer was that of caveat emptor. Today the market scenario has changed. Today you have more than half a dozen brands in each category. There is heavy competition in the field with each company fighting in the market to get a major share. Consumerism in India has come of age. Today the consumer is surrounded by a ring of confidence formed by customer protection laws and regulation of the Government, the powerful comforting hands of social organisation, improved quality of product and services, the need to give the best quality under competitive environment by the business community. The maxim coveat emptor has changed to caveat venditor.

In the past, sales service was considered as a cost centre. Companies were lethargic in attending to customer complaints. There were no service professionals and availability of genuine spare parts was also a problem. However, with increase in competition, parameters like price and quality have become comparable as latest technology is available to each and every company in the field – there could not be much differentiation on tangible assets. So, of late, the companies are concentrating on intangible assets namely the service. Today, after sales service is an important aspect and is no more considered as a cost centre, but as a potential profit centre. Every firm strives hard to retain the existing customer at any cost since they are aware of the fact that it is many times more costly to get a new customer than to retain an existing one.

The days of lone sales person working a territory and being guided only by a sales quota and compensation plan are numbered. Today customers prefer suppliers who can sell and deliver coordinated sets of products and services; who can quickly solve problems that arise, and who can work closely with customer's team to improve products and processes. Unfortunately most companies are not set up to meet these requirements. They often sell their products through separate sales force who work in isolation and do not work easily together. The technical people may not be willing to lend time to educate the customer. Integrated efforts of all personnel working together is the only key of winning and maintaining customers. This type of marketing is called Relationship marketing – which is based on the premise that important customers need focussed and

continued attention. Companies must monitor each key customer, know their problems and be ready to serve in a number of ways. They should call or visit them frequently, make useful suggestions about how to improve customer business, and take keen interest in the customers in person.

Mass marketing, so far practised, used conventional methods of advertisement and promotion. The new approach of relationship marketing is based on the belief that people do not buy things but they buy solutions to problems. In order to succeed, companies need unique insight into customers and their problems. When things are viewed in this perspective, 'relationship' bond with customers becomes the key to attracting and holding them.

Building relationship with key customers is not a new idea, the neighbourhood grocery store owner has always known the value of this approach to marketing. It is just that big companies which have been using mass marketing method for decades have forgotten this basic method. Going back to the basics does not mean that relationship marketing sets the clock back: the critical difference between the grocery shop owner and the big companies is that the latter has to set up a system in place which will allow it to do relationship marketing with a very large number of customers in a cost-effective manner.

Almost all companies can make a start in this direction by identifying the 'Key Customer'. Here Pareto's 80/20 rules helps; 20 per cent of customers bring 80 per cent of revenue. Obviously that 20 per cent mass is the most critical part of the company's revenue stream. The company does everything in its power to retain these customers and also increase the long term value of its relationship with them. There are some key aspects key aspects to be considered while toying with the idea of customer relationship. Firstly, the customer wants a single interface with his supplier i.e. he does not want to have to deal with several different companies to put together all that he wants from the marketer; secondly, the relationship manager needs to be tuned into the customer's organisation—and have the ability to suggest solutions, long before they become problems. In essence, he has to know the operations and systems of the customer's business along with his own systems and marry both of them.

Tzoka & Sareu (1997) have opined that relationship marketing is "the process of planning, developing and nurturing a relationship climate that will promote a dialogue between the company and its customer which aims at continued understanding, confidence and respect for each other's capabilities and concerns when enacting their role in market place and society". A key aspect of this definition is that a purposeful dialogue between the company and its customers can bring a higher level of learning about each other. From organisational management perception views dialogue as offering a way of building a basis for mutual understanding and trust by uncovering the basic cognitive process that underlines individual and group assumption.

Relationship marketing is the process of planning, developing and nurturing a relationship climate that will promote a dialogue between the company and its customer.

Relationship marketing is all about building one to one confidence between the customer and the product or service, creating the fuzzy, warm feeling that keeps the customer coming back again and again. It is the latest recipe in the quest of the company for competitive advantage in consumer markets. While some authors wonder whether this is a "flavour of the month" approach to marketing, other seems to agree that relationship marketing represents a genuine paradigm shift from exchanges, transactional focus of mass marketing to relationship between supplier and customer. Success is viable by means of integrating and co-ordinating all the activities of the firm and by instigating a clear customer focus. Understanding customers and contributing to the delivery of value to them requires an integrated approach by the whole organisation rather than the marketing department alone. Value is the customer concept of marketing discipline. There is wide agreement that the raisen d' etre of marketing is to assist the firm to create value for its customer that is superior to competition. Unless value is created and delivered to the customer, neither has the firm a legitimate right to exist nor can it accomplish its corporate objectives of bottomline.

Smart marketers work at building this long-term relationship with valued customers, distributors, dealers and suppliers. They build strong economic and social ties by promotion and consistently delivering high quality products, and good service at a fair price. Increasingly, marketing is shifting from trying to maximise the profit on each individual transaction to maximising mutually beneficial relationship with customers and other parties. The operating assumption is "Build good relationship and profitable transaction will follow".

Strategically excellent companies build unique relationship with customers that are difficult for the com-

party to plan, implement and monitor customer contact,

petitor to match. The competitive edge of these companies is not total quality management and/or total serable effect on company's bottomline. This approach leads to:

Focus

CRM on the Internet: The Relationship between Customer Satisfaction & Brand Loyalty

Horng-Der Leu, Hong-Jea Lai & Hsuan-Jung Chung

Many businesses move part service to Internet because on-line population has increased tremendously. In the virtual world, creating a satisfied customer through CRM and building loyalty is one of the vital topics that brook no delay. The real CRM prize is long-term competitive advantage. Using the advantage of Internet, combined with CRM, will increase customer-retention rate. This paper tries to find the way of building customer and brand loyalty on-line by CRM.

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Competition by internet companies can no longer be overlooked – the bookstore revolution raised by Amazon.com, is an example; so also, the internet securities, E*Trade, which has given a stiff challenge to the super securities Charles Schwab. A big enterprise no longer has advantage in customer service after the entry of worldwide internet; the internet has brought a great impact on traditional marketing (Lynn, Maltz, Jurkat & Hammer; 1999). The merger between Time Warner and AOL (American on line), the alliance between Kmart, the retail giant and Yahoo are a few instances. According to the E-Commerce Book report, there is a new user on the Internet every seven seconds. The research of The Web Sever, Netcraft Corp. in US, shows an amazing growth rate 50.8 per cent of global WWW(Web sites) that broke through ten million sites in February 2000.

A big enterprise no longer has advantage in customer service after the entry of worldwide internet.

Many businesses move part service to Internet because of the large on-line population which keeps increasing; a mighty Internet marketing wave has been springing up. Conceptually, the Internet represents an extremely efficient medium for accessing, organizing, and communicating information (Kaynama & Keesling, 2000). New customer acquiring cost is 5 times higher than customer retention (Heskett, Sasser & Hart, 1989). A five-point improvement in customer retention can lead to profit swings of 25%~85% (Reichheld & Sasser, 1990). Pepper and Rogers (1997) believe an enterprise must learn how to treat the unique needs of each customer in today's interactive era. Web-enabled customer relationship management is the need of the hour.

Kotler (1991) defines customer satisfaction as a consumer's pre-purchasing expectation and afterward evaluation. Companies have to collect customer preference in advance based on individual needs, and, apply data base information analysis and expand it into long term individual database and create an inseparable bond between company and customers (Blattberg & Deighton, 1999). Focus on customer retention, long-term relationship building and increased customer loyalty should be the main target for company, butting relationship marketing into practice (Berry & Parauraman, 1991; Berry, 1995). As Reichheld (1996) points out it can be cost saving and profit creating for a company by elevating customer loyalty, getting free recommendation and "word of mouth", reputation also, building the advantage of price as well. In the virtual world, creating satisfied customer through CRM and building loyalty is one of the important topics that brook no delay. The real CRM prize is long-term competitive advantage.

Classification of Internet Shops

To face the increasing international trade and competition, e-commerce is essential especially in information and communication technology (Nath, Akmanligil, Hjelm, Sakaguchi & Schultz, 1998). Underlying electronic business are the phenomena of digitalization and connectivity (Kotler, 2000). Internet could provide lower searching cost for consumer (Strader & Shaw, 1997), as it's easier for consumers to compare the price while shopping through the Internet. Hence some believe that Internet shops will cause price war and reduce profit from the marketer (Bloch, Pigneur & Segev, 1999). Therefore, we would like to discuss the meaning, types, and products of Internet shops.

"Internet shops" are referred to in literature also as electronic store, electronic marketplace, internet marketplace or virtual store (Yesill, 1997). They sell products through the Internet. Web sites are also increasingly being used for product development and improvement, internal marketing, customer service, and opinion polling (Arnold & Aslai-Gail, 1996). The ease of ordering via the Internet, and the associated reduction in cost-to-purchase and improved customer relationships are the benefits achieved and it can help a company determine where to implement similar solutions that contribute to revenue growth. Internet shops could build new consumer groups and contacts (O'Connor & Keefe, 1997; Bloch, Pigneur & Segev, 1999; Senn, 1996). For this reason, relationship marketing is regarded as a new marketing paradigm (Kotler 1992, Gronroos 1994), especially when combined with the Internet technology.

The success stories of the biggest bookstore chain in States, Barnes and Nobles and the retail giant Kmart, which established Internet shops successively, have given a fillip to the new industry of internet shops. The future of virtual market might be good as Internet shops get established one after another around the world, even though most of them don't have much profit at present. Internet has the advantages of low cost, high speed, moreover; it can work across time and space, and mounts a strong attack on traditional industries.

Internet has the advantages of low cost, high speed, it can work across time and space, and mounts a strong attack on traditional industries.

Research reports reveal that there is no consistent classification of Internet shops. Hoffman, Novak and Chatterjee (1995) have classified e-business into 6 types according to its marketing function: online storefront, Internet presence, content, mall, incentive site and search agent. The classification of electronic shops by Taiwan economic departments is: store, specialty shop and mall, with great majority of Internet shops presented in online storefront and malls. Till now, scholars differ in their views with no consistent classification of Internet shops. Kotler (2000) groups sites into two basic forms:

Corporate Web site: In this type of site, a company offers basic information about its history. mission and philosophy, products and services and locations. It might also offer current events, financial performance data, and job opportunities. The basic requirement for markets: Pay attention to the basics, such as providing names, phone numbers and dates, and making it easy for customers to purchase products on-line.

Marketing Web site: This kind of Web site is designed to bring prospective customers closer to purchase or other marketing outcome. The site might include a catalog, shopping tips, and promotional features such as coupons, sales events, or contests.

Other scholars have different views on Internet shop classification, Taiwan researcher, Lin (1995), classifies Internet shop's services into 3 types; communication-oriented service, information-oriented service and product-oriented service. Xu (1996) defines it as online storefront, mall and information service. There are 4 types viz, domestic service, global service, domestic transactions and global transactions according to Quelch & Klein (1996), 3 types – informational webs,

Table 3: Customer and Brand Loyalty

Conducted by	Time	Focus on
Chicago Tribune,	Late 1940s - early 1950s	Consumer diary panel data that recorded consumer household purchases.
Most of the early work in customer or brand loyalty was focused primarily on how customers purchased or "behaved" in the marketplace.		
Farley's (1964)	mid 1960s	Economics of information i.e. the cost and ability of consumers to search for information about alternatives and to understand brand choices.
Jocoby & Kyner (1973)	Early 1970s	Repeat purchasing behavior
Much of the theory base for brand loyalty stems from attempts to model basic consumer behavior, that is, how consumers evaluate alternatives and make purchase decisions.		
	1980s	Scanner data, Consumer choice and behavior modeling (using primarily observable consumer purchase behavior.)
Jones and Sasser's (1995) Reichheld's (1996)	1990	The economic value of customer loyalty.
Much of the brand or customer loyalty concepts have been developed from the marketer's view (the economic value of customer loyalty to the firm and how that loyalty might be managed.), less work appears to have been done on the consumer side (asking why consumers become and remain loyal to brands.)		

Source: Schultz & Bailey (2000)

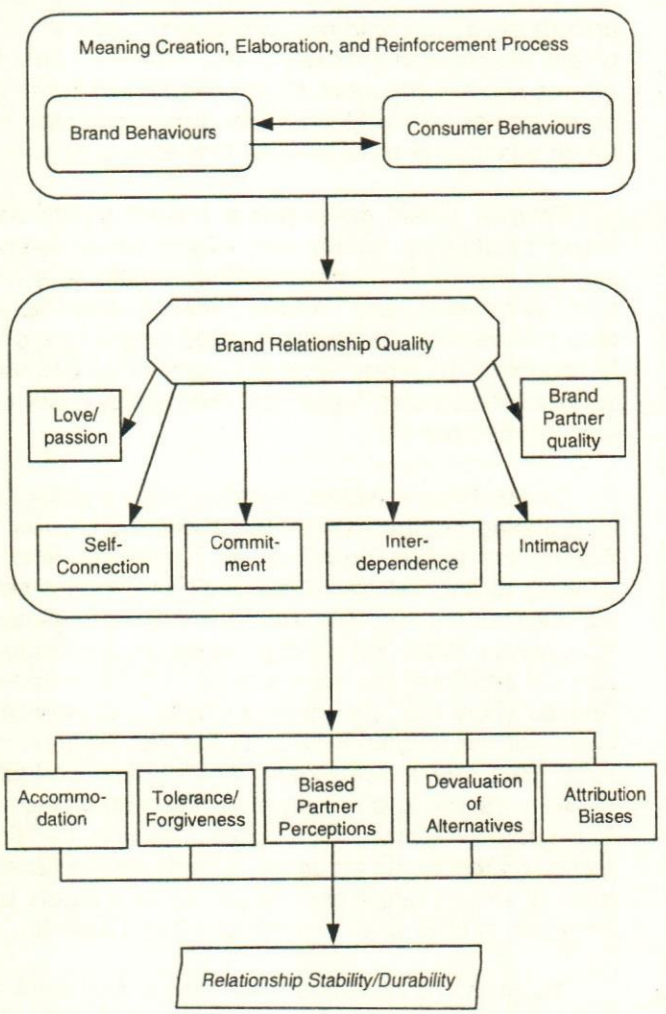

Fig. 1. A preliminary model of brand relationship quality and effects on relationship stability

Jr (2000) focuses on the relationship of brands among brands, consumers, and retailers and summarized the value of manufacturers' brands to channel members as in Table 4.

From the above researches, it is obvious that it is helpful for companies to combine their business with brand, Internet and CRM. Reichheld found that companies that retain just 5 per cent more of their customers were 150 per cent more profitable. Good customer relationships positively impact the bottomline (McLaughlin, 2000). By using the advantage of Internet, and combining it with CRM, will increase customer-retention rate.

Customer satisfaction

There are many researches on customer satisfaction and loyalty. Oliver (1980) defines customer satisfaction as the disconfirmation expectancy and conception. Kotler (1991) identifies customer satisfaction as pre-purchase expectancy together with the post-purchase evaluation of product's quality. Good customer relationship management can satisfy customers immediately, raise customer satisfaction, build long-term relationship and increase business profits. Therefore, relationship marketing could provide a potential power for business to get big profits (Berry, 1995). A business needs to learn to treat the unique needs of each customer (Pepper & Rogers, 1997). Retaining old customers; building long term relationship and increasing customer loyalty are the main aims of putting *CRM into practice (Berry, 1995).*

Some scholars found satisfaction as the leading factor for loyalty (Anderson & Fornell, 1994; Oliver & Linda,

Table 4: Value of Manufacturer's Brands to Channel Members

	Manufacturer	Wholesaler	Retailer	Consumer
Benefits	Higher sales volume	Preestablished demand	Preestablished demand	Implicit quality guarantee
	Lower production costs	Lower selling costs	Image enhancement for retailer with consumer	Lower search costs
	Easier new product introduction	Higher sales volume	Manufacturer's commitment to promote the product	Possibly lower retail prices associated with higher sales volume
	More control over retailers	Better inventory turnover use of warehouse space	Relationship of trust and credibility with consumer	
	Relationship of trust with consumer		Possibly higher margins on strongest brands	Prestige associated with brand image
			Higher inventory turnover	
			Lower selling costs	
Costs	Higher costs of advertising	Costs of selling and stocking multiple brands in same category	Less control over relationship with consumer	Higher retail prices associated with advertising and promotion costs
	Higher sales promotion costs associated with internet brand competition		Difficulty of allocating limited shelf space among multiple brands	
			Possibly lower margins than on store brands	

Source: Webster Jr (2000)

1981; Pritchard, 1991). Others proposed that it's not possible to create a loyal customer by merely satisfying a customer (Cronin & Taylor, 1992; Fornell, 1992; Oliva et al, 1992); thus, increasing customer satisfaction does not necessarily lead to increased customer loyalty to a product, service or organisation (Abdullah et al, 2000), 40 per cent of them will leave and start doing business with the competition (Michaud, 2000). Systems for measuring satisfaction must match the speed with which customers change their views toward brands. The relevance of the traditional model should not be overlooked (Chiagouris, 2000).

In on-line marketing, the consumer, not the marketer, gives permission and controls the interaction. Schultz and Bailey (2000) showed that pwoer has shifted from product-driven marketplace, to distribution-driven and finally to customer-driven (Figure 2) marketers and marketplace; marketplace power has shifted to the customer or end-user. The arrival of e-business has shifted market power from the supplier to the customer, fostering expectations of faster, cheaper, and more effective service (Krueger, 2000).

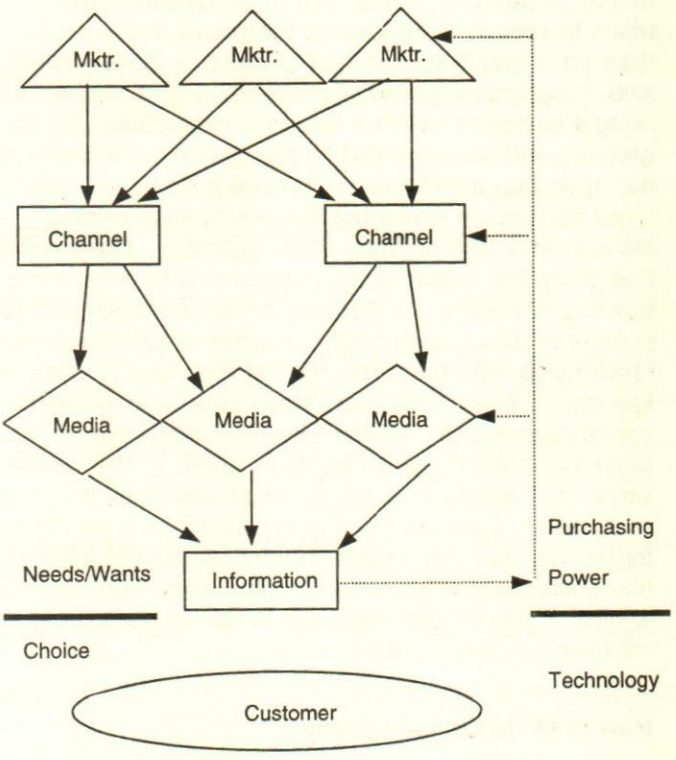

Fig. 2. The Consumer-Driven Marketplace

The arrival of e-business has shifted market power from the supplier to the customer, fostering expectations of faster, cheaper, and more effective service.

Customer satisfaction is an important index both in traditional and Internet marketing as proved from researches. Many companies still try their best to satisfy customers in order to build long-term relationship even though they can't make sure if satisfied customers will become loyal customers. However there is no literature suggesting neglect of customer satisfaction. Moving to on-line marketplace, we need some more empirical articles to prove if satisfied customers can become loyal customers yielding the same results as in the traditional model.

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The path of least resistance is what makes rivers run crooked.

– Elbert Hubbard

Creating a Customer Driven Organisation

P.K. Chatterjee & A. Prasad

Despite the recent emphasis, there is considerable misconception within engineering organisations as to what really constitutes modern marketing. Many professionals erroneously equate marketing with selling and pursuit of sales, rather than customer's post sales delight. There are others who recognise the need to be more responsive in the markets in which they operate, but do little to actually develop customer oriented marketing approach to carry out business. This article is an attempt to formulate customer focussed relationship marketing (CRM) programme for creating a customer-driven organisation. The article dwells upon developing and implementing the concept of CRM in the context of engineering consultancy services.

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The year 1991 is widely acknowledged as the turning point in India's economic history. Since then, the business scenario in India underwent a dramatic metamorphosis. Influx of multinational companies, intense competition, increased deregulation, fluctuations in demand, rapid technological developments, exposure to a multiple of products and promotions, proliferation of brands, advent of information era etc. have made Indian customers more demanding, discerning and value seeking. Business organisations started facing the reality of not getting the fat margins they used to enjoy in the pre liberalised era. Majority of Indian business organisations found themselves in deep trouble for neglecting the very reason of their business—i.e. the customer. The era of mass marketing, segmented marketing, transactional marketing is over. Indian customer, specially the industrial customer has become a world class customer and expects world class technology, products and services. He has access to global technology, global products, global practices and even global capital. He is growing more sophisticated and price sensitive. He is short of time, and wants more convenience and has high service expectations and decreasing supplier loyalty. With a plethora of alternatives designed by competing firms to court them, engineering consultancy organisations are finding it increasingly difficult and challenging to gain and retain customers. The situation calls for a close association with customers through customer relationship marketing (CRM).

Customer Relationship Marketing

It is more effective and profitable to retain existing customers than attracting/running after new customers. The longer a customer stays with a company, a larger share of their investment is likely to come to the engineering consultant. Again, the closer association helps in designing customised offerings as the customers co-operate by disclosing their requirements. This has forced engineering consultancy organisations to aim at retaining the existing customers and gaining more business/work orders from them.

On the contrary, acquisition strategies are risky and expensive specially when there is no certainty about today's customer, forget about getting customers five years from now, next year, next month, or even tomorrow. The greatest opportunities thus lie in keeping, retaining and growing with the existing customer. The key to customer retention and zero customer defection is customer delight and strong customer relationship.

What is Customer Relationship Marketing (CRM) ? It is an ongoing process which aims at retaining current customers by creating a long lasting, fruitful relationship/alliance with them and gaining prospective customers utilising the current customer as positive referrals. The basic goal of CRM is to identify the right customers to focus, getting close to them, understanding their techno-economic requirements well, delivering the right message to the right customer at right time, optimising delivered value by offering a better value proposition, offering quality services that are expected, making them feel that they are unique and are truly special, managing their techno-financial concerns with empathy etc. thereby making them intimate and loyal to the firm. It calls for putting the customer at the centre and re-orienting and aligning all facets of organisation to deliver sustained customer delight every time. In reality, CRM means realigning policies, values and culture, processes and practices, technology and people of the organisation.

Customer Relationship Marketing is an ongoing process which aims at retaining current customers by creating a long lasting, fruitful relationship with them and gaining customers utilising positive referrals.

CRM encompasses inputs like understanding customers and their requirements, their expectations and benefits sought, individual care, attitude and attention, one to one partnership, information sharing, value added products and services etc. with quality being main concern. The outputs/pay off of CRM are customer delight, enhanced customer retention, enhanced customer loyalty and trust, zero customer defection, increased customer profitability, decreased marketing efforts and costs, customised offerings, superior value through better services, reduction in order procurement uncertainties, increased customer share, positive referrals, life time customer, recognition, total customer commitment, extensive customer contact, respect, reward, etc.

Relevance of CRM for Engineering Consultancy Services

There are few distinct reasons behind the relevance of CRM in engineering services. Firstly, for engineering consultancy organisations, acquiring and serving new customer is expensive, cumbersome and risky like any other business organisation. Hence retention policy is the best policy. Secondly, engineering consultancy marketing, by virtue of its limited customer base and strategic dependence on a few customers, can present a fertile breeding ground for CRM to flourish. Thirdly, CRM investments pay off handsomely as customers have long time horizons and high switching costs. Both the customer and the consultant invest a lot of resources in the relationship building exercise. The customer would find it risky to switch to another consultant and the consultant would find it a major loss to lose this customer. Fourthly, it is relatively an easy task for an engineering consultancy organisation to implement such a concept as it operates in B2B market. Thus emerged the saga of CRM in engineering consultancy services. The real issue in the globally competitive scenario of the 21st century will not be mere deployment of superior engineering and technology, or highly qualified personnel but, more importantly, it will be effective management of customer relationship. Customer relationship must be the foundation on which the success story of design and engineering excellence will unfold.

Establishing CRM Programme – Making it Happen

The CRM programme may encompass the following activities:

- Assessment of customer relationship bonds.
- Identification and selection of customers meriting as CRM partners.
- Customer expectation management.
- Monitoring of Relationship: Measurement of Customer Satisfaction Index (CSI)
- Identification and removal of barriers to successful implementation of CRM
- Setting objectives for the CRM partners
- Implementation of the plan, co ordination and control

Assessment of Customer Relationship Bonds Prevailing in the Organisation

Assessment of customer oriented relationship cul-

ture prevailing in the organisation is the first step to establish CRM programme. This aims at assessing the level of customer oriented business culture present among the front line customer contact employees in the organisation so that, gaps if any, can be suitably bridged and right customer attitude can be created. After all, in engineering consultancy business, people/front line employees are the face of the organisation, their attitude and competence the firm's USP; service quality depends a lot on the people, their competence and their attitude. The engineering consultant's marketing and sales team, design and engineering team or project team interacts with the customer on plenty of occasions. The quality of service depends heavily on the interactions during the project planning and execution phase which in turn depends upon the consultant's ability to listen. At every such interaction, customer bonding occurs creating Moments of Truth. At every point of interaction, the customer experiences the service and makes an evaluation about it being good or bad. That is the moment which creates satisfaction or dissatisfaction. That is a moment when the experience could be very different than from what was expected, resulting in a perception of intense delight. That is the moment when a problem may occur. Every contact is a moment of truth, when a judgement is made about the service, the organisation and the people. Expectations are evaluated and revised and decisions are made with regard to continuance of contacts. A series of moments of truth constitute a cycle of service. Thus customer oriented mindset among the customer contact employees is vital.

Assessment of customer oriented relationship culture in the organisation is the first step in establishing CRM programme.

To assess this, customer relationship audit needs to be carried out. Survey of front line customer contact employees who work in close association with customers is to be conducted throughout the organisation. The detailed steps followed when such a survey was conducted are as follows:

Questionnaire Design: The questionnaire covered 12 aspects related to customer oriented business process (Refer Table 1). To increase study effectiveness and high degree of response from a wide cross section of front line customer contact employees, necessary explanations had been provided for these bonding elements in line with philosophy best suited to engineering consultancy services. The rating method used was Likert Scaling Technique. The respondents were impressed upon to express their opinion judiciously on a five point (1-5) numerical scale, where 1 is lowest score and highest. The questionnaire was pre-tested by undertaking a pilot survey of employees. The tentative questionnaire was further refined by incorporating the views/changes suggested by senior marketing officials.

Selection of Target Respondents: To obtain relevant feedback from different grades of target respondents, cluster sampling method was followed. Three clusters were designed which were mutually exclusive and exhaustive categories. Cluster 1 comprised E7 & E6 (top two levels) grade employees, Cluster 2 E5 & E4 (two middle levels) grade employees and Cluster 3 comprised E3, E2 & E1 (bottom three levels) grade employees. Considering the strength of the office, distribution pattern of target respondents and keeping in mind uniform representation, sample size of 8-10 was selected. The total number of respondents considered as target respondents numbered around 200.

Data Collection: The questionnaire was administered through interviews undertaken by the marketing department personnel through office/department in-charges. Judgement sampling method was followed assuming that the particular sampling unit will contribute best to the research questions. Accordingly, office/department in-charges were asked to use their own discretion in selecting the respondent best suited for the purpose to have an authentic feed back.

Data Analysis & Interpretation: Out of 200 respondents targeted, 192 filled in questionnaires were received. All responses were treated as representative of the population and allotted a distinct cluster wise respondent number. The responses received were analysed cluster wise first then on combined basis using weighted average method. The findings are given in Table 1. Statistical tools like standard deviation and coefficient of variation were calculated to check the uniformity of observations within the cluster. The overall index for customer oriented business process worked out to 74 per cent. The standard deviation and coefficient of variation were small for all the three clusters which indicates a high degree of uniformity of observations.

Recommendation: The aspects which have not scored well need improvement and must be addressed accordingly. Internal marketing and interactive marketing programmes should be carried out. Internal marketing will help in reinforcing and strengthening external marketing and interactive marketing.

Table 1: Customer Oriented Business Process

Summary Findings (Scale 1-Lowest Score, Scale 5-Highest Score)

Customer Contact Employees	No. of Respondents	Weightage Alloted %	Mean Score	Degree of Orientation	Standard Deviation %	Coefficient of Variation
Cluster-I (E7 & E6 Grade)	81	40	3.8	76%	0.27	7.0
Cluster-I (E5 & E4 Grade)	52	35	3.7	73%	0.28	7.7
Cluster-III (E3, E2 & E1 Grade)	59	25	3.6	73%	0.23	6.4
Index			**3.7**	**74%**		

Cluster Wise Findings (Scale 1-Lowest Score, Scale 5-Highest Score)

Aspects	Cluster-1		Cluster-2		Cluster-3		Combined Weighted Score
	Weightage Alloted %	Score	Weightage Alloted %	Score	Weightage Alloted %	Score	
Corporate Culture	40	3.7	35	3.7	25	3.8	3.7
Quality Orientation	40	3.8	35	3.8	25	3.5	3.7
Responsiveness & Promptness	40	4.0	35	3.7	25	3.8	3.8
Competence	40	4.0	35	4.0	25	3.8	4.0
Reliability	40	3.9	35	3.7	25	3.8	3.8
Courtesy	40	4.2	35	4.2	25	3.7	4.1
Credibility	40	4.0	35	3.7	25	3.8	3.9
Access	40	4.1	35	3.7	25	4.0	3.9
Value Enhancement	40	3.6	35	3.6	25	3.5	3.6
Customisation	40	3.6	35	3.4	25	3.4	3.5
Customer Oriented Marketing	40	3.5	35	3.3	25	3.3	3.4
Customer Focussed Organisation	40	3.3	35	3.1	25	3.3	3.2
Mean Score		**3.8**		**3.7**		**3.6**	**3.7**

Identification & Selection of Customers Meriting as CRM Partners

Implicit in the concept of CRM is the idea of customer selectivity. By focussing limited, scarce and costly resources towards those customers who can be profitably served, the organisation can increase market productivity. Again, customers appear at different stages of marketing and in various shapes and sizes. It is not worthwhile to establish relationships with all customers. Hence it is critical to choose the right customers. To start with, a list of major industrial houses was prepared keeping in mind their future investment plans and organisation's capacity, capability and facility balance. Last few years past sales records were analysed to see the business procured by the organisation from customers. Expert opinion was also sought in this regard. The data mining may give a clear indication that there are few major industrial houses who account for more than 70 per cent of the organisation's business and are critical for its survival and future growth. For the time being, the organisation can select these few industrial houses as CRM partners. However, additional customers who show exceptional growth can be added subsequently.

Following ten criteria were used to rank customers meriting as CRM partners: Revenue potential of customer with relation to core competence of the organisation and competitive advantage; purchase procedure followed by the customer like tendering followed by technical and financial rating; likelihood of awarding the jobs on nomination/repeat order basis, technical and other project related expectations and organisation's performance gap; financial competence and past payment records of the customer; corporate culture and style of functioning of the customer (like bureaucratic approach, more demanding and discerning and hence very expensive to serve); customer's clarity of project concept with no mid term changes; customer values relationship (like respect to consultant; keep commitment; integrity; advocate/supporter; propensity to be

loyal or switch) degree and nature of past association; customer's resourcefulness and long term future growth potential. However these are not all and there could be other criteria/profiles also.

Scale of 1-10 can be used for rating individual industrial houses/customers on these ten aspects. The overall rating will indicate who matters and will act as a guideline to arrive at which groups of customers we wish to serve differently. Customers who rank high naturally matters most, and hence need the best CRM. For others, the CRM degree may vary. Such ranking helps to determine what magnitude should be emphasised for them. A brain storming session was conducted among the executives of the Marketing Department to rank these selected customers in order of merit. The session members were asked to table their views based on their perceptions about the customers. Individual member opinions was then summed up and averaged to arrive at merit rating.

Customer Expectations Management

Customer expectations management deals with two issues, first, mapping customers' pre sales expectations and second, optimising them. Understanding and determining what constitutes customer's expectations is essential as it helps in optimising these expectations in line with the likely post sales acquisitions. CRM signifies the shifting of focus from managing post sales acquisitions and activities to pre sales expectations as the organisation can not maximise customers' post sales acquisitions due to its own limitations.

Customer expectations management deals with pre sales expectations and optimising them.

So, what are customer's expectations in relation to engineering consultancy services? The expectations relate to the entire marketing mixes being offered by the engineering consultant. It generally encompasses the service mixes, service placement, the process of rendering the services, the people involved in rendering services, physical evidences associated with the service, communication, fees etc. Issues like scope of services, technical and design calculations, quality of detailed drawings, quality of report, composition of task force, manpower deployment, opening a site office, shorter time schedule, activity scheduling, technological know how, project management softwares used, progress reporting, approval of vendor's drawing in time and accuracy, project management method used, defending to third party, co-ordination with various agencies contractors working for the project, minimal assistance from project authority, trouble shooting, no mid way variation, no time & cost over runs, quality of 'as built' drawing, fees, etc. are the various customers's expectations elements. The expectations differ substantially from one customer to another, from one situation to another. Not all customers have all the expectations all the time, but some have some of them some of the time. For this reason, expectations optimisation exercise is to be undertaken. Over expectations are to be deflated and brought back to the firm's marketing mixes line. This is called expectations optimisation or customer expectation management. Interaction with customer on various occasions starting from day one during pre sales/pre contracting stage is a critical and important aspect for customer expectations optimisation, thereby maximising satisfaction at later post sales stage. For optimising the expectations, strategic nature of the customer, volume of business expected, profitability, competitors offering, etc. must be kept in mind. The engineering consultant who interacts maximum and raises more questions succeeds in doing justice to the customer as well as to the organisation. The engineering consultant who succeeds in optimising customer requirement at the earliest and maintains consonance, has very high probability of success.

Optimisation of expectations is necessary for delighting the customer. If a customer expects something to happen, then the organisation should make sure it happens. If the expectation is high, or will take some time to meet or is unrealistic for the organisation to meet, then this should be clearly communicated to the customer during pre contracting stage. The organisation should not acquire a customer by over promising. Promise/commit what can be fulfilled, what can be rendered and render what has been promised. In reality, customers are too often acquired by over promising or assuming and then under delivering on their heightened expectations which ultimately leads to dissatisfaction and annoyance. Such an approach is highly detrimental and should be avoided at all cost.

The organisation should not acquire a customer by over promising.

Once the expectations are known and have been optimised to the feasible level, the next task before the engineering consultancy organisation is rendering the services as promised. Whatever is committed verbally or in the contract document, or in the minutes of meeting on the expectations parameters, must be maintained.

Monitoring of Relationship: Measurement of Customer Satisfaction Index

Customer's satisfaction with the engineering consultancy organisation and its service is the driving force for creating future relationship; hence it needs to be monitored regularly. For this, the organisation must take a peep inside the mind of the customers to read their perception about the quality of service that they have received from the engineering consultant, what are they seeking, their expectation-acquisition gaps, or any other important aspect which was left unattended during service delivery period. This calls for measurement of customer satisfaction index (CSI). Customer survey needs to be conducted with an aim to know how satisfied the customers are, what drives this satisfaction, how much more potential there is for satisfying, what is the present and expected level of relational parameters that need to be included in designing the customised marketing mixes. etc. The detailed steps followed for conducting such a survey are as follows:

Questionnaire Design: A well structured undisguised close ended questionnaire was used as a tool for collecting primary data from the customers. The questionnaire covered various aspect for services like planning, project report & analysis; basic engineering; detailed engineering; project management & monitoring; construction management and site supervision and EPCC which the organisation has rendered. The questionnaire also covered various parameters related to quality aspects like consistent quality, cost competitiveness, competence, incorporation of state of the art technology in design, reliability, responsiveness/ promptness, communication, understanding customer/project requirement, customised service, adhering to time schedule, willingness to trouble shooting, commercial offerings, courtesy etc. The rating method used was again Likert Scaling Technique. The respondents were asked to express their views as judiciously as possible based on their past project experience with the organisation on a five point (1-5) numerical scale where 1 is lowest and 5 is excellent. The questionnaire was pre-tested by undertaking a pilot survey of customers and refined by incorporating the views/changes suggested.

Selection of Target Respondent: Due to its limited customer base and strategic dependence on a few organisations, census method was followed for data collection. The customers to whom the organisation had rendered its services during the last three years were considered as target respondents. As such, the total number of organisations targeted numbered around 135. The research design was thus, purely qualitative.

Data Collection: Census method was followed. The questionnaires were administered through personal interview and mail survey technique. For customers contacted through mail survey technique, after initial mailing, three follow ups were carried out.

Data Analysis & Interpretation: Out of 135 target respondents, 83 responses were received. All responses were treated as individual customer feedback, and allotted a distinct respondent number and analysed. On each aspect, the distribution of response pattern i.e. weighted score was calculated by aggregation of individual opinions. Then statistical tools were employed to study the uniformity of observations i.e. homogeneity/heterogeneity of feedback. CSI was calculated for the set of parameters and varying weight allotted to the different services as indicated herewith: Planning, Project Report & Analysis - 5 per cent; Basic Engineering - 15 per cent; Detailed Engineering - 30 per cent; Project management & monitoring - 10 per cent; Construction Management & Site Supervision - 10 per cent and EPCC - 30 per cent. The varying weights were allotted based on nature of the service, engineering & technology inputs, interdisciplinary nature and relative contribution to organisation's sales turnover. CSI for engineering & consultancy services mixes worked out to 76 per cent whereas the average rating on various quality worked out to 79%. The above findings are thus in consonance. (Refer Table 2). It is evident from Table 2, that the standard deviation and coefficient of variation is small. A small standard deviation indicates a high degree of uniformity of observations i.e. respondents feedback. The magnitude of dispersion i.e. variability of feedback from their mean feedback is very less/negligible. Thus the feedback is highly consistent as well as homogeneous and hovering towards their mean.

On individual basis, there are many customers who have expressed very high opinion about the organisation's strong points and suggested ways of further improvement. On the other hand, there are few respondents who are at variance. They have suggested further development in certain fields with specific reference to finer aspects/issues; they wished to see the organisation as global leader in the field of engineering & consultancy, project management and execution of turnkey projects.

Recommendation: In line with the commitment made in the letter expressing organisation's desire to conduct the survey that the organisation will be grateful for all advice and every suggestion and to avoid breeding cynicism and dissatisfaction among respondents every opinion had to be taken at right earnest with high priority. Due attention was paid by initiating appropriate actions, followed by a communication to respondents on actions initiated by the organisation.

Table 2: Customer Satisfaction Survey

A. Summary Findings (Scale 1 - Poor, 5 - Excellent)

Services	Weightage Allotted	Mean Score	Percentage Degree of Satisfaction	Standard Deviation	Coefficient of Variation
Services Mixes					
Planning, Project Report & Analysis	5	3.9	77%	0.21	5.4
Basic Engineering Services	15	4.0	81%	0.11	2.7
Detailed Engineering Services	30	3.9	78%	0.17	4.4
Project Management/Monitoring Services	10	3.5	71%	0.15	4.11
Construction Management & Site Supervision Services	10	3.8	76%	0.14	3.7
Equipment Design, Engineering, Manufacture, Supply/Procurement, Storage, Construction, Erection & Commissioning (EPCC)/Turnkey Basis	30	3.7	74%	0.16	4.3
Customer Satisfaction Index	**100**	**3.8**	**76%**		
Quality Aspects		**3.9**	**79%**	**0.20**	**5.1**

Identification & Nullification of Barriers to successful implementation of CRM

In reality, there are many factors that work to destroy this noble logical view. Many engineering consultant companies carry out marketing planning very professionally but the end result, in terms of what the customer sees and experiences, is not what they thought it had agreed to render. Hence it is essential to study the barriers responsible for non achievement and try to nullify them. In view of this, barriers to successful implementation of CRM concept was also surveyed. The aim was to identify the present barriers so that these can be demolished by undertaking suitable measures. The detailed steps followed for conducting such a survey were as follows:

Questionnaire Design: The questionnaire covered 12 aspects related to barriers to successful implementation of CRM (Refer Table 3). The rating method used was again Likert Scaling Technique on a five point (1-5) numerical scale. Scale-1 is barrier to a very large extent, Scale-2 is barrier to a large extent, Scale-3 is barrier to a reasonable extent, Scale-4 is barrier to a limited extent and Scale-5 is no barrier. The response category for favourable vis-a-vis unfavourable statements was carefully labeled. The direction of the response scores for an unfavourable statement was scaled low and opposite to a favourable statement.

Many companies carry out marketing planning professionally but the end result, is not what customers expect; it is essential to study the barriers responsible for non achievement and try to nullify them.

In order to economise on time and cost, this survey was carried out in conjunction with customer relationship bond prevailing in the organisation. As such, the target respondents were from three clusters numbering 200.

Out of 200 respondents targeted, 192 filled in questionnaire were received. The responses received were analysed cluster wise first, then on combined basis using weighted average method. The findings are given in Table 3. Statistical tools like standard deviation and coefficient of variation were calculated to check the uniformity of observations within the cluster. The overall index for barriers to successful implementation of relationship marketing worked out to 58 per cent towards favourable, where 100 stands for No Barrier. It was again observed that the standard deviation and coefficient of variation is small for all the clusters which indicates uniformity of the observation.

Recommendation: Though relationship marketing barriers index stands at favourable side, the organisation should not feel happy and should try to nullify the barriers so that the index at least lies between 75 to 80 per cent. More stress needs to be laid to know how it can be improved further. Appropriate actions may be initiated to bridge the gap by nullifying the barriers.

Table 3: Relationship Marketing Barriers

Summary Findings (Scale 1 - Barrier to a Very Large Extent, Scale 5 - No Barrier)

Customer Contact Employees	No. of Respondents	Weightage Alloted	Mean Score	Degree of Orientation	Standard Deviation	Coefficient of Variation %
Cluster-I (E7 & E6 Grade)	81	40	2.8	57%	0.24	8.3
Cluster-II (E5 & E4 Grade)	52	35	2.9	58%	0.33	11.5
Cluster-III (E3 E2 & E1 Grade)	59	25	3.0	59%	0.32	11.0
Index			**2.9**	**58%**		

Cluster Wise Findings (Scale 1 - Barrier to a Very Large Extent Scale 5 - No Barrier)

Aspects	Cluster 1		Cluster 2		Cluster 3		Combined Weighted Score
	Weightage Alloted %	Score	Weightage Alloted %	Score	Weightage Alloted %	Score	
Key concern is for immediate sales rather than RM	40	2.9	35	2.7	25	3.2	2.9
The reward would favour for procuring orders from the customer rather than gains from RM	40	3.1	35	3.0	25	3.1	3.1
Gains to not justify the efforts	40	2.8	35	3.0	25	3.0	2.9
Co-ordination between various departments & offices	40	2.8	35	3.0	25	2.7	2.9
Inability to provide customised service due to less scope to create service differentiation	40	3.1	35	3.1	25	3.0	3.1
Lack of proper authority	40	2.6	35	2.4	25	2.6	2.5
Attitudinal barriers of the personnel; say Chalta Hai attitude	40	2.5	35	2.2	25	2.3	2.3
Organisational size & style of functioning	40	2.5	35	2.5	25	2.5	2.5
Dubious business value of the customers	40	2.7	35	3.1	25	3.1	3.0
Customer is less concerned for consultant	40	2.9	35	3.2	25	3.1	3.0
RM is another fad which would pass away like many earlier innovative management concepts	40	3.2	35	3.3	25	3.5	3.3
Mean Score		**2.8**		**2.9**		**3.0**	**2.9**

Setting objectives for CRM Partners

Objective setting holds the key to successful CRM programme. It would be prudent for the organisation to set objectives for the customers based on the findings and focus on them, monitor them regularly and measure them. The organisation should redefine its marketing objectives taking into account what customers expect and what degree of relationship is required. The relational parameters identified during the survey and customers' propensity to be CRM partner should be the guiding principle in this regard. These indicate which group of customers the organisation should concentrate on and what will be the service mixes to serve differently.

The organisation should redefine its marketing objectives taking into account what customers expect and what *degree of relationship is required.*

The objectives set could be in terms of services quality, incorporation of state of the art technology, *need for accounts manager, deployment of human resources, place of rendering services, structure of* project team, willingness to share in customers' risk,

trouble shooting, communication channel, commercial terms & conditions, fees, etc. While setting the objectives, the organisation should never assume relational parameters, rather they should try to find them out. Objectives which are difficult to achieve should not be set. Over promising and then under delivering will be the biggest marketing blunder. The ultimate test of CRM programme is the ability of the organisation to retain a customer in a choice situation.

Implementation Co-ordination & Control

This is putting the CRM agenda in action. To implement the CRM programme, the organisation should outline the process and create organisational infrastructure to support CRM. Top management should take the initiative to implement these programmes including regular monitoring and control. The steps discussed should be implemented on regular basis under the leadership of a senior personnel. Top management should make sure that the mechanism exists to get regular progress reports on implementation, not just on final results, and then checking the validity of reports. As far as possible, make everyone who manages the contact/project accountable for it. In case of problems, top management support can be taken.

Having identified the key accounts and respective relational parameters, the next task is to build a relationship with them. The organisation should stay in touch with the customer, arrange customer conferences, form customer clubs etc. to have a 1:1 relationship. Appointing accounts managers or even a key accounts manager will help in understanding each other better, developing a closer partnership and identifying the service opportunities available with the customers. The organisation should create a physical or technical environment that makes the customer feel in the right mood/ at home while doing business with them. The accounts manager must respect, be accessible to, and behave consistently with the customer. There has to be congruence of thoughts, words and actions, positive regards and transparency in dealings. To achieve excellent performance, the account managers have to make an assessment of its customers, their whereabouts, needs, expectations, techno-economic requirements as well as aspirations. They need to spend enough time with customers so that they have a fundamental understanding of their customer's business and of their current and forthcoming needs.

The organisation should also develop a clear job description for the accounts managers/key accounts manager. Each should be assigned one or few relationships to manage with distinct goals and made responsible for them and for all information about them. They must develop customer relationship plans. They must have proper authorities in financial and administrative matters, power, reporting relationships and evaluation criteria.

There should be a customer feedback and complaints resolution system. After all, customer complaints give invaluable feedback to the engineering consultancy organisation, not only helping to solve the immediate problems but initiating company wide improvement measures for future benefit of both the parties. The front line customer contact employee should work with an aim of collecting as much feedback as possible from customers. Such a system facilitates an engineering consultant to redesign its services mixes, operating methods and practices and overall service quality systems. Without adequate feedback system, it is difficult to think of preventive measures. The rule of the game today is teamwork. All functional areas, be they marketing or any other, have to be equally aware and concerned. The corridors between marketing and design & engineering, project departments, finance, systems and other functional area must be kept wide open for a free flow of ideas between customers and these departments.

Preventive Premature Death of CRM

Customer relationship marketing is a dangerous phrase. The idea of relationship marketing seems logical and obvious. Explaining the idea does not take a long time. The principle of CRM sounds ideal. But does it really work in today's cut throat competitive scenario where riding over attitude of the customer is very common. 'Is it practical or is CRM a fallacy or another fad which would pass away like many earlier innovative management concept.' There are many pitfalls for CRM programmes that fail to generate significant improvements. By avoiding these pitfalls, the organisation may minimise the risk of falling short of CRM goals. These are under committing to CRM initiative, creating a one-point solution, taking the low cost approach, non response or poor response, avoiding the human side of the equation, standard approach, being too diplomatic etc.

CRM is an excellent concept; it is possible to implement but it is challenging. It requires distinct vision, strong will and lot of efforts in nullifying the barriers, apart from attitudinal overhaul, which is difficult even with the best of intentions. Relationships are built over a period of time and have to be continuously nurtured., especially in a competitive environment with new players in the market. Customer retention just does not occur. It takes close follow up of customer expectations and requirements and a perfectionist attitude. Everyone

in a customer intimate company should always be prepared to go the extra mile for the customers. There should be a close involvement of marketing, project planning, basic engineering, front end design & engineering, construction & erection, site supervision, commissioning and other wings. Every employee in a customer intimate company should act as customer advocates. CRM is a concept which is not to be viewed in isolation, it should be used to formulate marketing mix strategies for different classes of customers. The marketing and project cell of the organisation should transform its commercial image to that of a customer caring, quality provider and making things happen. Gone are the days when the role of a sales engineer was limited to closing deals—today, their job is to get closer to the customer. Therefore, apart from just selling, the marketing team has to have potential CRM skills. A CEO's mere slogan on a glossy board will not work.

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We know where most of the creativity, the innovation, the stuff that drives productivity lies – in the minds of those closest to the work.

– Jack Welch

Customer Relationship Management & The Banking Industry

Ashish Sadh & Soniya Chitale

Continuous changes in the economic scenario and intense global competition are causing businesses of today to undergo radical changes in the approach to business. A number of new technologies are being incorporated in the infrastructure to yield a more profitable status. And unlike before, today everything begins and ends with customer—his profile, his preferences, his likes/dislikes, his wants and desires, customer orientation has become mandatory. Moulding the business around what the customer wants has become a tool for survival. Without it, the organisation may as well begin its journey to decline. Customer relationship management, having become imperative, has been adopted by Indian banking industry and the article discusses the current scenario and future prospects.

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With the plethora of goods and services available in almost every sector of industries, the educated, well-bred customer has a variety to choose from. And every business wants the customers to choose its products. This results in the incessant luring of customers, done in all possible manner. The activity of attracting customers was present even in the yesteryears of business but not to the extent and intensity it has gained today. Today managing customers has turned into a well-formulated, well-studied science and art, known as "Customer Relationship Management" or CRM. CRM can be defined as: "Activities that an enterprise performs to identify, select, acquire, develop and retain increasingly loyal and profitable customers. CRM integrates Sales, Marketing and Service functions through business process automation, technology solutions and information resources to maximize each customer contact. CRM facilitates relationships among enterprises, their customers, business supplies and employees."

The concept of CRM has caught the eye of various scholars and researchers the world over, particularly those in marketing and sales. Marketing scholars are studying the nature and scope of CRM and developing conceptualizations regarding the value and process of co-operative and collaborative relationship between buyers and sellers. In marketing literature, customer relationship management and customer relationship marketing have been used interchangeably. According to Nevin (1995), "These terms have been used to reflect a variety of themes and perspectives, some offering narrow functional marketing aspects while some cover broad paradigms". McKenna professed a more strategic view by putting the customer first and shifting the role of marketing for 'manipulating the customer' (telling and selling) to 'genuine customer involvement' (communicating and sharing knowledge). Hence, CRM can also be defined as: "A comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for company and the end customer".

CRM is a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for company and the end customer.

CRM helps the organisations to understand issues such as:

- One-to-one relationship with customers
- Frequency Marketing
- Loyalty programs
- Cross-selling opportunities
- Up-selling opportunities
- Customer Account Management and Business Development
- Various forms of Partnerships with clients including Co-Branding Joint-Marketing etc.

Techniques such as collaborative filtering, Rules based expert systems, Artificial Intelligence, Relational Databases etc are applied to develop enterprise level solutions for managing information on customer interaction and communications.

Customer Relationship Management

The establishment of an effective CRM module in an organisation is possible only in the presence of an effective CRM strategy. According to Julie Hanke, there is a proper sequence of events, which links the strategy to the implementation for CRM.

This sequence can be depicted as in Fig. 1.

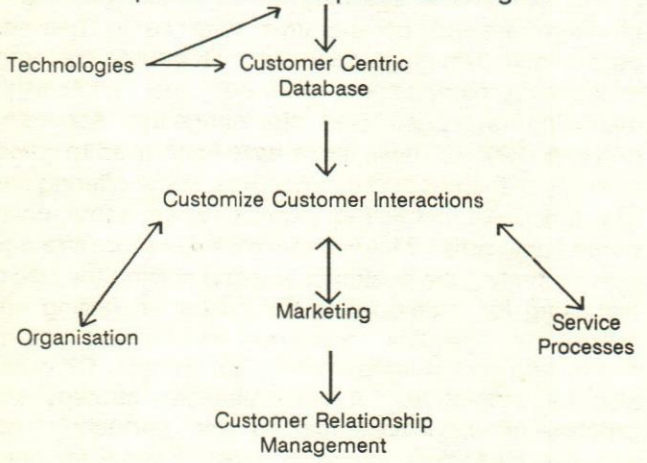


Fig. 1. CRM Strategy

The incompleteness and failure of CRM initiatives is attributed to the mishandling of the basic steps that ensure successful implementation.

CRM as a Strategic Initiative

Making a commitment to technology enabled CRM should be a strategic decision with an end goal of having a real impact on the way a company competes in the market. This impact can only be realized if the CRM is implemented in a strategic context, where technologies are used as a support to the strategic direction rather than the direction itself.

In the strategic perspective, CRM has been defined as: "A highly evolving element of business strategy that aims to understand, anticipate and manage the needs of the organisation's current and potential customers".

CRM should be about managing and fusing the concept across:

- All touch points such as call centers, web, kiosks, service technicians etc.
- All company divisions and departments
- All experiential elements like the pre-sales activity, product/service experience, post sales support etc.

The companies need to have the concept Total Customer Experience (TCE) and Customer Loyalty as focus for improvement.

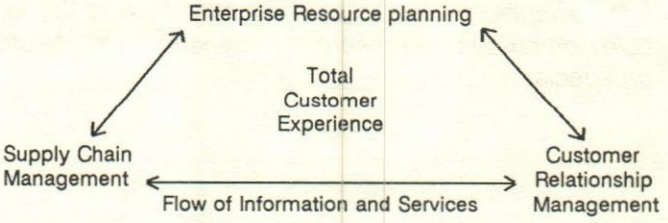


Fig. 2. Total Customer Experience

Total Customer Experience (Fig. 2) also reminds the organisations that

- Serving the customer better does not necessarily mean serving in the most expensive manner.
- Alignment of service elements to each customer's needs is more important.
- Identifying and eliminating areas of "over-serving" can more than compensate for areas where service offering needs to be enhanced to become more competitive.

- It has to be ensured that it is for a customer set that the organisation can afford to serve better.

CRM Lifecycle

Julius Henke describes the CRM Lifecycle that denotes the phases at which CRM can be implemented on the various processes of a system to obtain a beneficial output for the organisation (Fig. 3, Table 1).

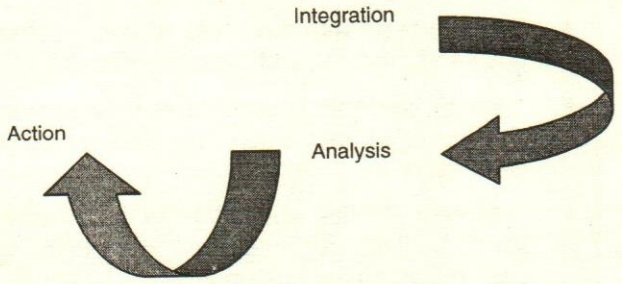


Fig. 3. CRM lifecycle

These phases can help the organisation to arrive at solid quantifiable conclusions that will further refine processes and improve lifetime value of the customers by enhancing relationships with them. For instance, CRM Lifecycle adapted on to the situations of Call center improvements; Customer profiling, E-business Effectiveness etc. helped organisations reach some important decisions as to how to go about the process in the most cost-effective and efficient manner.

Table 1: The CRM Lifecycle

Phase	Process	Output
Integration	Frontoffice systems and centralization of customer data	A systematic arrangement of centralized customer data
Analysis	Analysis of data for: Behaviours Buying patterns, causal relationships	Model and predict customer behavior and satisfaction, Lay foundation for strategic decision making
Action	Action, decision making, refining processes and org. structures	To cash, on the valuable insights of analysis.

These components therefore form important elements of a CRM solutions platform. What has been learnt of the customer's preferences and behaviours can be used to improve the customer's experiences with and perceptions about the business and customer relations can be immensely improved.

Banks & The CRM Experience

In the 70's and 80's, the terms "Banking Institution" and "Financial Services" were synonymous to doing business with a bank for a handful of activities like savings, deposits, loans and credits. The implications of the terms have however undergone a drastic change over the years. In the face of a storm of new financial institutions, endless products, varied services and severe competition, banking is no longer restricted to banks. Even in late 80's, a survey conducted by the American Banker showed that of 1000 households interviewed, over one third of them named a "non-bank" organisation as their financial institution. It was rather quite difficult for customers to differentiate between a bank and a non-bank financial institution. What however matters to all of them is the type and quality of service received from their financial institution. As another survey by the American Banker in 1987 pointed out, one in five people changed the financial institution. because they were disappointed with the quality of service. The statistics showed this reason to be 21 per cent of the incidents as compared to 12 per cent for changed addresses and 13% for higher interest rate. Another survey was conducted by the Cambridge Reports, Massachusetts for finding out the prime reason for choosing a financial institution. It showed that out of 1500 respondents the prime reasons were:

- 44% – Ease of doing business
- 28% – Quality of personal service
- 22% – Range of financial services available

Changing Nature of CRM

With increasing awareness of the applications of CRM, its appeal to the banking industry also increased tremendously. Major players in the banking world have come up with successful models of integration of CRM techniques to the practical world of banking and more so to the delicate issue of handling and retaining customers. CRM also showed that the databases that organisations maintain need to be dealt with in a manner different from the earlier modes so that information that is more useful may be skimmed out. According to an article in the McKinsey Quarterly 1997 the authors R. Adolf and others have come up with a comparative representation of Marketing Campaign before and after CRM in retail banks. American Banker also noticed that organisations gaining the most of the market share were those who were ranked highest in service quality by the customers. Bankers have come to realize that customer service does not cost. It pays in the end and the returns are tremendous. The philosophy of customer relationship is spreading fast and employees are constantly reminded through training, memos and appraisals, of its importance for the benefit of the organisation.

Customer service does not cost. It pays in the end and the returns are tremendous.

Citicorp & CRM

Nicknamed as "the Thirty foot python" among US based banks, Citicorp caters to about 25 million people around the globe. Beginning its foray into customer relationships in 1975, it started building customer relationship strategies in the early eighties. In 1982, it first tasted success from CRM applications and soon by 1987, CITICORP Bank contributed about 60 per cent of the total revenues of Citicorp Business. Interactions with its customer and those of the competitors revealed the measures of good performance were in line with what customers considered as good service.

- Customers wanted the services to be delivered in a problem-free, competent and timely manner.
- Citicorp invested millions of dollars to come near what their customers expected leading to a change in service standards, image and orientation of the organisation.
- It was the pioneer in ATM services

Today Citicorp or Citibank has a number of innovative features like:

- Citicard Banking centers—having multilingual terminals for their global clients
- Interactive Touchscreens and Citi-stations
- Drive-through banks—3 to 10 lanes, one manned by a teller and the others by ATMs that can be lowered or raised to the level of the customer's vehicle window.

First Union & CRM

North Carolina First Union Bank is the twentieth largest banking organisation in the states. It has 700 banking and 500 non-banking offices in 37 states and 2 foreign countries. What is striking about the bank is the attitude it has expressed toward the concept of customer relationship. It has been also studied as a classic example of finding and understanding what customers wanted it to be, and then becoming just that. It understood that customers wanted Speed, Convenience, Personal Service and Simplicity. It devised a program called: ACES—Automate, Centralize, Eliminate and Simplify which helped to speed up transactions by cutting down on paperwork and reducing procedural hurdles. With streamlined activities and a better networking, response time was reduced by 40 per cent.

First Union devised various ways of being in constant touch with the customer:

- New customers were surveyed to gain first impressions.
- Focus groups with members of their customer base and customers of their competitors.
- Visits by systems specialists to their customer companies to help explain and debug new procedures.
- Customer Service specialists to cater as personal bankers for individual customers and cash management customers.

The desire for service-focussed enhancements and service commitment is so strong that the bank even extends a guarantee to its customers stating that if not satisfied with the services in a period of six months, the customers could close their accounts with them. The Bank would refund all the monthly charges they paid right from day one. What the customers thought as Satisfaction would be left on them. Another important aspect of the whole event is that First Union did all this way bank in 1987. Now in 2001, 14 years down the line, banks are still trying to cope up with what was carried out then.

First Wachovia Corporation & CRM

First Wachovia is known in the Banking World as the founder of the concept of "Relationship Banking". Having introduced the concept in its operations in 1972, they soon realized that the organisation was not sure what its relationships with the customers actually were. They worked on it for 7-8 yrs and invested millions of dollars to get their models on CRM error-proof. Today, Wachovia bank boasts of being the top all-around bank in the States and is considered an epitome of a well run and customer focussed retail bank. With a motto of "computer to people connection", Wachovia centralized its databases in the early 80's, such that records of half a million customers could be accessed by more than 500 personal bankers. The personal bankers were trained to be central contact points for all the banking transactions right from filling forms for new customers to credit cards to planning. Wachovia bank is appreciated as a bank for being "conservative in fundamentals of banking but creative in new products and systems'. The systems are so well planned that many small banks hire the data processing software for their own customers.

Select target segment →	Define Value proposition →	Develop Offer →	Update systems →	Execute Campaign →	Analyze Results
On demographic Profile.	'One size fits all"	Incremental Change from Previous offer.	Seldom	No real accountability	Focus on overall Response. And sales
Vol. based on direct mail			Comparisons with previous campaigns		
Before CRM					
After CRM					
Attractive prospects	Offer varies by segments	Designed to incorporate Ideas	Processes tracked and measured in segments	Program Manager responsible;	Analyses based on Response, risk Profitability
Uncover patterns, Opportunities.			Aim to reduce marketing costs/unit/dollar.		

Fig. 4. Marketing Campaign in Retail Banks

American Express has been highly appreciated for being very proactive in trying to grow merchant acceptance beyond traditional channels and in its cross selling activities. In fact, Amex's Internet strategy is deemed to be one of the world's most sophisticated and developed ones.

Bank of America & Palm Pilot

Bank of America has recently launched banking through Palm Tops. Available presently to California customers having Palm VII – the latest personal digital assistant from Palm Computing. The customers can check account balances, check clearances etc without a PC or Telephone.

Chase Manhattan Bank launched 2 e-business websites to provide personalized access to its millions of customers using the Web- based banking site and the company's Intranet services. NatWest Bank has made a multimillion pounds investment in its Decision Advantage Relationship Marketing Solution for its Retail Banking division. The project called Maestro enables 50 marketing professionals within NatWest to segment customers, construct targeted campaigns and perform audits to understand the success of these campaigns. Maestro is said to have led to a 600 per cent improvement in the response rates.

European Banks & CRM

A recent study showed that in 1998, European Banks have spent about $945 million on CRM solutions. This was estimated to be a 41 per cent increase as compared to the investments made for the same purpose in 1997. Covering about 25 per cent of the total investments for CRM globally, Europe also ranked as the biggest spender for CRM solutions. Between 1998 and 2003, the CRM related market is predicted to grow by 20 per cent annually to an estimated figure of $ 2.4 billion. The Market potential in Germany for users of Internet Technologies is tremendous. In the year 1999, there were 7.5 million Internet users, roughly 9 per cent of the total population. In the year 2002, this number is estimated to grow to 27 million. Germany is a fertile ground for the invasion of E-Trade, which is estimated to swell from 200,000 in 1999 end to 3 million at the end of 2002. With this picture in view, Banks in Germany are spreading their wings to the banking and e-trading zones. HypoVereinsbank (HVB), Germany's second largest bank, will implement Clarify's Front Office solution to support customers using its electronic services. This system will support enterprise customer who contacts the bank through On-line media. Similar solutions are used by Bayerische Landesbank, Dresdner and at Commerzbank. Both banks use solutions designed by another e-crm solutions provider named Sieble.

Switzerland's Winterthur Insurance has announced installation of IBM's Business intelligence Solutions platform. Campaign Management will be an essential feature of the package and it will guide the organisation on when to involve sales and distribution channels into a campaign process. Relationship Building will also be strengthened, as it will allow the bank's team to predict each customer's current and future profitability and potential lifetime value. The top priorities for Winterthur in this aspect are to be able to design new marketing programs and to reward customer loyalty. Union Bank of Switzerland (UBS) wanted to better understand its customer base and refine its sales and marketing efforts for increased profitability. The solution provider named Genalytics helped in furthering the development of a customer-centric approach to sales and marketing. The model helped in Customer profiling, Predictability models, Consumer Behavior. When the result of the data-driven model was compared to the traditional model used, it was found that the new model out-performed the old by 70 per cent in response rates for marketing functions and 225 per cent in new money deposits and a 285 per cent response hike in

sales. Holland's Deutsche Bank's Insurance Subsidiary and IBM collaborated to develop a business intelligence solution that specialized in Damage Management Reporting. This gives information on products customers have purchased, the premiums paid and damages claimed. Thus, it enables better control over situations and better business strategies. People's Bank, UK has tied up a three-year contract with Equifax – a solutions provider. Equifax will develop a global acquisition Database to help People's Bank analyze customer information and to develop, sell, and market its financial products to 200 million US consumers and 400 million UK consumers.

Net banks

Some banks in the UK are coming up with the concept of NetBanks, which are designed as 'Stand Alone Internet Banking Subsidiaries'. For instance, BankOne has set up Wingspan Bank, Abbey National with its Aquarius Net Bank. Lloyds TSB aims to have one million of its customers using Internet Banking by the year 2002. It too is shortly launching its Internet Bank. According to Gordon Pell, group director of Lloyds TSB, UK Retail Banking, "Although the division will be In-house, the bank plans to develop a separate band line for its Internet services". SEB Private Bank (SPB), is one of the most prestigious private banks in Luxembourg. It accepts only those clients who can create portfolios more than SEK 2 million. SEB heightens customer service by offering its customers on-line financial services that would allow real time transactions and market information, all protected by robust security systems. Called Net. Finance the application is an Internet transactional solution that covers 24 hour banking facilities including asset management, retail banking and secured e-mail. The application involves customer profiling as well as design tools to enable SEB's marketing department to insert daily financial or business information aimed at specific clients. The bank can send information on specific instruments or market information to those clients whose profiles indicate that there may be some interest. The bank has developed different transactional sites and different customers can have different pages developed for them depending on their needs. This 24* 7 module enables customers to look at the last movements of their balances, move money from cash to savings a/c., order specific documents. Asset management enables customers to view their accounts by country, industry or currency. They can buy and sell stocks and bonds, obtain valuation reports and portfolio performance reports on mail.

CRM – Gaining Corporate Importance

CRM has achieved its own place of importance in the corporate line of vision. It is not merely a tool to make things simpler, it is one of those modes, which determine the success of failures in service industries. Attempt of form customer centric atmosphere in the organisation is possible only when the CRM models are strong. Strength of a CRM solution comes from the degree of interconnectivity between company and the various modes of customer contact points and the ability to provide a consistent customer service over all communication channels.

The evidence in support of CRM as a profitable strategy is impressive. A report titled "Perfecting Customer retention and recovery – Overview of Economics and Proven strategies", 1995 prepared by the Council on Financial Competition showed that:

- Increasing Customer retention by 5 per cent adds more than three years to the average customer lifetime.
- Defection rates subside across customer tenure with a financial institution.
- Account usage per relationship increases over time.

An analysis by the Cumberland Bank, USA of the top 5 per cent of its customers showed that:

- Top customers generate 40 per cent of the profits
- A 5 per cent retention of top customers leads to a 24 per cent increase in profitability
- Minimum balance of top 20 per cent customers is $20,000.

A retail bank customer is usually unprofitable for the first three years. It takes about six years to break even and become a net profit contributor to the bank.

Customers turn profitable for reasons such as:

- Over time, customers tend to increase their holdings with the bank for other products from the product portfolio.
- Long term customers become prime referrals
- The longer the relationship continues, the better the bank can understand the customer, his/her needs and preferences. This gives them bigger opportunities for tailoring products, cross- selling etc.
- Customers with a long-term relationship are more comfortable with the procedures,

methods and the service of the bank, thus reducing operating costs occurring from customer error.

A recent study on CRM Initiatives, conducted in UK, indicated that about 46 per cent of CRM projects were initiated by General Management in banks compared to 75 per cent initiated by operational departments in insurance companies. In addition, it was found that for banks the data-warehouses would become major channels/tools to interact with the customers. In the year 2000, only 9 per cent banks rated the tool as important, but it is projected that 72 per cent of the interviewed banks will be using the same in the next two years.

As with every relationship and its long term and fruitful life, a professional relationship also needs to be nurtured with factors of mutual trust, confidence interaction and commitment. If extended to retail banking, the life of a successful RM would greatly depend on the bank's ability to understand the customers, their individual preferences, expectations, needs and to be aware of the changes in them from time to time.

Professional relationship needs to be nurtured with factors of mutual trust, confidence, interaction and commitment.

The main objective for the banks in starting a CRM project was to gain customer fidelity. The main obstacle to starting a CRM project was the size of the CRM budget. In this regard, Abram Hawkes conducted a survey in 1997 among the retail banking institutions in UK regarding their perceptions for the concept of Relationship Management (Fig. 5). The study stressed on factors like:

- Customers being assigned a lifetime value.
- Two way communication with customers.
- Interaction with customers personalizing their particular situations.

In a sample of 40 retail financial services, the observation was as in Fig. 5.

In yet another survey by Abram, Hawkes, it was found that among the retail financial services of UK, segmentation procedures were being used to as a basis for building of long-term relationships with clients. While most used the traditional modes of segmenting, few banks used modern methods of Superprofiling, Pinpoint

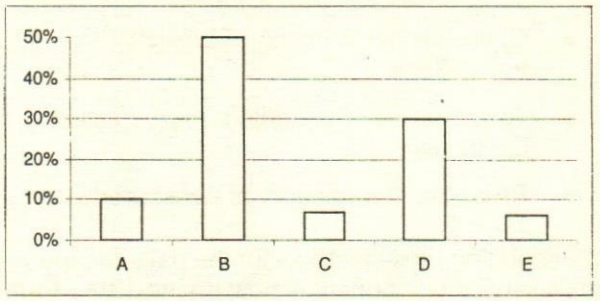


Fig. 5. What is understood by RM

Source: Abram, Hawkes (1995).

A: A New Model that will replace the outdated concept of marketing

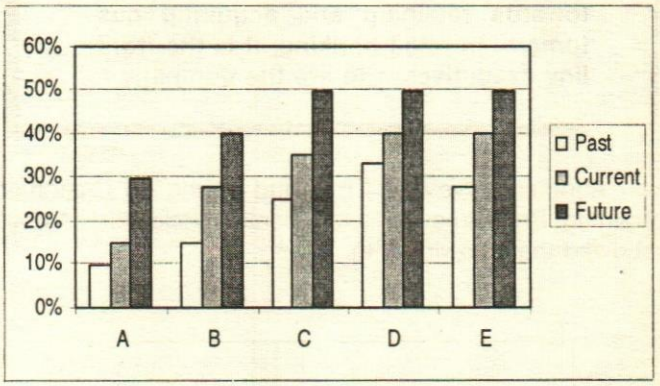
B: Developing a continuous relationship with the customers across a range of financial services.

C: Sharing asymmetrical responsibilities between banker and customer

D: An integrated effort to identify, maintain and build-up a network of individual customers and continually strengthen the network to the mutual benefits of both sides, by interactive and individualized value-added contacts.

E: A combination of general advertising, sales promotion, public relations and direct marketing to create more efficient and effective ways to reach the customer.A:

methods etc. A study by Ernst and Young in 1992, showed that retail banks are getting more aware of the benefits of customer relationships and the fact that service quality was the foremost in attracting and retaining customers. In this study, five attributes that are important for a good service quality were identified (Fig. 6):



A: Adaptability: ability to tailor products

B: Responsiveness: to the needs of the customers

C: Convenience: In making Transactions or in Customer Service

D: Performance: By adding more features, and functions

E: Reliability: For integrity of Retail products

Fig. 6. Overall Quality Strategy for Basic Products

Source: Ernst and Young (1992)

These were:

- Adaptability: In ability to tailor products

- Responsiveness: to the needs of the customers
- Convenience: In making Transactions or in Customer Service
- Performance: By adding more features, and functions.
- Reliability: For integrity of Retail products

Integrating these factors into the daily routine of the bank's service component is now the next step towards achieving high levels of service quality. The focus is now on "doing the right thing – the first time and every time".

CRM & Employees

Employees make all the contribution towards retaining and acquiring customers. Organisations also devote a part of their strategies towards motivating employees to imbibe the importance of CRM for all. In retail banking, as in several other services, it is the front-line executives who are the company to the customers. Hence, to motivate, train and prepare them to serve customers on daily basis without losing their smiles is mandatory. Thus, while some banks recruit and reward employees based on their knowledge and communication etiquette, others follow an intensive training program to train all their employees in all sorts of communication skills.

Employees make all the contribution towards retaining and acquiring customers. In retail banking, it is the front-line executives who are the company.

Another survey by Ernst and Young on Customer Training Programs in Retail Banks worldwide (1992), showed the following (Fig. 7).

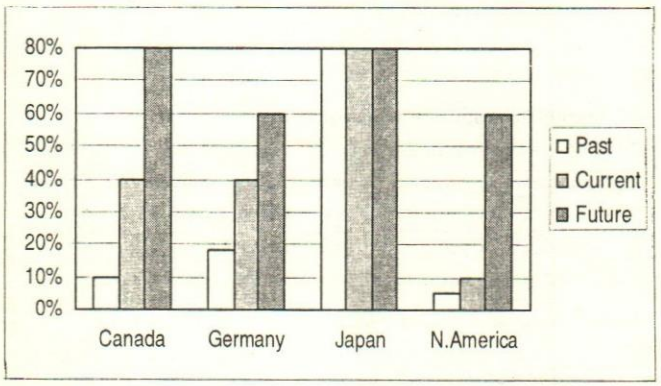


Fig. 7. Provision of Customer Relationship Training in Retail Banks

Source: Ernst and Young (1995)

Ways to Customer Relationships Management

Banks and the Web: Maintaining On-line Relationship

With the proliferation of the Internet in every slice of business, banking industry has also not been untouched. In fact, many banks – small and large – are making good use of the web to make their presence felt in the highly competitive climate. Majority of the efforts is also devoted towards giving the customers a plethora of services and maintaining good relationship with them. According to research by the RBR for Internet services being used by retail banks the world over; it was found that there were over 200 banks with their bank sites on the net. A distribution pie gave the following picture (Fig. 8):

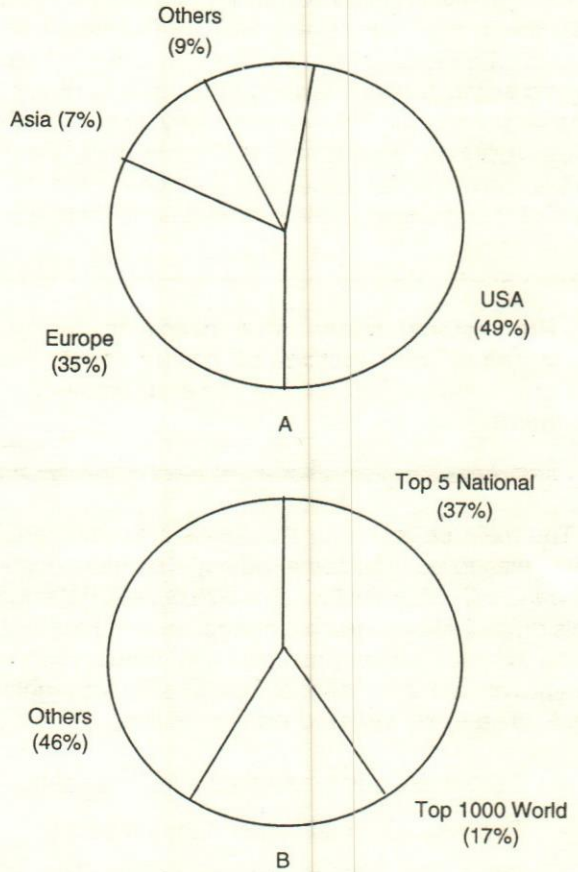


Fig. 8. Banks with Websites

A. Split by geographical region
B. Split by asset strength

Thus, it is seen that a number of banks are invading the net to provide a number of "on-line services" to their customers. However, the aspect closest to the bank strategy is how to convert the "on-line services" to better customer relationships. Banks are also monitoring their sites closely as it has been seen that most banks are able to keep it rather basic and unsophisticated

whereas what customers expect is much more! In fact, the web users are turning out to be the more valuable customers of the lot and the banks can in no way afford to disappoint any of them. Surveys conducted in Europe and USA have also shown that these web-users are people who are young and affluent and can be potent targets for long periods of transaction with a bank.

Most banks are using the Net to put in various services at various levels such as:

- Putting up a Sign: To make people aware/ remind of their services. Also, called "maintaining zero-presence" by giving information of the company headquarters, telephone numbers, company logo etc.
- Shop Window: Information about themselves, their products, Annual reports etc. It is devoid of any interactivity with the customers.
- Financial Advice: Incorporating a level of interactivity, Banks offer Advice services and answer FAQ's on Wealth Allocation and Risk Tolerance to Customers.
- Selling Financial Services: Using On-line modes, customers can register, open accounts, and fill application forms for the financial products. Taken a step further, customers can use the site for balance enquiry, accounts transfer, bill payments etc. This becomes one of the most advanced uses as it involves a complex linkage of the backoffice records, database with the net, and therefore poses challenges for maintaining data security and confidentiality. It is also the "core of the customer relationship" that a bank strives to maintain with its customers and thus needs to be dealt with extreme care and scrutiny.
- Non-Banking activities: Some bank sites give information on the "Off-duty" activities of the bank such as charity, welfare and social service endeavors. This is a way to tell the customers that the organisation is also aware of community welfare and upliftment.
- General information: Some banks are devoting a part of their sites to suit the interests of various sections of the society e.g. housewives, students, doctors etc. For instance, local banks in America carry local community news and information; Lloyd's bank offers useful information to the student communities.
- Internet service: Banks provide direct passages to the Internet as one of the applications of their sites, so that the customer instead of using a typical service provider can route to the net from the site itself.
- Virtual Shopping Malls: Aimed at converting bank sites to "commerce hubs"—a number of banks are now providing this service to their customers.

Thus, with these and many more services, banks can help to drive up the demand for on-line banking. Atleast those members of the society who make a regular use of the PC either at work, home or otherwise can be successfully influenced and converted. The earliest among such efforts was Minitel—a retail banking delivery service developed in France in the early 1980s. Sponsored by the French Government, it was used by various banks all over France. Today, the highly successful service boasts of about sixteen and a half million users, which comes to 40 per cent of the adult population of the country.

Banks & Call Centers

The general sequence of connectivity between a Call center and customer for a typical set-up of banking services is as in Fig. 9.

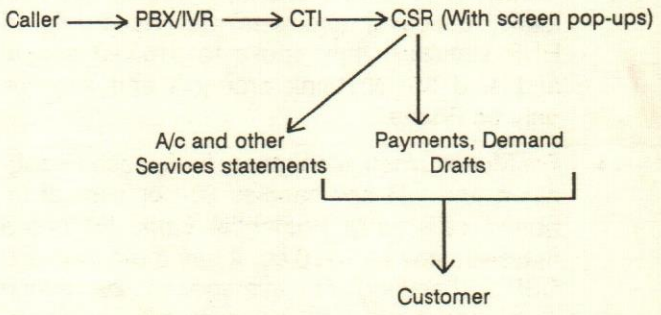


Fig. 9. Connectivity between Call Centre & Customer

A large number of banks are providing this service of Call centers where customers are responded to either by live service agents or by an automatic voice response system.

A few examples of current users and the intensity of usage is as given:

- ABN-AMRO's Call centers-Smart systems: According to C.H.A Collee, Sr. Executive V.P., Commercial Development: "The bank was concentrating on New accounts and never realized that at the same time, we were losing customers from a back door". The bank identified its major systems flaw was at the customer

relationship level. The bank decided to adopt a sophisticated middleware that would connect all bank channels and also keep track and organize its customer enhancement efforts. The Call center so designed is supposed to be "the best" among all banks and the ABN-AMRO has set apart a sum of 160 million by the year 2003 for the development of its E-CRM systems. The Call center being developed is a high precision system that would be able to route calls to the right CSR, give reminders to representatives on services on high priority and pending jobs, be able to give general information itself.

- The Fleet Bank, Boston, MA receives about 100,000 inbound calls/month and makes 150,000 outbound calls/month.
- Dime Savings Bank, NY, services about 6,000,000 calls /yr. with its 200 seat CSR. It attended 50,000 hours of outbound calls.
- Bank of America, San Franscisco, has a capacity of 3,200 CSR at its two call centers. This is supported by Video conferencing, Loans by Phone etc.
- Hibernia National Bank, one of the top 5 banks in the US has a capacity of 30 CSR's and & 78 telephone lines to make 18,000 calls/week for loans, checking accounts etc. According to HNB statistics, they spoke to 316,593 people and sold 35,000 bank products and services only on Phone.
- For Merrill Lynch, Manhattan, its Speech Recognition and IVR s/w handles 80 per cent of inbound calls while Prudential Bank, NJ has a massive network of 20 cc. It has more than 400 CSR's, handling an average of 20 million calls/year of which 80 per cent calls for Investments and 60 per cent calls for Securities are handled by the IVR.
- Higher up the ladder of calls handled, is the Central Carolina Bank, Durham, NC with 64 CSR's handling 25,000 calls/day. Of these 90 per cent are through the IVR.

CRM & the Indian Banking Industry

The Indian Banking Industry has evolved immensely through history – starting from the coinage system of early 19th century to the host of nationalized and private organisations who hold the key to banking. According to a 1996 count, there are 293 commercial banks in India whose total Scheduled Deposits stand at Rs 577,959 crores, As compared to the other developing countries, growth of the banking sector in India has shown a rise of 20-30 per cent. The activities of banks have also spread over to several sectors such as consumer retail banking, corporate banking, rural development banking, etc. In addition, the Indian scenario does not consist solely of Indian Banks. A number of Foreign Banks i.e. banks of an overseas origin and with no tie-ups with any of the Indian banks such as Citibank, ABN Amro, and Standard Chartered have found Indian markets as highly attractive and profitable avenues for their businesses.

Among all these changes, Retail Banking found itself on a very competitive front. When customers approach banks, they do so with a mixture of apprehension and trust. Earlier, the common man had few options as to where to deposit his/her money. However, today there is a range of organisations holding forth lucrative returns for investment. Thus, the customers have now become choosy. They scan the organisation for its products, services, financial stability, parent organisations, future prospects etc. before putting their money.

Earlier, the common man had few options; today there is a range of organisations holding forth lucrative returns for investment.

Amongst the various players in the banking sector, a summarized performance sheet of the top runners is in Tables 1, 2 and 3. To attract customers, retain them and further expand the business through them is a gargantuan challenge for the banks. How much the bank has progressed in a given period can be taken as a strong indicator of how satisfied its customers are.

Since banking is in its core a service industry, most transactions are dependent on the type of relationships that the banks share with those who trust in them. In other words, relationship marketing can be termed as the pillars of bank stability. The data gathered and its analysis helps in:

- Having a clear picture of the customer profile

The data gathered and its analysis helps in: having a clear picture of the customer profile; understanding Who requires What, When and How Much? and meeting expectations of the customer as closely as possible.

Table 1: Comparative Position of Public Sector Banks for FY 2000 (Rs mn)

	SBI	BoB	Corp	OBC	BoI	SBBJ	SBT	Dena
Income	257702	58616	18751	26793	55224	13359	13541	17990
Net Profit	20515	5027	2324	2786	1728	1204	664	628
Net Worth	121472	32345	11447	14284	25110	5231	4336	8264
Deposits	196821	513081	142800	22095		247743	890740	101826
Advances	98019	24392	977770	93255	252310	44011	51312	71178
Investments	918786	185565	59620	115595	166657	48454	48715	69152
Spread (%)	2.05	2075	2.23	3.03	2.26	21.18	1.93	2.24
NPAs/Net Worth (%)	51.7	52.1	13	23.5	87.8	86.6	104.1	119
RONW (%)	16.9	15.5	20.3	19.5	6.9	23.0	15.3	7.6
CAR (%)	11.5	12.1	12.8	12.7	10.5	12.3	11.1	11.6

Source: Indiainfoline.com

Table 2: Comparative position of new private sector banks for FY2000 (Rsmn)

	HDBA	ICBK	UTIK	IDBA	GTB	INBK	BoP	CENK
Income	8052	10468	5743	4789	8791	7822	3090	5315
Net Profit	1200	1053	509	609	1086	560	331	343
Net Worth	7514	11495	2395	2595	5281	5332	1669	2102
Deposits	84277	98660	57200	34481	61988	65459	26077	38670
Advances	33622	36573	35066	16007	32110	36770	13014	18398
Investments	57482	44166	20651	21239	29290	27317	12972	21995
Spread (%)	3.6	1.4	1.4	1.8	2.1	1.6	2.6	2.6
NPAs/Net worth (%)	4.9	4.8	68.9	12	5.3	41.2	27.6	33.9
RONW (%)	16.0	9.2	21.3	23.5	20.6	10.5	19.8	16.3
CAR (%)	12.2	19.6	11.3	11.8	13.6	13.2	9.8	9.3

Source: Indiainfoline.com

Table 3: Comparative Position of Foreign Banks in India for FY 2000 (Rs mn)

	HSBC	CITI	STAN	ABN	ABN	BNP	DEUB	BOA	ANZG
Income	12476	18778	11965	7302	2622	6609	8715	14630	4450
Net Profit	1215	2513	1853	1188	215	511	1528	1801	277
Net Worth	8373	9915	7170	5760	1973	5432	6867	11323	2579
Deposits	87547	102032	50060	34229	10601	21673	25117	84777	14183
Advances	43023	66201	43188	38964	6751	17621	36574	42334	8919
Investments	49185	42300	31400	27171	10577	20992	13013	48862	12266
Spread (%)	3.1	4.7	4.8	3.9	2.7	4.8	3.6	3.8	3.6
NPAs/Net worth (%)	5.3	7	12.2	2	0.3	17.2	10	0.1	14.9
RONW (%)	14.51	25.35	25.84	20.63	10.90	9.41	22.25	15.91	10.74
CAR (%)	10.3	10.5	9.5	10.1	9.5	10.4	12.9	10.9	10.1

- Understanding Who requires What, When and How Much?
- Meeting expectations of the customer as closely as possible.

With technology, databases have been integrated and logically used to produce personalized packages for its clients. Now, different strategies and styles have begun to emerge for different banking institutions.

Among the several techniques used to study and analyzed data, the widely used methods include:

- Segmentation Techniques
- Repeat customers
- Custom Clustering
- Skilled Decision Making
- OLAP – Online Analytical processing Methods
- E-Retail
- Database Conquest marketing
- Telebanking

The above mentioned techniques are part of the well-designed CRM solutions. These techniques help the bankers in decision-making in various areas such as:

- Direct marketing
- Customer acquisition
- Customer retention
- Cross Selling
- Trend Analysis
- Fraud Detection
- Forecasting Financial Markets.

The Picture today

The year 1999-2000 has been a favorable year for the banking industry. Also, this year witnessed a spurt in the levels of integration of technology in routine activities of banks. While new banks are fast adding innovative technological features to their various banking activities, the State run banks are yet to catch up on this aspect. According to a study conducted on the banking industry, the overall profit margins of the various categories of banks is as in Table 4. Several IT and netbased companies are planning to set up new bases in India and to partake of the vast market potential available here. A major player like Pricewaterhouse Coopers, who takes up CRM products from Siebel, Vantiff, Broadvision, has estimated the size of CRM market in India to reach Rs 100 billion by 2001. The awareness of CRM and its importance in business has also grown immensely. In a survey conducted by IDC India, about 70 per cent of large enterprises in India were aware of CRM while this awareness was present in about 25 per cent in small and medium firms. In India Infosys – the company is working towards enhancing the use of Internet banking and developing a web-mindset. Infosys has provided services to ICICI, Global Trust Bank and UTI. Its next venture is the IDBI Bank where it would lend support in Bill Presentation Modules, B2B services and Trading. The 'Bankaway' platform of Infosys would help to provide one-click services to routine banking practices like Retail Banking, Bills, Corporate banking, WAP and SMS. IDBI Bank is adapting to WAP techniques for Mobile Banking and Brokering. According to Mr. Venkataraman, CEO, IDBI Bank, the aim is to go for any device banking, connecting to the ISP and enabling customers to access accounts anywhere. Indiabulls – An E-trading portal plans to takeover a smaller bank to develop and conduct virtual banking over the net.

Table 4: Overall, Net Profit Margin

Type of bank	Yr. 1999	Yr. 2000
Public Sector Banks	4.12%	5.62%
New Private Sector Banks	9.70%	10.53%
Old Private Sector Banks	4.26%	7.48%

NetBanking

Though a modest start has been made in India, net banking has still a long way to go. This development has been acknowledged by the Online Banking Report-2000, which features a listing for ICICI Bank. Some others like Citibank, HDFC Bank and Global Trust Bank have also endeavored to make "real time banking" a reality very soon. Most of the new private sector banks, who are coming in this fray of modern banking systems have free demonstrations on their respective websites which are self-explanatory and can guide a first time user on how to use the facility. The experiences with E-CRM show a positive picture of the things to come. ICICI Bank with its net banking service called 'Infinity' goes a step forward:

- By allowing the account holder to transfer funds into another person's account within the bank.
- In addition, one can intimate about the loss of an ATM Card over the net when using Infinity.
- Moreover, corporates can issue letters of credit and make enquiries regarding bills sent for collection via this service.
- A special feature on Infinity is the facility for "nicknaming all accounts" to avoid remembering lengthy account numbers.

In terms of safety, HDFC Bank allows one to have three login attempts after which a new password is given while ICICI Bank will disable the password after five login attempts. The gradual increase in net banking is logical as the need to minimize costs catches attention.

Swadhan – The ATM Network

Swadhan is the name given to the ATM network of public sector banks and some private banks. Over the past year, upto 44 banks in Mumbai, Vashi and Thane have become a part of Swadhan; a system of shared payments network, introduced by the Indian Bank Association (IBA). The 44 members between them have 85 operational branches whose clients could swap the existing ATM card of one member bank for the Swadhan card to access the teller machines of this retail chain. A self-evident testimony is the demand for ATMs from customers which was first triggered off over a decade ago in 1987 when the Hong Kong and Shanghai Bank first introduced ATMs in Mumbai. Since then, they have become a common sight.

Call Centers & Indian banks

Indian Call center Industry has a count of 60 centers generating revenues of Rs. 1500 crore and there would be about 80,000 CSR's by March 2001. Among the banking sector, The HDFC Bank owns a 19 Seat CC at Mumbai. CTI and IVR support is from Servion and iFlex solution providers with software called Finware and Microware. This software gives the bankers a seamless integration of information and technology for services like A/c balances, A/c statements, stop payments, issue of cheque books, DD purchases, money transfers between accounts, utility bill payments, interest rate queries, credit card payments, activation and deactivation of credit cards etc. Its second unit at Gurgaon, also the registered office of HDFC Bank, has a 12 seat CC which handles 4,500 calls/day of which 80 per cent are handled by IVR-CTI automation and the rest by CSR.

CRM & Data Integration – A Comparative picture

For all of the above facilities and for providing a perfect system of customer service, seamless integration between back-office modules and front-end tools is an absolute must. Referring to the CRM Lifecycle, Integration has been identified as: "A process of front-office systems and centralization of customer data leading to a systematic arrangement of the data so that it can be used for further analysis and modeling".

This paper attempts to study the level of Integration that currently exists between customer data and front-end tools as well in the analytical capability of this integrated entity in the retail banking sector of India. A comparison was obtained from the current status of the same in different sectors of Indian retail banking industry i.e. across nationalized or public sector banks, private sector banks and co-operative banks.

The level of Integration is extrapolated from the Percentage Responses obtained from the different banks regarding use of databases in knowing their customers better and in decision making for issues related with:

- Promotional activities and marketing of the bank.
- Customer services
- Products
- Competitors

Relationship manager in Indian Bank

Awareness of the importance of CRM in the sustenance of banks has led to the formation of some new designations in the organisational structure called "Relationship Managers" or "Personal Bankers". As the name suggests, Relationship Manager is responsible for maintaining a compatible relationship between the customer and the bank. He is appointed to serve the cream clients or the clients with "High Networth' or "High Profile" and to see that they are kept satisfied and happy in all their transactions with the bank. Most of the private sector banks, especially the new private sector banks, are giving increasing importance to this designation. The job entails the manager to be in constant contact with the clients and searching for opportunities to up-sell and cross-sell the bank's products. He is not burdened with the usual banking transactions that take place between a customer and the bank. However, it is his responsibility to see that the number of high worth accounts increases over time. The Relationship Manager, thus, becomes an essential source of information about the customers, their preferences and needs and his information plays an important role in the strategy formulation at the corporate level. Nationalized banks, co-operative banks, also the old private banks do show an awareness of the existence and importance of the "relationship manager" but they have yet to implement it as a regular part of their organisational hierarchy. For them, it is still the branch manager who takes up the dual, responsibility of managing relations as well as the bank's annual targets.

Approach & attitude toward CRM amongst top management

Several issues related to CRM such as customer selectivity, customer retention, customer loyalty, "personalized" customer service, home banking, hi-tech front end tools, behavioral analysis, predictive databases, customer capturing and proactivity figure high in the concerns of the top management these days. The highest adaptation of CRM as a critical part of

corporate decision making is seen in new private sector banks such as IDBI Bank, ICICI Bank, HDFC Bank, UTI, IndusInd, etc. As most of these banks are involved in "class banking", they have to target the cream clients who can provide them with heavy and long term deposits. With the close competition amongst these new banks, they cannot afford to lose or annoy these customers as they not only bring in their own deposits but also serve, in a way, as the organisation's ambassadors to other people of their class.

Next come the section of IT-nationalized banks such as State bank of India, Bank of Baroda, Punjab National Bank etc. These banks have started incorporating due importance to CRM and are in the process of acquiring necessary tools and expertise to make CRM practically possible. The old private banks and a majority of the nationalized and co-operative banks are yet to come anywhere near the tools and techniques required for modern CRM implementation. Most of them do realize the importance and positive returns of CRM, yet what they follow is largely the traditional approach, in which there is no specific customer differentiation, customer profiling or personalized tailor made approach to extending banking services.

The data collected was analyzed for a comparative picture on the attitude towards the understanding and incorporation of CRM and database in decision making amongst the top management. Several factors were also taken into consideration to compare the extent to which databases are being used by banks to actively pursue issues of product performance, customer relationships and competitors. Several of these applications are used intensely by foreign banks in India and abroad so that they can create an edge over the competitors and be banks with proactive service.

Use of Databases in Indian banks

Computerized coding of customers

This aspect is observed to be used highly in private banks that have a systematic data building procedure and those who have a well designed connectivity amongst branches. With this coding system aided further by a network, it is possible for employees of any branch to view details of any customer across the country. This enables customers to make use of the concept of "anywhere banking" which is an important feature of private banks. Among the nationalized banks surveyed, only one is using the feature. No co-operative bank has the required amenities to follow the same. All these banks however follow a manual coding of customers, the information of which is given only to the corporate offices of the bank. No other branch can access the information, resulting in rigidity for customers as well as employees. Even certain private banks, who do not operate on as large a scale as the prime players, have a manual coding or a computerized coding which due to lack of networking is utilized only in the specific branch level.

Several factors were taken into consideration to compare the extent to which databases are being used by banks to actively pursue issues of product performance, customer relationships and competitors.

Identity for preferred clients

This concept of customer segmentation has been adopted by prime private banks and nationalized banks. This segmentation is done based on the value of relationship that customers have with a bank and whom the bank addresses as preferred customers or High Networth (HNW) clients. Segmentation is a method to express to the clients that they are special, of more worth to the bank and that the bank "treats them differently". The banks employ special modes of creating customer id's that highlight their "preferred crowd. The utilization of these databases thus helps all employees of the bank identify such clients regardless of the branch. It also helps to track movement of these customers with respect to newer products; their relationships with other banks, finding avenues to enhance business with them etc. In addition, segmentation is projected as a benefit to the customers, which would help them decrease the time spent on banking activities through special windows and officials to cater to their needs alone. The system brings with it visible signs of distinction such as special checkbooks, attractive discounts, quicker services, personalized attention etc. that adds to the ego status of the client and makes him feel special. Of the nationalized banks surveyed, some of them show that they have started using this application form the recent past. However a majority of nationalized and co-op. banks do not believe in this way of differentiation.

Concept of customer segmentation has been adopted by prime private banks and nationalized banks.

Reasons behind this lacuna are:

- They do not deal in class banking
- Their clientele is to a large extent the common man with limited means of income and planned expenditure

- The kind of services that differentiation brings about in private banking is not sought after by the customers of these banks
- For these banks, there are a number of rural and semi-rural branches where even a warm welcome and offering of a seat is enough to make the client feel cared and obtain his loyalty to the bank. In such situations, facilities offered by private banks to distinguished clients come nowhere in the picture, as it is just not required.
- They do not have the required network that can enable the bank employees to identify such clients on basis of their codes/ids. Such identifications are then done, if necessary only on a reference basis e.g.: reference of a branch manager in case of emergencies etc.

Tailor-made packages

The results of the survey show that this application is yet to be adopted by banks. Only some private banks operate this application. Again, the users are those banks that have a strong IT support and have a well-developed database system. None of the surveyed nationalized or co-op. bank has this application.

Mapping purchase patterns

The use of this application of databases is again on a lower side for banks of all the categories. In totality, the use reaches an average score of 30 per cent only. None of the co-op. banks surveyed uses this concept. The next application of this tool is to be able to predict what services a customer might require in the near future and to what extent the bank can help meet these requirements. A low score for both the above features is because of the following aspects:

- Designing a package of fruitful investment modes for an employee and understanding his purchase patterns requires the bank to really understand its clients.
- For this, they need to have data that can give useful information about the client, background, assets, beliefs and attitudes, likes and dislikes, current economic status and also future plans.

Receiving/Sending mails, alerts, reminders

Banks of all three categories have a high usage of this application of database systems. The application gives messages not only to employees of the bank but also to extends the same to customers on their emails, mobiles etc. wherever possible. If customers do not have such an access point, the alerts help the bank to call the customers and remind them of deadlines, offers or pass any information that can be useful to the building and enhancing of relationships between the bank and customers. Even the co-op. banks, although having a restricted scope of use of databases, are actively using their systems for this application.

Proactive disposition of banks

In use of this application, private banks with a systematic database management system have a sharp edge over banks of other categories. The strong database of customers maintained by these banks help in factors such as understanding client requirements, predicting needs and linking these vital pieces of information towards building their own businesses. When such analyses are done, the employees can be proactive in their work and reach customers with the right product mix before the customers approach them for help. Not all-private banks are able to face the situation. In addition, nationalized banks are poor followers in the aspect. Co-operative banks also do not have any specific technical system that can aid them to be proactive. The concept of being proactive in nationalized and co-op banks is rather different. Accordingly, the branch manager is responsible for issues such as marketing of services, relationships with the clients, proactivity in extending services etc. Unlike certain private banks that have a relationship officer, they do not have any particular employee responsible for looking after such issues of relationship building. Also as they cater to clients of the grass root level, their client bases are extremely large and it is practically not possible to gauge the needs of customers beforehand. This is in contrast to private banks who do class banking, cater only to a certain group of customers and it is therefore relatively easy to adopt such applications of the database system in day-to-day working pattern.

NetBanking: Private banks are far ahead in the use of this application as compared to nationalized banks. While privates score a moderate presence at 25 per cent of total banks, nationalized ones are able to score just a 5 per cent presence. Co-operatives make no mark in this issue.

Mobilebanking: A condition similar to the above repeats in case of mobilebanking wherein private banks show a small contribution towards use of this application, whereas nationalized and co-op. show no use of the same.

Phonebanking: Private banks seem to have adopted this application to a fair level, nationalized

banks also to some extent. The extensive use of telephones is definitely the prime reason for adoption of this application by most banks.

ATM facilities: Majority of banks is into use of ATMs as a means to provide better services to customers. Among the banks surveyed in the categories of private and nationalized respectively, it is seen that approx. 67 per cent and 80 per cent of banks provide ATM facilities. As regards total number of banks, private and nationalized banks show fair use of the ATMs.

Bill payments through ATMs: This is one of the very novel uses of ATMs wherein customers can pay bills through ATMs and the amount would be debited from their accounts and credited to the respective organisation. The bill in question can be seen on the screen of the ATM too. This new technique has been started by only one of the private banks amongst the whole lot of banks surveyed, thereby accounting for 8.33 per cent of the total private banks surveyed and 5 per cent of the total sample number. None of the co-operative banks uses any of the above listed applications onwards. The prime reason being again that the use of these applications requires strong IT support and good connectivity with other branches and centralized database so that appropriate measures of security checks can be taken and safety levels maintained. Not just the co-op. banks, but even a number of nationalized banks and some private banks are yet to establish these facilities in their banks and design database systems to handles these applications effectively.

Thus, it was observed that although awareness of the importance of CRM and its related aspects is seen in all segments of Indian retail banking industry, its implementation for service of customers is in its infancy. While private sector banks are turning stronger each day with newer modes of IT support, nationalized and co-operative banks will have to wait a ling tome before they can compete with the techsavvy banks on this front. No wonder, most high-class customers are leaving old banks to seek the services of new banks. The point of consolation, however, for the nationalized and co-operative bank is that India is largely a rural country. Technology is yet to make its presence felt in most sectors in the life of the rural populace. In addition, the penetration of the older banks in the country is much deeper than the new banks. However, once these areas are conquered, there is no stopping the tech-banks from becoming prime bankers of the country.

Points to watch in CRM Implementation

As banks try to bring in more and more facilities for their valuable customers, the process of linking back-office data with front-office applications, integrating it with the internet and floating interactive modules on the net becomes more and more complex. According to R. Adolf and others, banks need to concentrate on a few critical issues before they invest in CRM and its applications:

Building an attractive Value Proposition: Most banks have a notion that excellent CRM capabilities make a successful strategy instead, for the CRM solution to be effective, the product attributes need to be attractive to consumers. If the product is in itself unappealing, any amount of CRM push will not yield desirable results.

Organizing around the product and not around customer segments: Customer segments are the important elements in a CRM. Yet rearranging the entire organisation, its marketing strategies and management capabilities around them often turn out to be the prime reason for slow and slight returns and CRM abortion or implementation failures. It was observed that successful CRM implementers had focussed more on their product attributes and segments. They treated each of their products as individual businesses with their own set of competitors. The CRM solutions were then built and applied considering one product group as one unit.

Keeping a stable and narrow focus: Most successful banks have tuned CRM solutions product wise. This offers a dual benefit:

- Simplifies system design and maintenance
- Simplifies customer ownership issues.

This level of simplification allows easy integration of system sub-components and the core or central database.

Goal linked key performance measures are required: Many banks have lost tremendous financial resources because they were lured by modern analytical techniques and expensive packages that promised to analyze past failures and ensure easy and profitable banking in future. However, these packages offer a very small incremental value and are complex to understand. R. Adolf etal (1997) suggest that banks should:

- Avoid spending too much time on analyzing past failures.
- Decide what they expect to find and then analyze data confirm/deny the hypotheses.
- Integrate all data to establish a closed loop that tracks all leads and prospects.

- Evaluate regularly the effectiveness of various channels, including salespersons.
- Always link measures to organisational goals and objectives to avoid getting lost in the data.

It is a "Test, Learn, Test" process: Everything needs to be in place before CRM can begin is yet another popular thinking among bankers. Institutions waiting for perfection take a long time to implement their project and fail to achieve the purpose. The aim is to test and learn on a scale where the value of learning outweighs the cost of occasionally disappointing.

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Knowledge is the only instrument of production that is not subject to diminishing returns.

– J.M. Clark

Managing Customer Relationships Through Modern Marketing Strategies: A Critique

Hemant Kumar Sabat

Many marketing tools to manage customer relationships in business have sprung up in the market. These tools aid in understanding customers' mindshare, in quick product engineering, in increasing customer loyalty, in managing customer relationships profitably, among other things. This paper examines the applicability of these tools in the new business environment and presents a critique of the same.

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Numerous challenges exist in the new business environment. Many modern consulting tools born out of customer relationship management strategies have sprung up in the market to aid companies to sail through this inclement weather. By helping to understand customers' mindshare, quickly reengineer products, and build quality and value for the customer and business at increasing speeds, these tools help increase business loyalty of the customers, investors and employees.

In the past, economy and business cantered to the future like Roman legions on a wide-open freeway. They imagined they saw a linear road stretching out before them into the distant horizon, one that could be traveled in much the same as the road they had left behind. Fast forward to the present: the only certainty for the future is change. Like ancient rock formations pounded by turbulent waves in the high seas, companies are being relentlessly eroded by new forces of change (Sabat, 2001). The challenges in the business environment and the means to face them have been summarized in Table 1.

Table 1: Challenges Faced by Companies

Challenges	Approach to solve
Companies have to make a strategic choice between acquired growth and organic growth	• Horizontal marketing: How to add customers? • Vertical marketing: How to get more mindshare of a customer?
Shift in focus from products to customer	Customer relationship management
Competition is expanding from local to global	Migrating from domestic mindset to global mindset (Sabat, 1998)
Transactions are traded off for the customer	Relationship marketing

In such an inclement business milieu, companies have to understand how to create business operations.

Figure 1 gives the relation between growth and profit[1]. True prosperity is sustainable profitable growth. Only true prosperity will help earn business loyalty that has three components: customer loyalty, investor loyalty and employee loyalty. To earn business loyalty, a company should create value for its shareholders; to create value for its shareholders, it must create value for its customers. Thus, a focus on value creation and on intelligent, strategic decision-making will have the desired positive impact on a company's bottom line.

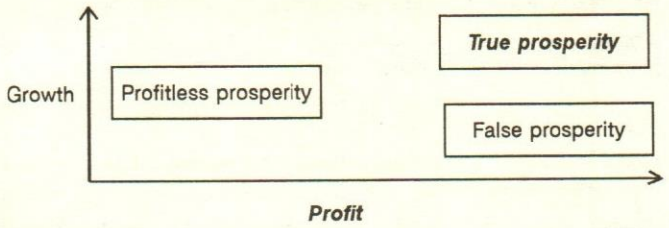

Fig. 1. Growth vs. profit

There are two points to ponder on –

- One – Profit is indispensable, but it is only a consequence of value creation. So, while profit has always occupied center stage in conventional thinking about business systems, profit should not be the primary motif. Value creation along with business loyalty makes up the real heart of any successful, long-lasting business institution. Creating value for customers builds loyalty, and loyalty, in turn, builds growth, profit, and more value.

Value creation makes up the real heart of any successful, long-lasting business institution. Creating value for customers builds loyalty, and loyalty, in turn, builds growth, profit, and more value.

Two, the process of creating true prosperity through business has three steps:

- Create a customer
- Increase value of the customer to the company
- Earn customer loyalty thereby contributing to employee and investor loyalty, and hence, to business loyalty
- Create profitable sustainable growth or true prosperity through business loyalty
- True prosperity creates sustainable profitable business value through increased business loyalty

Many marketing tools to effectively and efficiently manage customer relationships are in the market. This paper presents the following:

A summary review of three modern consulting tools to manage customer relationships

- Martha Rogers and Don Peppers'[2] One to One marketing concept (1997a & b; 1999a & b)
- Major CRM concept-solutions, and market research and product engineering (MR&PE) systems from Moskowitz Jacobs Inc. (MJI[3])
- Larry Light's brand loyalty management[4]

and a critique of usefulness of these tools to companies in the new business environment

Three Marketing Tools to Manage Customer Relationships: A Review

One to One or Relationship Marketing[5]

After Regis McKenna popularized the term "relationship marketing", Don Peppers and Martha Rogers (1997a), explained that what was needed was not just targeted marketing, but a complete overhaul of the way customers are treated. In addition to tailoring marketing messages to individuals, Peppers and Rogers recommend that a company adopt the manufacturing and service technique called "mass customization" in order to meet each customer's unique needs and interests. This means that the development of any successful marketing strategy depends on selection of an appropriate marketing strategy and specification of a target market.

1. Based on author's discussions with Larry Light (April, 2000), CEO of Arcature Systems, LLC. Arcature Systems is a marketing consulting firm based in Boston, MA, U.S.A.

2. Peppers and Rogers Group (PRG) is a preeminent customer relationship management consulting and training firm that helps clients shift from mass marketing to individualized (or relationship or one to one) marketing. PRG was founded by Don Peppers and Martha Rogers in 1992.

3. Moskowitz Jacobs, Inc. is a market research and consulting firm. It develops systems to aid in strategic brand development and product engineering. These systems are based on conjoint measurement (Table 1) as an organizing principle for consumer- driven sustained innovation.

4. Larry Light, *ibid.*

5. Based on author's discussions with Martha Rogers (April, 2000), Partner of Peppers and Rogers Group, CT, U.S.A.

Development of any successful marketing strategy depends on selection of an appropriate marketing strategy and specification of a target market.

Marketing strategy: Relationship marketing strategies (or individualized or One to One strategies) are those that embrace this idea of treating each customer in an individualized way based on customer needs and its value to the company (Peppers *et al,* 1999a).

Market segmentation: The size of the target market can range from mass market to market niche. Information technology (IT), however, makes it possible to take the market segmentation to another level. IT provides an economical means by which firms can deliver individualized products and services to each and every customer, based on feedback and interaction with these customers.

Two Approaches to Marketing

The two approaches to marketing that form the two ends of a continuum are: traditional transaction approach and One to One marketing. Along this continuum are a variety of combined strategies that incorporate elements from both approaches (Table 2). One to One marketing strategy –

- Rejects a short-term focus on transactions in favor of an emphasis on the development of mutually beneficial long-term relationships with customers. Since it is often more costly to attract customers than to retain them, not only is the long-term approach viewed as serving the customers' best interests, but it is viewed as serving a firm's self-interest as well.
- Involves an iterative cycle of customer identification, knowledge acquisition, customer differentiation, and customization of the entire marketing mix. This process is a learning relationship. A learning relationship between a customer and an enterprise gets smarter and smarter with each individual interaction, defining in ever more detail the customer's needs and tastes (Peppers & Rogers 1997b). This is the source of competitive advantage for a company.

Further, the learning works in both directions. The result is that it is in both parties' interests to continue the learning relationship, and it becomes difficult for another firm to duplicate the level of personalization inherent in the products and services offered.

Table 2: Transaction Marketing Versus Relationship Marketing

Transaction marketing	Factors	Relationship marketing
One-off exchanges	Focus	Ongoing exchanges
Level pricing	Pricing	Differential pricing
Brand management	Marketing management	Customer management
Insignificant use of technology	Role of technology	Interactive technology as enabler
Short-term focus	Time perspective	Long-term focus
Mass communications	Primary communication	Personal communications
Isolated market research	Customer feedback mechanism	Ongoing dialogue
Mass markets or market segments	Market size	Markets-of-one
Market share	Criterion for success	Mindshare of customer
Mass customization	Marketing	Customized products and services

Note: Adapted and modified from Gronroos, C. (1991). The marketing strategy continuum, Management Decision, January, pp. 7-13.

Role of interactive technologies in the development of One to One marketing

One to One marketing strategies are not new. Several factors have forced companies in certain industries to seek competitive advantage by focusing on the development of enduring relationships with customers. Some of these factors are increased fragmentation of markets, more intense competition, a generally high level of product quality, more demanding customers, and changing customer buying patterns, etc. To build relationships with customers, a company should accomplish the stupendous task of obtaining and managing information about customers. However, information technologies have provided a means to manage information, and to use the information to manage relationships. For example, the defining characteristic of an Internet is the *network* it creates. In that network, each connection creates the possibility of a relationship between buyers and sellers in an electronic marketspace (Rayport & Sviokla, 1995).

The One to One marketing process

There are four steps in the One to One marketing process[6]:

6. Martha Rogers and Don Peppers use Identify-Differentiate-Interact-Customize framework for one to one marketing. This framework is discussed in their book *The One to One Future,* Doubleday. (Based on author's discussions with Martha Rogers, Partner of Peppers & Rogers Group)

Identifying customers and learning about them through knowledge acquisition: The key to any successful relationship marketing program is the quality of information about the customer. The better the information that a firm has about a particular customer, the more value that firm will potentially be able to provide that customer. The quality of information is predicated on three components: accuracy, timeliness and relevance. Information-gathering techniques range from unobtrusive to intrusive. Intrusive means could employ tagging through cookies to generate educated guesses about consumer preferences, demographics, etc. (e.g. MathLogic, Inc.). Unobtrusive means of gathering information necessarily request the customer to engage in some type of self-disclosure (e.g., New York Times, customizable Web sites).

Customer differentiation by value to the company and needs of the customer: While customers have different needs, they also represent different levels of value to a firm (Peppers *et al,* 1999a). The actual value (i.e., current value to the enterprise) of a customer can be obtained from an information database. The strategic value (i.e., potential value to the enterprise) of a customer is obtained from the customer itself. The share of customer is the ratio of actual to strategic value. A successful relationship marketing firm leverages its customer knowledge along both of these dimensions to determine how to allocate its resources. This enables the firm to focus its efforts on providing the greatest amount of value to those customers that represent the greatest amount of value. A customer's lifetime value (LTV) represents the stream of expected future profits associated with that customer, discounted at some appropriate rate back to its current net present value. A customer's profitability status is a function of future transactions with the customer, acquisition costs, price premium, referrals, cost savings, revenue growth, among other things (Reichheld & Teal, 1996a). Using the above scale, customers can be tiered as: most value customers, most growable customers, third tier, fourth tier and big zeros. The first category is to be retained, the second is to be grown, the third and fourth are to be served through mass marketing, and the fifth are to be gotten rid of in a very nice way so as not to turn them into public relations terrorists. In sum, this step involves the following: tier customers by value, detect anomalies, and differentiate customers by needs.

Interacting with customers more cost efficiently and effectively: Relationships require interaction. It starts with a dialogue. Information is generated through the dialogue. For example, feedback (including complaints) is an important source of information. Processing of information can help build knowledge about the customer. This knowledge about the customer can be used to delight the customer by satisfying his needs ahead of competition. The result is: customer loyalty. This loyalty reduces the costs of retaining and managing the current profitable customer even while eliminating the unnecessary strife to acquire new ones, unless required, to maintain enterprise profitability. This process leads to higher margins since acquiring a new customer is more expensive than retaining an existing one.

Customization of the marketing mix: Customization of the marketing mix involves the following steps:

- Customizing products and services
  - Creating what the customers want through mass customization (or creative outsourcing)
  - Remembering what customers want
  - Anticipating what customers want
- Customizing communications (banner ads, e-mail, experiential marketing, viral marketing, etc.)
- Customizing channels
- Customizing pricing through personalized pricing and versioning

A Critique of Applicability of One to One Marketing Concept

The success of this concept is predicated on multiple factors. A critique of the applicability of One to One marketing concept in the new business environment is presented from two perspectives: benefits and limitations. The success of this concept is predicated on the following factors:

- Traditional transaction approach to marketing differs from relationship marketing in terms of focus on types of exchanges, emphasis on products versus customers, time perspective in consideration, primary communication methods, customer feedback mechanism, market sizes served, and criterion for success. Its value is also more visible when inter-

Traditional transaction approach to marketing differs from relationship marketing in terms of focus on types of exchanges, primary communication methods, customer feedback mechanism, market sizes served, and criterion for success.

active technologies are used in the development of relationships. However, the same technologies pose new challenges to companies and customers alike.

While the role of interactive technologies in the development of relationship marketing cannot be more emphasized than the concept strategy and tactical implementation, the success of this new concept is heavily predicated on the efficient and effective use of the interactive technologies. One, interactive technology is posing new challenges of cannibalization and eliminating inertia of large companies. Many firms, especially the largest, most well-established ones, find it difficult to adapt to these technologies. They are the ones who typically stand to lose the most by sabotaging traditional sales channels. As a result, many large companies have been slow to respond to the opportunities afforded by the Web. In doing so, they risk being "Amazon'ed" by start-up firms that have no qualms about bypassing traditional channel structures. This is an important consideration that might become a hindrance to switching to individualized marketing which has its fulcrum on interactive technologies.

Two, while interactive technology is creating new opportunities for differential pricing (through personalized pricing and versioning), it can also make such pricing strategies more difficult when it is used to provide customers with better information about their choices. Indeed customer ignorance or information secrecy has traditionally been a source of profit for companies. Today, however, online shopping agents can perform automatic price and feature comparisons for the customers leading to information democracy. It will be an arduous task to balance the use of the twin radical forces of information secrecy and information democracy as weapons on One of One marketing.

- In many marketing situations, transaction strategy is the most appropriate. In transaction approach, the firm focuses on single exchanges, and profits are expected to follow these exchanges. To the extent that a firm has a long-term perspective, the emphasis is on image development and brand management. The primary means for communicating with customers is through mass media; the primary means of obtaining feedback is through traditional market research. Markets tend to be large, and a stable or rising market share is a key criterion for success.

  In other contexts, a relationship-building approach makes for a better (i.e., more profitable) strategy. In this approach, the time perspective is much longer; the profitability of single exchanges may be negative but justified as paying off in the long run. The emphasis is on customer management through personal communications and ongoing interactions with each customer. Mindshare, i.e., share of customer, is the key criterion for success. This is often reflected in customer retention rates.

- There are issues with determining the value of a customer. In many cases, it may be costly to calculate LTV precisely for any particular customer. However, rough LTV analyses can be sometimes sufficient to make comparisons between customers, allowing firms to focus on those that represent greater LTV to the firm. Two, there is a limit to using customer's mindshare to grow the business. This is because of two reasons:

  One, limited purchasing power of the customer caps the revenue stream from a customer to a company;

  Two, beyond a certain point, understanding customer's new needs may turn out to be more expensive than acquiring another customer.

- Given that there is a premium set on the quality of information acquired about customers in the identification and learning about customer step, how a company goes about making it a reality is a real challenge. A firm's strategic imperative to acquire information about its customers by either means—unobtrusive and intrusive—comes into direct conflict with customers' concerns about privacy. This is why a critical factor in successful knowledge acquisition strategies is trust. Trust has an asymmetrical quality of accumulating over multiple interactions, and yet can disappear in a flash[7]. Thus, firms that view privacy concerns as an inconvenience run the risk of sabotaging the primary goal of cultivating enduring relationships with customers.

- Technology has made outsourcing to customers at the mass customization step (creating what the customers want) a reality. The idea is to leverage the collective knowledge of the entire customer base to anticipate the preferences of each individual customer. Two factors influence the accuracy of the recommendations: the amount of detail a given customer provides regarding his or her preferences, and the total size of the user base. Thus, the real

7. One institutional structure that has been established to address privacy concerns is the non-profit TrustE consortium, which consists Web sites and privacy advocates that seek to enhance privacy relationships on the Web. To display the TrustE seal, sites must submit to an audit by TrustE, which guarantees to the public that the site adheres to the policies they post.

power of this system lies not only in its ability to anticipate preferences, but in its ability to link relationships among its user base, which consists of millions of users. Most importantly, how relevant is such information is an important factor to be considered especially for collaborative filtering systems. For rule-based systems, one has to ask how objective and effective are the modes to customize the products and services.

- The widespread buy-in of this concept rests heavily on the customers and enterprises realizing that One to One marketing is a win-win situation for both. The success of One to One marketing hinges on a learning relationship. The learning works in both directions. The firm ends up developing a knowledge base about each customer, based on what that customer has taught the firm about himself or herself. At the same time, the customer has developed a deep awareness of the irreplicability of the value offered by the firm. The result is that it is in both parties' interests to continue the relationship, and it becomes difficult for another firm to duplicate the level of personalization inherent in the products and services offered.

  However, the challenge is: like in any learning relationship, the partners should be able to see the tangible and intangible value in the relationship. Seeing the intangible value in a relationship is difficult.

The success of One to One marketing hinges on a learning relationship.

- While One to One marketing concept is key to long-term sustainability of firm's profitability, the firms are preoccupied mostly with achievement of short-term goals, like cash flow, among others. It will be interesting to see how executives in the firms come above the short-term goals to embrace this paradigm and implement it with a sense of urgency demanded by the approach.
- Moving from branding a product and building loyalty to "branding a relationship" and loyalty is a paradigm shift. Not only is it challenging to go ahead with a paradigm shift, but also it is difficult to holistically implement it in a company. Implementation of this paradigm requires significant resources to be committed to training the human capital of the company, and of the extended enterprise (like channel partners, among others).

Strategic Brand Development & Product Engineering Systems[8]

When a customer faces a set of alternatives of products and services, his perception of value of a product or service decides the success of the offering. These perceptions are a result of mental selection, interpretation, and integration of a tremendous amount of product information (such as features) and marketing information (advertising, word of mouth) into a coherent, person-specific, relevant picture. How customers process marketing information, form perceptions, and establish positions in their minds will be a function of their prior beliefs, knowledge, and experiences—in short, their value system. Therefore, different consumers when bombarded with the same information may form different perceptions and view product positions differently. So, through the choices a marketing manager makes in delivering it to the customer, perceptions are formally integrated into marketing strategy in each stage of the purchase cycle—from attracting, interacting, transacting through customer care. Among other things, profitability is dependent on the extent the product/service meets the expectations of the customer. To meet the expectations that the customer has from a product/service, the marketing manager must understand perceptions of the product and service alternatives they face.

Market research firms have developed MR&PE systems

- To accurately understand customers' mindshare
- To quickly and effectively engineer new and winning concepts, products, packaging and promotion

Founded on the following concept-solutions are the MR&PE systems from MJI.

MJI's Definition of Innovation and Technology

Innovation: MJI defines innovation as the combination of features to form new offerings even while a company is working within the comfort zone. This simple definition allows and invites a structure that is a simple combination of the following steps: identify the needs of the consumer; and then describe the raw materials (features, elements, and not final concepts), enabling technology (computer hardware and software) and integrative instrument (consumer).

8. Based on author's discussions with Howard Moskowitz (March, 2000), CEO of Moskowitz Jacobs, Inc.

Technology: Technology is a component of innovation. Technology enables an employee to perform tasks efficiently that could otherwise be very cumbersome and time-consuming. In addition, by empowering people with simple-to-use tools, technology breaks down the resistance to innovation.

Conjoint Measurement as an Organizing Principle

Since individuals differ in their perceptions of a product and service alternative, methods abound for dividing people into fairly homogeneous groups based on multiple criteria, like exogenous factors, purchase patterns, cognitive models, among other things. Table 3 describes two popular market research methods – conjoint analysis and cluster analysis – that are based on this concept.

MJI's Market Research & Product Engineering Systems

The organizing principle for MJI's MR&PE systems can be enumerated as follows:

- Segment consumers on the basis of the patterns relating the stimulus input (products, concepts) to liking.
- Model liking at the individual level
- Use, as the key measure, the stimulus level at which a person's liking maximizes
- Generalize from product to concept

MJI has many MR&PE systems that help integrate and accelerate the product development process. These systems are integrated into a package called Accelerated Integrated Product Development Process (AIDP). Table 4 gives the list of systems comprising AIDP. AIDP aids a marketing manager in two broad ways:

- Develop a product concept
- Carry out category appraisal and optimization studies

A Critique of MJI's MR&PE Systems

Though there are certain limitations of using these tools to carry out an ideal product category appraisal and concept development, some of these limitations are inherent to conjoint analysis methodology, and category appraisal and optimization studies. On the other hand, these systems reduce time-to-market, and provide an integrated, inexpensive, accelerated product development methodology, among other things. A critique of the concepts and methods of MJI's MR&PE systems is presented in two broad categories:

- Advantages
- Limitations in practical applications of these systems

Table 3: Two Popular Market Research Methods

Conjoint analysis Conjoint analysis is a technique useful for sorting out the relative importance of a product's attributes (benefits). A marketing manager is concerned with how consumers value these benefits. A fundamental idea in conjoint analysis is that a product can be broken down into a set of relevant attributes. Conjoint estimates an individual's "value system", which specifies how much value a consumer puts on each level of each of the attributes. The trick is that, via construction of the value system, we bootstrap ourselves up from asking about preferences on a small subset of products to being able to make predictions about relative preference for any products. That is, if we know an individual's value system, we can predict which of a set of available alternatives he will buy.
Conjoint analysis starts with a customer's overall preference judgments (desirability ratings, purchase intention, preference rankings) about a set of complex products with common attributes. It then decomposes these evaluations into separate and comparable utility scales, which can be used to either reconstruct the original preference judgments or predict preferences for a new set of alternatives with the same attributes.
The engine driving conjoint analysis is the analysis of trade-offs. Rather than forcing customers to think separately about individual attributes, conjoint asks the consumer to make judgments about products overall and then uses mathematical analysis to uncover the value system, which must be behind the preference judgments.
Cluster analysis It is the standard multivariate method used for grouping consumers into segments. Any (or all) of the measures of market research (direct questioning, perceptual maps, or conjoint analysis) for each consumer can be input into a standard computer program that will group them according to similarity and derive discrete clusters (or segments) of consumers.

Table 4: MJI's MR&PE Systems

MJI's MR&PE systems	Purpose
IdeaMap	Concept development technology (see Table 5)
ProductEngineer™	Find and fill the holes in the product market (see Table 5)
PromotionMap™	Accurately determine the most effective promotional offer
StyleMap™	Determine the optimal design for a package or product
MessageMap™	Product research tool for the pharmaceutical market
KidsMap™	Draw meaningful results from the children's market
DesignLab	Advanced market research and product engineering facility

Advantages

IdeaMap WIZARD's menu-driven, step-by-step guided format allows one to conduct powerful results-oriented studies quickly and inexpensively. Rather than making do with a few focus groups or simply testing two or three alternatives, the marketing manager can screen and optimize many different ideas, and clearly identify those that give the manager the best chance for success. In this way, the manager gets the best of conjoint analysis, modeling and optimization in a short time without carrying out the detailed quantitative analysis manually.

ProductEngineer™ combines consumer input, experimental design, mathematical modeling, optimization and reverse engineering. It helps the marketing research analyst to scientifically and systematically evaluate the key variables in the product category, identify major opportunities in the market, and hand R&D actionable formulation direction. Response-surface methodology coupled with MJI's unique sensory segmentation can reveal promising new segments, i.e., untapped opportunities. This can help a marketing manager engineer the product to satisfy specific groups or marketing strategies and maximize impact in the marketplace.

Some of the generic benefits of MJI's MR&PE systems are as follows:

- MJI's tools acquire and analyze data on a real-time basis. These tools help understand trends over a period of time. Two, these systems provide a structured approach to create product/services for a dynamic business environment. Three, by providing graphical-user-interface-based tools, these systems are very user-friendly and are easy to operate. These are sources of competitive necessity.
- From a practical standpoint, it is a simple methodology because it is not necessary to know the product features. Knowledge of only the basic elements that create value for individual customers is sufficient to translate data into valuable product information. So, these tools provide a platform to start with. Later on, experience adds the necessary flavor to create the product. These tools provide a basic premise about data from each individual's utility model. Then we can use a combination of these premises to create different concepts and see what is useful to a new breed of customers. If the customers are not aware of the product, we can give shape to their needs in the form of products. Thus, there is possibility of crossover among different segments.
- Since these systems help in providing rapid, actionable feedback at every stage of product life cycle, these systems emulate biology in that they embrace failure concept and recovery at each stage. Two, actionable feedback helps in One to One marketing.
- The sample size could be as small as 50. This saves resources and time. Further, facts are friendly. These tools use facts to justify new product development. So, justifying a budget is easier if we use such tools.

Table 5: Two Market Research and Product Engineering Systems from MJI

(1) IdeaMap®
To help marketing managers navigate through those countless decisions that may not justify large-scale research projects, MJI has introduced IdeaMap WIZARD—a do-it-yourself, streamlined version of the enormously successful IdeaMap concept development technology.

(2) ProductEngineer™
To succeed in emerging marketplace, the marketing manager must develop products by breaking new ground. ProductEngineer™'s category appraisal and optimization studies draw the blueprint needed to exploit the opportunities and generate profits at every stage of the product lifecycle.

Limitations

There are certain limitations in applicability of these tools that a marketing manager should be aware of. Some of the limitations are inherent to conjoint analysis methodology, which is the organizing principle of these systems.

- This method requires that we either know or find out by another method what attributes are salient in the product category. We need to specify a set of attributes which consumers view independently, i.e., the value of one attribute should not be dependent on the level of another. Also, the product should be such that it could be specified as a collection of attributes. There are some largely image products, e.g., a perfume, for which this is just not possible.
- The input data we require from respondents are overall preference or purchase likelihood judgments. This requires a level of respondent familiarity with the product category. Consequently, this method poses challenges for situations where the category is totally revolutionary.

  Two, the more information you input, the better decision you will end up with. This asks for a question: what is the limit to input information? Also, the input comes from a sample. In the Internet economy, people are scattered around the world;

they are not pre-recruited too. So, the problem is to select the right sample.

Three, this methodology does not incorporate scenario analysis of profitability. So, how does one judge the profitability of a product? (A great product may not necessarily fetch high revenue.)

Four, due to availability of excess data, able judgment is required. So, sufficient care must be taken while deciding the relevance of data.

Five, trying to structure the ambiguity is a formidable task. SPSS and SAS are other tools that belong to the same genre.

- The firm should, in most cases, be able to act upon the output of the method by constructing products, which deliver the attribute levels used by the analysis. However, there might be a premium on this aspect since it is easy to form combinations on a computer; translating into practice is always challenging.

The firm should be able to act upon the output of the method by constructing products, which deliver the attribute levels used by the analysis. However, translating into practice is always challenging.

- The concept development/approach is an innovative one. As we know, the degree to which the raw materials are innovative, the solution will be innovative. At the same time, this structured approach to product engineering is based on rule-based structuring. The inevitable result is a loss of creativity. Even otherwise, innovative implementation of this methodology in product development is also essential to deliver on the full potential of this approach.
- Though these systems provide a cost-efficient testing method based on permutations, these are not a replacement for other modes of customer relationship management tools. From a practical standpoint, whether a collection of interest is short-term or long-term is not known beforehand. This knowledge comes with experience and frequency of testing. So, the number of tests needed to justify that a concept is a long-term solution cannot be easily determined. Also, it is difficult to secure buy-in for these concepts from traditional brand managers who rely on their intuition to make many judgments. For example, how to get the buy-in from a sensory analyst and market research analyst?
- Technology as an enabler of business strategy is a competitive necessity; it does not provide competitive advantage. This paradigm hits hard on MJI's concept of technology provides competitive advantage.
- This methodology relies more on communication-based stimuli that leads to customer behaviour than on physical ones. Traditional research states the latter to be superior though.
- There is no guarantee that the sample for survey to generate data is the right representative. The reason: we may not have included all the elements in the sample to start with.
- MJI's systems are platform-dependent. Or, at least they need to be configured to different platforms.
- Several other questions also arise:
  - Does the customer know his needs?
  - What is the probability of success of a product that originates from a simulated concept?
  - Since we work in a real business environment, is it just a good hit quantifying the qualitative elements?
  - We have an "algebra of the head" of the customers and know the segments. How does one find out who belongs to which segment?

Brand Loyalty Management[9]

Not all customers are equally valuable to a company. While customers have different needs, they also represent different levels of value to a firm. So, a company needs to differentiate its customers. Figure 2 describes the loyalty ladder approach to customer differentiation. It costs the company to move horizontally to the right to span the entire customer base. However, a company can generate value for itself by moving vertically up the ladder. It can do so by gaining more of customers' loyalty. This, in turn, will increase the gains on customers' mindshare. To do this, a company has to address the three components of brand loyalty management:

- Management: This component addresses organization, metrics, reward building strong brands.
- Brand: A distinctive identity which differentiates a promise associated with a product, service or

9. Larry Light, *ibid.*

organisation and indicates the source of the promise.

- Loyalty: Loyalty is repeat behaviour based on true commitment to the brand.

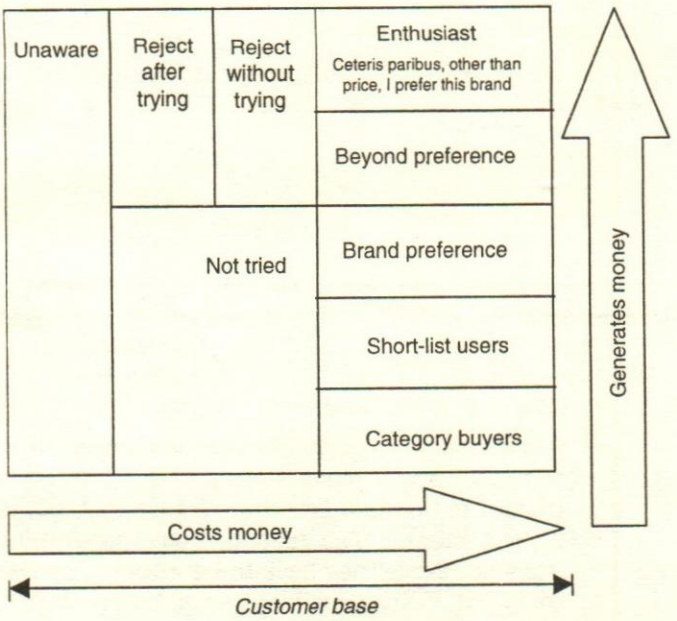

Fig. 2. Loyalty ladder approach

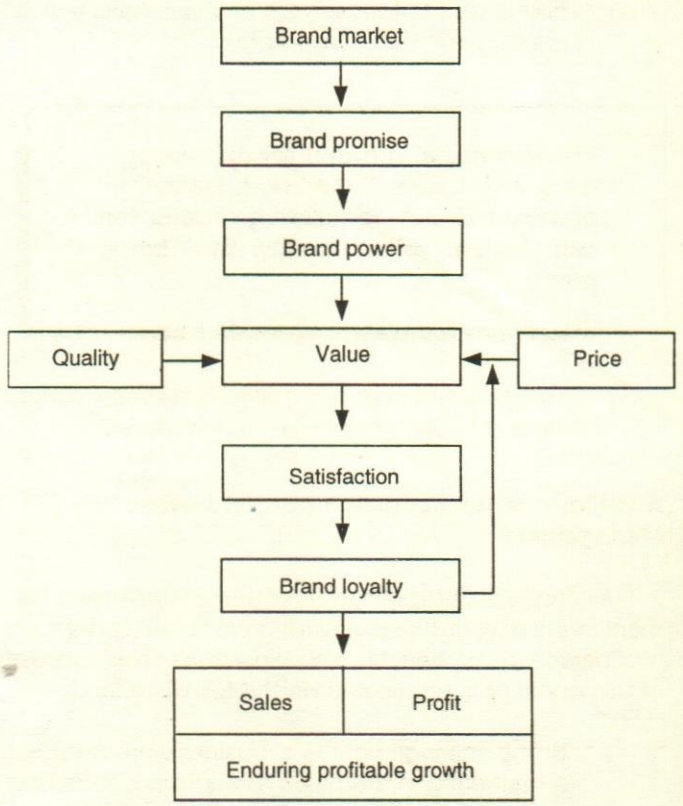

Fig. 3. Brand loyalty management

These components form the basis of the paradigm of brand loyalty management that is described visually in Figure 3[10]. It is necessary to understand the terms: brand management, brand promise, market, market segment, growth market, and brand market. Brand management is a short-term business strategy to build long-term loyalty. Further, a brand promise can be best described as: "Buy this brand and I promise you, you will get the value you expect". But one should pick a promise that is relevant to the market. So, we need to define the market for a brand. The definition of a market is not product-based, not geography-oriented, not distribution channel-based. People with a want form a market. In line with this, a market segment is a group of people who share common wants. Then, a growth market is where there is potential for growth of customers. Similarly, the concept of brand market is centered around the question: which of those market segments are we going to choose for a particular brand?

Having defined these terms, let us understand Larry Light's customer loyalty management. Larry Light contends that brand loyalty management is not an arm of marketing, but a business strategy. Accordingly, the organizing principle of enduring profitable growth in more and more companies is to create and reinforce brand loyalty. Stemming the customer exodus is not simply a matter of marketing, or operations, or finance. It demands a reconsideration of core strategy and operating principles. The key to success is building business loyalty (Reichheld & Teal, 1996b; Reichheld, 1996). Business loyalty provides the unifying framework that enables an executive team to modify and integrate corporate strategy and operating practices in ways that will better serve the long-term interests of customers, employees, and investors. Even more important, perhaps, the loyalty framework permits a set of practical measures that executives can use to manage the company's value creation process, the upstream source of all profits and growth.

The organizing principle of enduring profitable growth is to create and reinforce brand loyalty.

In sum, the key steps in brand loyalty management are:

- Define the market.
- Define the promise.
- Build familiarity.

10. Larry Light, *ibid.*

- Focus on the four drivers of value: satisfaction, price, quality, and brand power.

The key steps in brand loyalty management are: Define the market; Define the promise; Build familiarity; Focus on satisfaction, price, quality, and brand power.

- Translate the following into practice: people value a relationship more than a transaction.

A Critique of Applicability of Brand Loyalty Management

A critique of the applicability of brand loyalty management in the new business environment is presented from two perspectives: benefits and limitations. The success of this concept is predicated on the following factors:

- Brand management is a business process, not a marketing strategy. So, brand management is a short-term business strategy to build long-term loyalty. Therefore, a company must brand the promises; not the products. Thereafter, it should rationalize the brand portfolio to optimize the value creation process. Next, the company should measure what it wants from the brand. It is important not to exploit brands because a brand is now associated with a promise, not a product. Further, the companies must develop a common process in the company, and not a common outcome of the process. Then, the companies need to focus on continuous improvement of the common processes. Next, the cost of a building a brand needs to be matched with the value that the brand creates. The key to maximizing brand value is to build loyalty as far down as possible and be as profitable as possible (Figure 4).
- Business loyalty has three dimensions – customer loyalty, employee loyalty, and investor loyalty – and these are interdependent. So, it is not enough to focus a company's resources on customer loyalty alone. Further, retention integrates all the dimensions of a business. It measures how well the firm is creating value for its customers. Consistent high retention can create tremendous competitive advantage, boost employee morale, produce unexpected bonuses in productivity and growth, even reduce the cost of capital.

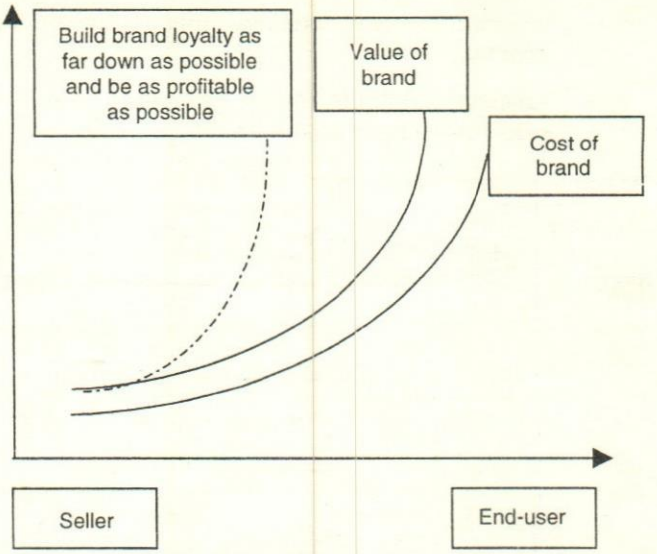

Fig. 4. Brand loyalty versus value chain

- It is important to move from brand management to brand loyalty management. That is, it is important to create a brand loyal customer, not a loyal customer. The reason: customer loyalty does not exist. They have to be loyal to "something". If this "something" is a brand, it can generate long-term loyalty. Moreover, we need to distinguish between loyal to "where you bought" versus loyal to "what you bought". That is, brand loyalty should not be confused with loyalty to an outlet, e.g., a retail store.
- Different customers provide different value to the firm. The share of a customer is the ratio of actual to strategic value. A successful brand loyalty management strategy leverages customer knowledge along both of these dimensions to determine how to allocate its resources. This enables the firm to focus its efforts on providing the greatest amount of value to those customers that represent the greatest amount of value.
- In many cases, it may be costly to calculate LTV precisely for any particular customer. However, rough LTV analyses can be sometimes sufficient to make comparisons between customers, allowing firms to focus on those that represent greater LTV to the firm.
- Many of the principles in brand management are related to packaged goods. This is because transactions originated with packaged goods. We must be careful while extending these principles that worked with packaged goods (oral products of P&G) to durable goods (Cadillac).
- While Martha Rogers and Don Peppers' One to One marketing concept (1997a & b; 1999a & b)

is key to long-term sustainability of firm's profitability, brand loyalty management is a short-term strategic goal. So, it will be beneficial to the firms that are preoccupied mostly with the achievement of short-term goals (like cash flow) to come above the short-term goals in order to embrace this new paradigm and implement it with a sense of urgency that is demanded by the approach. Further, companies must address the link between brand loyalty management and relationship management.

- Trust has an asymmetrical quality of accumulating over multiple interactions, and yet can disappear in a flash. Since brand loyalty management is centered around the three long-term elements – quality, leadership and trust – there seems to be a challenge measuring a short-term process using a semi-long-term measures.
- The difficult task of branding a relationship exists in brand loyalty management too.

Conclusions

There are specifically three conclusions that can be drawn:

One, a company can remain profitable if it can anticipate and meet customers' needs ahead of competition. Understanding customers' mindshare is the critical success factor to meet customer needs and delight the customer. MJI's approach is a good attempt at demystifying business creation through accelerated product innovation. But we should be wary of the limitations of this methodology.

Two, the key to true prosperity is not profitable growth, as conventional wisdom would state, but managing a virtuous cycle of business loyalty (not customer loyalty alone, as Larry Light contends), learning and value creation. The loyalty of human asset creates an immense value for a company. Few business people think of customers as annuities. Unfortunately, companies are used to husbanding more traditional types of inventory. But the difference is exactly the difference between a snapshot and a time exposure. Managers must begin to understand the long-term consequences of loyalty and begin managing their businesses with the goal of zero defections on business loyalty.

Three, the development of any successful marketing strategy depends on specification of a target market. So, the enterprises in the marketspace create and sustain their competitive advantage through a learning relationship with their customers. Information technology provides an economical means by which firms can deliver individualized products and services to each and every customer, based on feedback and interaction with these customers. It is in both parties' interests to continue the learning relationship, and it becomes difficult for another firm to duplicate the level of personalization inherent in the products and services offered. However, interactive technologies that help development of such a learning relationship also pose new challenges to the customers and companies alike. In the end, it is easier said than done to implement a paradigm shift from branding products to "branding relationship".

Information technology provides an economical means by which firms can deliver individualized products and services to each and every customer, based on feedback and interaction with these customers.

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Feature

Empowerment: A Tool for Improving Organisational Competitiveness

Biswajeet Pattanayak

In business organisations if people feel powerless it leads to a helpless situation which in turn affects the organisational performance. Responsibilities and accountability help and motivate individuals to perform better. The article discusses the concept and methodology of empowerment as a tool for bringing about organisational competence.

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Power and empowerment are concepts that are of interest to people throughout the globe. Alvin Toffler (1991) calls this the 'power shift era'-i.e., a deep level transformation nature of power. There is an old saying "power corrupts, absolute power corrupts absolutely", but today in the knowledge era, powerlessness corrodes and absolute powerlessness corrodes absolutely, is a general observation and experience.

Empowerment: Concept & Evolution

Empowerment is a process, which has evolved in response to trends towards a greater degree of responsibility and involvement amongst employees in the running of their organisation. This trend has emerged as most organisations recognise the capacity of their human resource to improve and enhance business performance. The idea of empowerment is not new. Lao Tse, writing in China in the 6th century B.C., said that a characteristic of great leader is that when the task is done, people will say "We did it ourselves", (Lao - Tse, cited by Wley, 1934). Conger and Kanungo (1988) show empowerment as a motivational concept associated with 'enabling' rather than 'delegating'. Enabling implies creation of conditions by management so that people can experience enhanced motivation to achieve desired level of performance. Apart from providing conditions such as offering the necessary support and reorganisation, management is also expected to remove conditions that foster powerlessness.

Empowerment is a motivational concept associated with 'enabling' rather than 'delegating'. Enabling implies creation of conditions by management so that people can experience enhanced motivation to achieve desired level of performance.

In recent years, there has been a vast amount of discussion of new management styles that promote individual or work group involvement (Lawler, 1992; Greenberg & Baron, 1997). Managers are encouraged to allow a high degree of workforce participation, group involvement and autonomy, and to develop self-managing work teams. These management styles are to empower employees, thereby to increase workforce commitment, and to humanize the workplace. Increased commitment and more human workplace environment in turn, are intended to result in improvements in work performance and good citizenship behaviors as well as quality of worklife (Brief & Motouridlo, 1986; Cohen et al., 1997). Practices such as empowerment, participation, autonomy and involvement are promoted in varying degrees at workplaces. Determining how much employee involvement is appropriate in a given situation is a matter of judgement (Paul, Niehoff & Turnley, 2000).

Empowerment is the process of passing authority and responsibility to individuals at lower levels in the organisational hierarchy (Wellins et. al, 1991). To achieve empowerment, employees at the lowest hierarchical levels must have the right mix of information (about process, quality, customer feedback and events), knowledge (of the work, the business and the total work system), power (to act and make decisions about the aspects of work) and rewards (tied to business results and growth in capability and contribution), right to work autonomously or independently of management control and direction (Lawler, 1992, 1994; Lawler et. al. 1989). The advantages of empowerment or involvement include higher quality products and services, less absenteeism, lower turnover, better decision-making and better problem solving which in turn result in greater organisational effectiveness (Dennison, 1984). However, the question of how much empowerment remains a paradox to be addressed by managerial judgement (Carnall, 1982).

Empowerment is the process of passing authority and responsibility to individuals at lower levels in the organisational hierarchy; employees at the lowest hierarchical levels must have the right mix of information, knowledge, power and rewards.

There are instances in Indian Corporations wherein too much empowerment has rendered the situation chaotic, distributed and dysfunctional in turn making the leader autocratic. It is very important to decide and monitor the level of empowerment to people, to make organisation functional. The paradox stems from attempts to grant employees as much control over their work and their work environment as they need, while at the same time recognizing that empowering employees creates economic problems and entitlement beliefs of more empowerment that would be unfulfilled eventually. The process of empowerment creates a psychological contract that is difficult to maintain, given human nature. Thus, too much or too little empowerment in a given situation may be dysfunctional for optimal functioning.

Emphasis on structure, goals and measurement suggests some limitations on group empowerment and focus on cost benefit analysis suggests that empowered teams may be situational and problems specific. (Brickley et. al. 1997), To be productive, teams must:

- have potential synergies
- be able to acquire relevant knowledge for decision-making at low cost, and
- find ways to deal with free rider problems at low cost.

Thus, empowerment contributes most when it is implemented in specific situations and each structured carefully and controlled.

Introducing an empowerment program into an organisation creates employee beliefs about opportunities for participation. Over time, with success of the efforts, employees gain confidence in their ability to contribute and their aspirations grow (March & Simon, 1958). Along with beliefs of even greater empowerment are beliefs of entitlement to increased rewards to maintain the psychological contracts, a degree of empowerment must continue to grow.

Rotter (1966), Seligman (1975) and Hopson and Scally (1981) point out that empowerment is not an end state, but a process that all human beings experience. Throughout our lives, we behave in more or less empowered ways, depending on our level of self-esteem and skill development, tempered by surrounding circumstances. Employee empowerment has been touted as a panacea for improving organisational competitiveness through enhanced employee motivation, morale, satisfaction, commitment and innovation (Ford & Fottler, 1995; Randolph, 1995; Rottstein 1995).

Empowerment Process

An empowerment process involves change, which may be painful and frustrating. The process also takes vast amount of time and energy. Henkel et. al., 1993, designed an "Empowerment Readiness Survey" con-

sisting of 10 statements that address 6 dimensions of empowerment, which are as follows:

Communication: How is information communicated? What is the tone behind the message? How much information is communicated?

Value of People: Are people and their ideas valued in the organisation? How is this shown? How do people respond to way out ideas?

Ambiguity: Is there tolerance for ambiguity? How do people respond to trial and error?

Concept of Power: How is power perceived in the organisation? Is it shared? What level of power is being distributed?

Information: Are people willing to share what they know with others? Is there trust?

Learning: Is the organisation a learning organisation or it is a business as usual?

Henkel et. al, claimed that the survey may be used in a number of ways: as an information gathering tool before embarking on the empowerment change process; as part of a training program on empowerment by individuals, small groups and departments or the whole organisation etc. He has further warned that it should not be used as a way of identifying individuals for punitive purposes. The survey has been used in organisations before they have entered into total quality management process and identifies levels of empowerment readiness.

Characteristics of Empowered Organisation

Companies with a high level of job autonomy usually have the following characteristics (Finegan, 1993).

- They invest a lot of time and effort in hiring, to make sure new recruits can handle workplace freedom.
- Their organisational hierarchy is flat.
- They set loose guidelines, so workers know their decision making parameters
- Accountability is paramount – results matter more than process
- High quality performance is always expected.
- Openness and strong communication are encouraged.
- Employee satisfaction is core value.

Shape for Empowerment

Hierarchy is not completely incompatible with empowerment. There are companies having success stories inspite of their hierarchical structure. It is not always necessary to dismantle and rebuild a structure. The best shape for any organisation is the one that helps it to achieve the results sought. The best shape for empowerment, is whatever allows and encourages people to take responsibility. Lorenz (1992) describes his vision of and empowering structure:

- Instead of series of levels which command and control the one immediately beneath them, power and information, as many issues must be delegated, decentralized and diffused.
- Trust must be established between superiors, peers and subordinates
- Information should be shared as accessible through networking
- Fewer managers with wider responsibilities. The span of empowerment of well above 20, in which the manager's role shifts from controller to coach and mentor (Drucker, 1989, Lorenz, 1993)

Structural changes alone will have no effect without a strongly shared organisational culture. Unless there is a culture which recognizes the need to change autocracy into participation and co-operation, at an individual level in making it happen, structured changes simply do not work (Richard, 1999). Hence it is important to understand the dynamics of a particular organisation vis-à-vis the prerequisites of empowerment before attempting restructuring in the organisation.

Guidelines for Introducing Empowerment

- Understand why the organisation is making the change and what it wants to achieve
- Select strong leaders to head the change
- Involve people in planning how to introduce empowerment
- Create transition project teams to test and coordinate efforts and communicate results
- Provide training in new skills and behaviors
- Establish symbols of change
- Acknowledge and reward achievements

Factors Effecting Empowerment

There are three major factors fuelling the empowerment trend (Maccoby, 2000):

Technology: Computers and other hi-tech tools now perform all the routine tasks that formerly required human efforts. This empowers employees by freeing them to perform more high-end work that takes creativity and initiative, which means that employees should be provided with training and information. They need to move beyond the mundane to make work tasks.

Customers: Today's customers are also empowering employees by depending on them more than ever. When something like that happens support the employee and reward his or her work.

Organisations: Companies empower customers through the internet, where they can make their own decisions and purchases without assistance. Employees will need to find better ways to serve them, since is also easier than ever for customers to move to a competitor.

Empowerment Cycle

Empowerment is a complex, long-term, stop-start process. It involves a number of steps that are not necessarily sequential; however, it helps participants to understand if they are shown the whole process. The process is divided into five stages (Hogan, 2000).

Stage I: Recall, Depowering and Empowering Experiences: In this stage, the employees should be involved in recalling events that were both depowering and empowering.

Stage II: Discuss Reasons for Depowerment and Empowerment: In this stage, it is required to identify the reasons for depowerment and empowerment. Some experiences may have been both empowering and depowering at different times. Many factors are ambivalent, i.e. that they can be either empowering or depowering depending on the individual, the locus of control and the level of self-esteem of the individual at the time.

Stage III: Choose one issue, problem or project, to work on: This stage of the process, requires to choose a problem or project on which to work. Again there is a choice, you may prefer to work alone or with a friend on projects that you are working on common or your friend could act as a questioning mentor to make you think on your project.

Stage IV: Identify potential power bases: In this stage it is essential to understand the large number of potential power sources available in a given situation. French and Raven (1959) have described the following power bases:

- Legitimate power: A person's ability to influence because of his position
- Reward power: Deriving power from the ability to reward compliance through pay increase, recognition or promotion
- Coercive power: Power based on fear and the ability to punish through delegating undesirable work assignments, issuing reprimands or effecting dismissal.
- Expert power: Power held by individuals who gain it because of their high level of skills and knowledge, which gains them the respect of others.
- Referent power: Power gained because of an attractive personality, charisma or charm.

These are the sources of power. There are four ways of using power in organisations:

- Increase one's own power base
- Enact power to make things happen through others
- Challenge the power bases of others
- Increase the power bases of others

Stage V: Develop and Implement Action Plans: Identification of power bases alone will not empower you unless you develop careful action plans for how you may use the power bases. You have identified as well as developed relevant time limits. This requires considerable determination. At a later date, you need to return to state I and review and evaluate the experiences that have resulted from your action plan.

Benefits of Empowerment

Empowerment benefits the organisation itself by creating an environment which encourages pro-activity, problem solving, challenge, innovation, continuous improvement, optimum utilization of employees, a high degree of employee motivation and enhancement of business performance. For employees, empowerment provides a greater sense of self-esteem, high degree of involvement and participation, learning environment opportunities for personal growth and development and

a greater sense of achievement. Replacing the 'fear and greed' hierarchy with a network of empowered workers creates benefits like faster responses, loyal customers, higher quality, lower costs, greater productivity and employee orientation (Carter, 2000).

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Inspite of discussions and appreciation of empowering employees, it has not been implemented in true sense in Indian corporations. In most organisations, senior management preaches the relevance of empowerment but unfortunately very few of them have actually implemented empowerment of people. HR professionals need to initiate in influencing organisation work culture to make the top-down method a success.

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Feature

Employee Empowerment: Impact on Employee Commitment

K.S. Gupta & Krishna Murari

In today's changing business scenario, employee commitment has emerged as one of the prime factors in developing the strategy of an organisation. Empowerment is a process of sharing power and providing an enabling environment to encourage employees to take initiative in action at all levels in order to achieve organisational and individual goals. Commitment is one of the five major consequences of empowerment. Present study carried out by the authors reveals a specific relationship between commitment and empowering variables. A strong relationship among demographic factors, empowerment and commitment is also found.

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The past decade witnessed the beginning of a major change in the economic policies of the Government of India. Government decided to open up India's economy in order to integrate it to the international economy. Changes in the world business scenario have influenced and caused rapid changes in Indian business scenario. Liberalisation, globalisation and privatisation have created competition in domestic as well as foreign markets. With increased competition, there is need to become cost effective and efficient. Organisations therefore have to upgrade their work methods, work norms, technical and managerial skills and employee motivation to face the challenges (TV Rao, 1994).

In a survey conducted on Impact of Economic Reforms on manufacturing industries (Gupta, 1996), it has been observed by managerial performers that far more attention towards human resource is required to have competitive edge. Employee commitment and involvement pay a major role in making organisations more competitive. Employee empowerment, flatter organisation, training, team building, skill development, open culture, risk taking and entrepreneurship are essential for high employee commitment and involvement. In a traditional, hierarchical organisation employees do what they are told to do. They forget creativity and innovation. In such cases employees are seen as machines. This destroys employee initiative, eliminates trust and creates legions of workers who are not lazy but are uninspired. They do not commit themselves to the responsibilities assigned to them. Recently, the concept of employee commitment has gained increased attention and has been related to a variety of outcome variables e.g. commitment and job satisfaction (Mathieu & Zajac 1990), role conflict and role ambiguity (Morris & Kock 1980) organisational commitment and job variety (Martin & O'Laughlin 1984) etc.

Gupta and Murari (1996) define empowerment as a process of making the organisation responsive and flexible, providing a climate for continuous learning,

be characterised by a strong belief in and acceptance of the organisation's goal and values, a willingness to exert considerable effort on behalf of the organisation, and a strong desire to maintain membership in the organisation.

Many researches have been carried out to relate commitment with different constituencies and several outcomes such as satisfaction, intent to quit and pro-social behaviour. Researchers found that organisational commitment is positively related to age and negatively related to education. It is found to be positively related to work ethics, task orientation/active orientation, need for achievement, job variety, feed back and task identity, work technology, job prestige and autonomy. It is also found by researchers that it is positively related to communication, promotional and advancement opportunities, group cohesion and job security.

Organisational commitment is positively related to age and negatively related to education. It is positively related to work ethics, task orientation, feed back, work technology, job prestige and autonomy.

Literature survey reveals that employee commitment depends on three factors, namely personal characteristics, job and role characteristics and organisational characteristics. Empowerment processes focus attention on these characteristics. Empowerment, like any other psychological concept is a relative perceptual construct, in which the empowering variable has a direct positive impact on consequences. Commitment is one of the consequences involved in empowerment as shown in conceptual framework (Fig. 1) (Gupta, 1999). The following are the empowering variables:

- Respect for Team Member (RTM)
- Top Management Attitude to Human Resource (TMA)
- Opportunities for Learning Application (OLA).
- Open Communication (OC)
- Organisational Support for Innovation (OSI)
- Responsive Superior (RSR)
- Opportunities for Self Development (OSD)
- Low Formalisation (LFN)
- Performance linked Feedback (PLF)
- Autonomy (AMY)

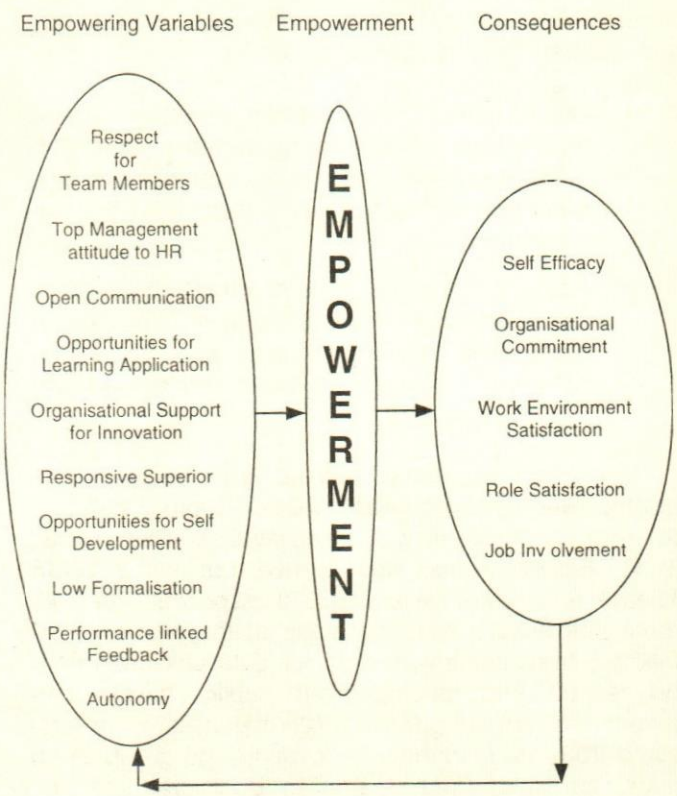

Fig. 1. Framework of Empowerment

Consequences are:

- Self efficacy (SE)
- Organisational Commitment (OCT)
- Work Environment Satisfaction (WES)
- Role Satisfaction (RS)
- Job Involvement (JIT)

The Study

The present study was carried out with the following objectives:

- To analyse the role of empowerment for employee commitment.
- To measure the level of empowerment and level of commitment in Indian business organisations.
- To find out co-relation among the demographic variables, empowerment processes and employee commitment.

The study is exploratory as well as descriptive research. It explores the general subject to find out the level of empowerment and its impact on employee com-

mitment. Accordingly, following research methodology was adopted to carry out the study.

- Use of questionnaire method to collect data for finding out co-relation among the empowerment processes, employee commitment and demographic factors in Indian business organisations.
- Analysis of the data collected through questionnaire method to find out the level of empowerment, level of commitment and co-relation between empowerment and commitment using SPSS software.

Instrument was developed using two scales—one for empowerment with reliability 0.94 (Gupta, 1999) and other for commitment with reliability 0.76 (Porter et al, 1974). Reliability test was carried out using SPSS Release 6.1.3, after collecting 230 responses from different industries. Cronbach alpha of the instrument is 0.92. 52 items scale was used for data collection from the respondents ranging from public, private and government organisations. 904 responses were collected from the respondents covering age group 21-58 years, education from matric to post graduate, experience from 1-35 years, 6 hierarchy levels. There were only 8 female respondents in comparison to 896 male respondents.

Respondents were grouped as per age into four groups—21-30 yrs (48 nos.), 31-40 yrs (360 Nos.), 41-50 yrs (272 Nos.), and above 50 years (214 Nos.). There were 160 respondents having experience 1-5 years, 568 respondents with experience 6-15 years, 136 respondents having experience 16-25 years and 40 respondents having experience more than 25 years. There were 24 respondents with matric qualification, 168 diploma holders, 512 graduates and 200 post graduate respondents. Respondents were working at different levels in their organisations and they were categoried into 6 levels i.e., junior level 1 and 2, middle level 1 and 2, and senior level 1 and 2. There were 120, 80, 440, 112, 120 and 40 respondents in these categories respectively.

Analysis of Data

Mean, standard deviation and range for different variables is given in Table 1. Following statistical tests were carried out using Statistical Package for social Sciences (SPSS Release 6.1.3):

- Factorial design
- Analysis of variance

Table 1: Mean and Standard Deviation

N - 904

Variable	Mean	Std Dev	Minimum	Maximum
Empowering				
AMY	3.19	0.83	1.0	5.0
LFN	2.79	1.13	1.0	5.0
OC	3.13	0.80	1.0	4.2
OLA	2.94	1.02	1.0	5.0
OSD	2.90	0.88	1.0	4.5
OSI	2.87	0.71	1.4	4.6
PLF	3.46	0.77	1.0	4.6
RSR	3.49	0.99	1.0	5.0
RTM	2.71	0.78	1.0	4.0
TMA	2.76	1.06	1.0	5.0
Consequences				
SE	2.79	0.95	1.0	5.0
RS	3.16	1.09	1.0	5.0
JIT	3.35	1.07	1.0	5.0
WES	3.48	0.87	1.0	5.0
CMT	3.52	0.77	1.8	4.9
Mean				
EMP	3.02	0.61	1.4	3.9
CQS	3.26	0.72	1.2	4.8

Table 2: Summary of ANOVA (Age, Sex, Experience, Education & Level) on commitment

N = 904

Source of Variance	Sum of Square	Degree of Freedon	Mean Square	R. Ratio	F. Prob
Age	95.0721	3	31.6907	64.2159	0.000
Sex	0.0169	1	0.0169	0.0283	0.8664
Experience	35.8661	3	11.9554	21.5761	0.0000
Education	50.4124	3	16.8041	30.9398	0.0000
Level	43.8690	5	8.7738	15.9055	0.0000

$p > 0.05$

Table 3: Summary of ANOVA (Age, Sex, Experience, Education & Level) on Empowerment

N = 904

Source of Variance	Sum of Square	Degree of Freedon	Mean Square	F. Ratio	F. Prob
Age	13.5679	3	4.5226	12.5422	0.0000
Sex	1.3496	1	1.3496	3.6149	0.0576
Experience	2.5389	3	0.8463	2.2698	0.0790
Education	32.8660	3	10.9553	32.3021	0.0000
Level	20.9111	5	4.1822	11.8403	0.0000

$p > 0.05$

Table 4: Correlation Coefficient

	SEX	EXP	EDU	LVL	PLE	OC	OSD	OLA	RTM	TMA	LFN	OSI	AMY	CMT
AGE	−.1850	.6696*	−.4096*	.2466*	−.1486	−.0361	.0190	−.0660	−.0145	.0382	−.0014	−.0634	.1272	.1428
SEX		−.1418	.1343	−.0107	.0666	.1025	.0105	.1902*	.0760	.0660	−.0657	.0171	−.0789	−.0056
EXP			−.2773*	.1597	−.0395	−.0022	.0953	−.0435	−.0637	.0020	−.0388	−.0753	.0021	.1930*
EDU				.3575*	−.1819*	−.2034*	−.2845*	−.1704	−.2213*	−.3442*	−.2992*	−.2504	.0132	−.2187*
LVL					.0446	−.1181	.0246	.0619	.1877*	.1022	.0773	.0244	.1559	.0540
PLF						.4995*	.4460*	.5235*	.6677*	.6738*	.3534*	.6393*	−.1003	.6996*
OC							.4527*	.4392*	.6107*	.5760*	.3707*	.5748*	.0766	.6440*
OSD								.6237*	.5252*	.6328*	.54058	.7620*	−.0407	.5149*
OLA									.4960*	.5374*	.4235*	.5025*	.0142	.3819*
RTM										.7078*	.4591*	.6789*	.2248*	.5392*
TMA											.5854*	.6905*	.1282	.6478*
LFN												.6211*	.0533	.4290*
OSI													.0826	.5827*
AMY														−.0236
EMP														.6690*

*Significant

- Correlation
- Regression

Factorial Design: Factorial Design 4×4×4×6×2 among demographic variables i.e. age, experience, education, level and sex was carried out to find out significant relationship and interactions of these variables with commitment. There was no significant differences among all demographic variables with consequence because of empty cells as the responses are only 904. However, individual evaluation shows significant differences between commitment and age, experience, education and level (Table 2) and also shows significant difference between empowerment and age, education and level (Table 3).

Analysis of Variance: Table 2 shows that there are significant differences among all demographic variables with commitment except with sex as there is insufficient number of female respondents. Table 3 shows that there are significant differences among age, education and level factors with empowerment.

Correlation: Correlation among 15 variables consequences and empowerment from 904 responses have been computed and placed in table 4. The correlation between variables more than 0.18 is treated as significant (Hair et. al., 1990). Commitment has significant correlation with all empowering variable except autonomy. It has significant positive correlations (0.669) with empowerment. It shows that empowering processes increase the commitment of an employee.

Regression with Commitment: Multiple regression was performed to establish relationship with independent (empowering) variables using stepwise regression method (Table 5). Independent variable performance linked feedback (PLF) emerges as a predictor variable at step no. 1 with r square .4894 indicating that 49 per cent of the variance in commitment can be explained by PLF. Other predictor variables at different steps are given in Table 5.

Table 5: Stepwise Multiple Regression for Commitment

N = 904

Variables		Predictor Variable Entered In Step No.	R Square	Beta	F Ratio	Sig F
Dependent	Independent					
Commitment	PLF	1	.4894	0.6220	18.394	0.000
	OC	2	.6050	.4106	16.036	0.000
	OSD	3	.6224	.3230	8.948	0.000
	OLA	4	.6352	−.2440	−8.969	0.000
	RTM	5	.6508	−.1844	−5.605	0.000
	TMA	6	.6612	.1090	3.134	0.002
	LFN	7	.6655	.1351	5.136	0.000
	OSI	8	.6738	−.2123	−5.244	0.000
	AMY	9	.6767	.0618	2.824	0.005
	Constant				2.768	

Taking the beta value (slope) and constant (y intercept) into account, a linear commitment model can be predicted as:

CMT = 2.77 + .62PLF + .41OC + .32OSD + .11TMA + .14LFN + .06AMY –.21OSI –.24OLA –.18RTM

Effect of Demographic Factor on Empowerment and Commitment: Factorial analysis shows that there is significant relationship between commitment, age, experience, education and level.

Empowerment and Commitment with Age: Age was categorised in 4 levels viz., 21-30, 31-40, 41-50, and above 50 years. The mean scores of empowerment commitment for these categories are given in Table 6. Empowerment and commitment decrease and increase respectively, till the age of 50 and then increase with increase in age.

Table 6: Age, Empowerment and Commitment

N = 904

Age Group Years	No. of respondents	Empowerment Mean Score	Commitment Mean Score
21-30	48	3.12	3.65
31-40	360	3.10	3.52
41-50	272	2.84	3.10
Above 50	224	3.11	3.98

Empowerment and Commitment with Experience: Experience is the number of years in particular organisation, not the number of years of service by the respondent. Table 7 shows that empowerment increases in experience group 6-15 years and decreases in experience group 16-25 years and again increases in experience group above 25 years. Commitment decreases in experience group 6-15 in comparison to experience 1-5 years and then increases to maximum level in experience group maximum 25 years.

Table 7: Experience, Empowerment and Commitment

N = 904

Experience (Years)	No. of respondents	Empowerment Mean Score	Commitment Mean Score
1-5	160	2.99	3.50
6-15	568	3.06	3.41
16-25	136	2.92	3.79
Above 25	40	2.99	4.21

Empowerment and Commitment with Education: Table 8 shows the scores of respondents with different educational background. With increase in education, empowerment decreases while commitment is found maximum in respondents with diploma. It is found least in graduates and post-graduates.

Table 8: Education, Empowerment and Commitment

N = 904

Education	No. of respondents	Empowerment Mean Score	Commitment Mean Score
Matric	24	3.33	3.61
Diploma	168	3.32	4.01
Graduate	512	3.02	3.40
Post Graduate	200	2.74	3.40

Empowerment and Commitment with Level: The sample is divided into six levels junior 1, junior 2, middle 1, middle 2, senior 1 and senior 2, depending upon the position in hierarchy of organisation structure. Means scores on empowerment and commitment are given in Table 9. It is observed that empowerment is least in junior 2 and middle levels while it increases in senior level and reaches maximum at senior 2 level. Commitment also decreases at junior 2 and middle level while increases in senior level and reaches maximum in senior 2 level.

Table 9: Level, Empowerment and Commitment

N = 904

Level	No. of respondents	Empowerment Mean Score	Commitment Mean Score
Junior 1	120	3.16	3.73
Junior 2	80	2.95	3.39
Middle 1	440	2.95	3.40
Middle 2	112	2.86	3.31
Senior 1	120	3.24	3.60
Senior 2	32	3.51	4.47

Findings

From data analysis the following are the significant outcome:

- Empowerment processes have positive correlationship with commitment. Employee commitment increases with empowerment and the equation with respect to the empowerment processes is as follows:

CMT = 2.77 + .62PLF + .41OC + .32OSD + .11TMA + .14LFN + .06AMY –.21OSI –.24OLA –.18RTM

- Demographic factors especially age, experience, education and level, have significant effect on commitment and empowerment.
- As age increases empowerment decreases. However, after the age of 50 years both increase with age i.e. the aged persons feel empowered by virtue of experience of life.
- Empowerment increases with increase in number of years of experience as person gets more opportunity for career growth in other organisations too.
- It is found that highly educated persons feel less empowered and committed. It may be due to less opportunities to use education in the organisation and scope of getting better career growth opportunity elsewhere.
- Middle level managers feel less empowered due to organisational structure and power distribution. However, at higher level, empowerment and commitment are more.

Conclusion & Implications

Empowerment plays a major role in organisational commitment. In the emerging era of cut throat competition, human resources will play a decisive role in the success of an organisation. In such a situation an organisation has to focus its attention on empowering processes to enhance the commitment and loyalty of its employees. This model is an eye opener for organisations while dealing with their human resource. The model emphasises concentration on empowering processes for increasing the commitment of employees. The scale developed can be used to measure the level of commitment and empowerment in an organisation. It can also be used to identify the more important empowering factors which can increase the commitment of employees so that necessary action can be taken to reinforce the actions which are important for these variables. This scale can also be used to find out the training requirement of employees and restructuring of groups depending upon the score of individuals in the groups.

This scale can also be used to find out the training requirement of employees and restructuring of groups.

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Feature

Indian Engineering Firms: Globalisation, Technical Efficiency & Export Behaviour

R.N. Agarwal

The objective of the study is to examine the impact of globalisation on technical efficiency and export intensity of firms. Technical efficiency of medium and large engineering firms (public limited companies) in the post-reform (1992-95) period is measured by a deterministic frontier production function based on a cross-section of firm-level data supplied by the Reserve Bank of India. It is hypothesised that technical efficiency and export intensity of firms influence each other. A simultaneous equation model consisting of two equations is specified and estimated by the 2SLS method. It is revealed that the competitive pressure generated by liberalisation of economic policies and globalisation through the import of technology, foreign direct investment and exports has helped in improving the technical efficiency of firms. Firm specific factors like firm size, energy intensity, vertical integration and age are also found important. Export intensity is found to have improved with improvement in technical efficiency, import of raw materials and components, and marketing efforts through advertisement etc. The results further support the hypothesis of interrelationship between technical efficiency and export intensity.

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After gaining independence, a number of developing countries including India sought economic development by substituting imports with domestic production through import protection. But most of these countries could not achieve their objective of growth and economic development as import-substitution policies proved to be ineffective. Some of the problems caused by import-substitution policies included inefficient production and limited market size. Inefficient production arose as import protection limited competition among producers, while protected domestic market did not provide sufficient demand for producers to enjoy benefits from scale economies. But some countries in East Asia such as Hong Kong, Taiwan, and Singapore abandoned these policies, liberalised their foreign trade policies and turned to export- promotion policies since the 1960s. These policies turned out to be a success, and these countries achieved rapid export expansion, which in turn led to rapid economic growth. The success of East Asia persuaded policy makers in other parts of the world to follow outward-oriented policies. Consequently, starting in the mid-1980s, many other countries in South-East Asia, Latin America as well as other parts of the world followed suit.

In addition to liberalization of foreign trade policies, another notable characteristic of economic policies pursued by developing countries in recent years is the liberalization of policies toward foreign direct investment (FDI). The attitude toward foreign multinationals has changed. They have come to be regarded as a contributing factor to the economic development of recipient countries by providing these countries not only with technology and know-how but also with international sales and procurement networks. Recognising these positive factors associated with multinationals, a number of countries have adopted preferential policies to attract FDI. As a consequence, in some countries a cycle consisting of expanding exports and output is created, leading to rapid economic growth.

In India, industrial, trade and foreign investment policies have been greatly liberalised since 1991-92. The new policies have relaxed or removed many government controls on investment and production decisions of firms, provided them with a freer access to imported inputs, capital goods, and technology, and exposed the firms to greater competition, both domestic and foreign. Indeed, the prime aim of economic reforms has been to raise technical efficiency and promote an international orientation in industrial firms. At the same time, many capital goods have been added to the list of products where imports do not need to be cleared by government authorities. Moreover, import-licence restrictions for a wide range of industrial inputs have been either eased or lifted while maximum rate of import duties has been lowered. The "canalization" system has been liberalized too. Finally, foreign investment has been liberalized. As a result, direct foreign investment up to 51 per cent equity participation in high priority industries is now permitted. Exports have grown from US $18.1 billion in 1991-92 to 31.7 billion in 1995-96. The growth rate of exports during 1995-96 over the previous year in US dollar terms has been more than 20 per cent.

The prime aim of economic reforms has been to raise technical efficiency and promote international orientation in industrial firms.

To what extent has globalisation been successful in attaining the objective of productivity gains and better export performance has not been systematically studied for Indian industries. This paper makes an attempt in that direction. The present study is undertaken to analyse the performance of medium and large engineering firms (public limited companies) in the post-reform period. The engineering industry has been chosen for the present study because the issue of efficiency and outward orientation assumes special significance with this industry, as it has high backward and forward linkages with every sector of the national economy. As supplier of goods and services, it constitutes the very base for growth and development. It meets the growing needs of capital goods of the economy as well as requirements of the construction, power and mining sectors, besides fulfilling the country's defence requirements. The composite production index of the engineering sector has a weight of around 30 per cent in the general index of industrial production and it has in recent years emerged as a major export sector. The engineering industry is also an exporter of technical know-how and consultancy services to a number of African and Arab States. It consists of several key industries like metal and metal products, transport equipment, electrical and electronics goods, machinery and machine tools etc.

Globalisation, Technical Efficiency & Export Performance of Firms: Linkages

Liberalisation of economic policies and globalisation generally help in the inflow of modern technology from abroad and foreign capital. Technology imports help firms improve the quality of their products, to reduce their cost of production through economies of scale and scope, and better industrial organisation, and thereby to raise their competitiveness in international markets. Inflow of foreign capital in the form of FDI (foreign direct investment) can lead to improvement in productivity by influencing supply-side and demand-side factors of production or producer behaviour. Looking first at the impact of demand-side factors, one can identify the impact of competitive pressure that comes through imports and exports. With liberalization of trade and FDI, imports as well as the number of foreign firms operating in the liberalizing country increase, leading to greater competitive pressure on domestic firms. Faced with increased competitive pressure, domestic firms have to improve productivity to survive. Domestic firms unable to meet increased competition are forced to exit from the industry. In contrast to firms under competitive pressure, domestic firms operating in a protected environment lack competition which results in inefficient production. Moreover, protection policies tend to promote rent-seeking activities, as protected producers can enjoy monopoly rents. Rent-seeking activities, which are non-productive, lower productivity as they shift resources away from productive activities.

Turning to the supply-side impact of liberalization on trade and FDI, it may be better to divide the discussion into two parts, one on trade liberalization and the other on FDI liberalization. Trade liberalization enables firms to use high-quality parts, components, and machinery at lower prices resulting in improved productivity. By contrast, protection of firms producing parts, components, and machinery forces the firms using these materials to use low-quality but high-priced products. To offset the disadvantage, firms using low-quality and high-priced components and equipment ask for protection. In other words, protection tends to proliferate bringing on a vicious cycle of low efficiency.

Again, greater export orientation pressurises firms to be more efficient and reduce costs. With foreign exchange earned from increased exports, firms can import high-quality components and equipment resulting in higher productivity. In addition to technology licensing

and foreign capital, exports could potentially provide firms with a means of acquiring technology from abroad. Overall, exporters generally have higher levels of technical efficiency than domestic market firms, mainly in the more modern industries. Therefore export orientation generally has a favourable effect on the technical efficiency of the firms.

The reduction in cost of production through import of cost effective technology and productivity gains through globalisation help enhance the firm's competitiveness in the export market. In recent years emphasis has also been on improving the quality of products through in-house R&D and transfer of technology. Cost and quality factors help firms in improving their export performance in the existing macroeconomic environment of national economy.

Review of Earlier Studies

A number of studies have examined the effect of trade and foreign investment liberalization on economic development: for example, Little-Scitovsky-Scott [1971], Krueger [1978], Bhagwati [1978], and Pappageorgiou-Michaely-Choksi [1991], These studies have examined in detail the changes in trade policies and their effect on economic growth. But, there have been only a limited number of studies which have focused on the impact of trade liberalization on productivity. To development economists, perhaps the best-known argument linking trade regimes and productivity is that the returns to entrepreneurial effort increase with exposure to foreign competition (Corden 1974; Martin & Page 1983). Unfortunately, formal representations of this argument reveal its fragility. To hold, entrepreneurial labour supply curve must be upward sloping in the relevant range, and change is work incentives must go in the same direction for both export-oriented and import-substituting producers (Corden 1974; Rodrik 1988). Arguments based on increasing returns are also common in development literature. Nishimizu and Page (1991, p. 253) summarize the logic as it has often appeared: "The existence of economies of scale... implies that a widening of the market through trade should lead to reductions in real production costs. In the context of an output-oriented development strategy, this argument is usually cast in terms of the benefits of increased demand through export expansion..." As with entrepreneurial effort arguments, however, analytical scrutiny has shown that scale economies can cut both ways. Finally, trade reforms affect the tightness of the link between domestic and world markets and generate speculation about their own sustainability. These uncertainty effects can influence productivity.

Previous studies on the effect of liberalization of trade policies on productivity, whose number is very limited as noted earlier, can be divided into two types depending on their methodology and coverage of countries and industries; one type pursues cross-sectoral analysis on a particular country and the other performs cross-country analysis. Examples of the former type include Krueger-Tuncer [1982]. which examines the effect of protection on productivity, while examples of the latter include Nishimizu-Robinson [1984] and World Bank [1993]. Most of these studies have found that trade liberalization improved productivity, but the relationship between the two was not robust. Further, existing studies have focussed mainly on the impact of trade liberalization on productivity growth, but there have been very few studies which have examined the effect of FDI liberalization on productivity growth.

The impact on productivity of foreign trade and FDI liberalization by Asian countries has been examined at the overall macroeconomic level across countries as well as at the industry level for individual countries. The paper by Kawai (1998) has examined the relationship between trade policies and growth in TFP by using data covering not only developing countries in Asia and in Latin America but also OECD countries. The result of the analysis indicated that trade liberalization generally leads to productivity growth with a possible exception in the case of low-income countries. Specifically, using the magnitude of the contribution of export expansion to GDP growth and that of import substitution to GDP as proxies for trade liberalization, the analysis found that export expansion in most cases increased TFP growth, as expected, while import substitution resulted in reduction of TFP growth, for countries whose income level exceeds U.S. $2,000, or middle and high-income countries. Indeed, import substitution was shown to leads to increased TFP growth for low-income countries. This finding is important as it indicates that import protection appears to improve productivity for low-income countries, providing evidence to support the validity of the infant-industry protection argument. But once the countries reached the level of middle-income countries, import liberalization was found to improve productivity. Levy (1994) concludes that foreign buyers and traders are among the most important sources of technological information and support for small and medium size enterprises. Foreign customers transmit critical information about improvements in processing or products from other suppliers in industrial countries. This view is echoed in Hobday's (1995) analysis of the Taiwanese latecomers in technology-intensive industries. These firms develop the skills needed to exploit foreign channels of technology, using export-market demand to focus technology investments and thus, achieve lower costs and higher quality. Perkins (1996) finds that export oriented enterprises in China

had higher total productivity growth than non-export oriented ones. It is generally argued that new firms enter industry with the most modern technology, capital goods and modern management. Such firms are expected to be more efficient than traditional firms. The effect of age on efficiency has been documented for multinationals operating in electronics industry in Taiwan (Chen & Tang 1987) and weaving industry in Indonesia (Pitt & Lee 1981).

Import protection appears to improve productivity for low-income countries. But once the countries reached the level of middle-income, import liberalization was found to improve productivity.

There have been a number of Indian studies earlier on these aspects. Only some of the important studies are mentioned here. For example, the technical efficiency of firms has been analysed by Agarwal and Goldar (1992). The regression results revealed that the size of firm, retention ratio and intensity of foreign trade were major determinants of technical efficiency and possessed positive coefficients as expected. A study on export performance of firms by Aradhna Jain (1995) has concluded that both cost and technological factors affected export competitiveness of firms in a deregulated economy. Patibandla (1995) has studied the export performance of engineering firms and found export intensity to be inversely related to firm size and positively related to level of technical efficiency. Kumar and Sidharthan (1994) have studied the inter-firm variation in the export behaviour of 13 manufacturing industries and found the firm size-export performance relationship to be predominantly inverted U-shaped and technology factors important for explaining the export behaviour of developing country enterprises.

The Model

Determinants of Technical Efficiency

Factors determining TFP can be divided into two categories. One category includes those factors related to the industry environment in which a firm carries on production. These factors can be regarded as external to the firm. The other category of factors is related to the capabilities of the firm itself, and is internal to the firm, or firm-specific. Among the factors external to the firm, competitive pressure is the most important one influencing TFP. For a firm to survive in the midst of strong competitive pressure, it needs to develop new production technologies and/or make efficient use of the factors of production. Conversely, when competitive pressure is weak, there is no need to improve production efficiency. Competitive pressure from foreign competitors is brought in via imports, FDI and exports. If the inflow of products from overseas through imports is large, competitive pressure will be strong. The impact of technology import on productivity growth has been studied by several authors. Kanta Marwah and Klein (1998) and Kawai (1998) find FDI and technology import variables statistically significant possessing positive coefficients. The impact of FDI is captured here through foreign equity participation and the amount of dividend paid in foreign currency as a ratio of total equity dividend paid is used as a proxy for FDI. Regarding the impact of import of machinery and other capital equipment, it is supposed to bring about an improvement in production efficiency. As it is not easy to evaluate the quality of technology embodied in capital equipment, the ratio of imported machinery and capital goods to sales has been used as a proxy. It is expected that there will be a positive relationship between the imported-capital to sales ratio and the imported-intermediate raw materials and components to sales ratio on the one hand and TFP on the other hand.

It has been argued above that export oriented firms having good access to new knowledge and exports are likely to pick up other characteristics of the firms that are closely linked to technical efficiency. For instance, relative to domestic sales, exports are likely to be associated with higher scale economies, greater utilization of capacity, as well as greater exposure to competitive pressures in the international markets. Dollar (1992) uses exports as a proxy for the knowledge obtained from entering into international trade. Corden (1974) and Martin and Page (1987) have used exposure to foreign competition as a proxy for trade liberalisation and found it as an important determinant of technical efficiency.

Firm specific factors influencing production efficiency which need to be considered are such factors as a firm's ability to develop and improve technology (i.e., a firm's technological ability), and the quality and capability of the workers and equipment used in production. If the technological ability of firms is high, the possibility for technological progress will be high; if technological progress is achieved, the production efficiency of firms will improve. The factors include size and age of the firm, in-house R&D activities, vertical integration, energy intensity, welfare expenditure on employees and profitability/retention ratio. An empirical study on the determinants of technical efficiency of Indian engineering firms by Agarwal and Goldar (1992) has shown that R&D expenditure, size and retention ratio are important factors for raising production ef-

ficiency. In this analysis, however, we could not use R&D variable on account of data limitations. Energy variable is introduced here to capture the impact of production technology on the technical efficiency of firms. A firm using more energy intensive techniques of production is likely to be more efficient than a labour intensive one, provided that the energy has been used judiciously and the degree of capacity utilisation is high. Otherwise, non-optimal use of energy can lower the efficiency of firm. In the absence of sufficient literature about this variable, we assume that this variable has a positive impact on the technical efficiency of a firm, that is, optimal use of energy intensive mode of production is likely to improve technical efficiency. Thus, energy intensive firms are expected to be more efficient compared to labour intensive ones. Similarly, employee's welfare oriented management is likely to improve the morale of employees which, in turn, should improve the technical efficiency of firms. We have introduced two such firm specific factors to explain production efficiency. These are energy intensity and proportion of expenses on welfare of employees in the value of production. They are expected to have positive coefficients in the regression equation. When economies of scale exist, the increase in TFP does not necessarily indicate technological progress alone. It is also a reflection of the improvement in production efficiency due to economies of scale. Moreover, it has been found in a number of empirical studies that an increase in production brings about a rise in productivity (relationship is known an "Verdoorn's law"). The benefit from economies of scale is realized either when the market size expands or when firm size increases. Diversification into multi products and higher levels of vertical integration can also help firms to achieve higher levels of technical efficiency through economies of scale and scope. However, labour market imperfections and organisational complexities might be a source of disadvantage to large firms in realising optimum technical efficiency (Patibandla 1998). Thus, the final impact of size on technical efficiency depends upon the relative advantage of economies of scale production over the disadvantage of organisational inefficiency of large firms.

Market structure may also affect technical efficiency. Industries with comparative advantage are expected to benefit from trade liberalization and conversely, comparatively disadvantageous industries are expected to lose. As a result, capital and labour tend to shift from the latter to the former, making the former's market more competitive. Therefore, firms with comparative advantage (i.e., labour-intensive) are expected to be more efficient (Perkins 1996). For this purpose, the labour-capital ration (L/K) has been selected as an explanatory variable. Summing up, it can be concluded that technical efficiency may be improved by generating competitive pressure through the import of technology, foreign direct investment, and exports and also by adopting firm specific factors like large scale production, energy intensive technology, labour welfare, labour-capital ratio, age and vertical integration. Thus, the equation is specified as follows:

Technical efficiency may be improved by generating competitive pressure through the import of technology, foreign direct investment, and exports and also by adopting firm specific factors like large scale production, energy intensive technology, labour welfare, labour-capital ratio, and vertical integration.

$$TE = f(\underset{+}{MT1}, \underset{+}{MT2}, \underset{+}{XI}, \underset{+}{ENI}, \underset{+}{LW}, \underset{+/-}{LKR}, \underset{+/-}{FS}, \underset{+}{FEP}, \underset{--}{AGE}, \underset{+/-}{VI}) \quad (1)$$

Determinants of Export Intensity

The modern theory of trade suggests that economic reforms and globalisation may confer competitive advantage on firms and hence improve their export performance. As explained the degree of globalisation of firms helps them in improving their technical efficiency. The impact of economic reforms is also captured here through the import of intermediate goods as raw materials and components as well as foreign equity participation. Alternatively, cost differences among firms mainly due to technical efficiency, economies of scale and capital intensity etc. may be the major determinants of variation in the export performance of firms (Jain 1995, Patibandla 1995). The entry of new firms and new marketing expenses may also effect exports. Export intensity equation is specified as follows:

$$XI = f(\underset{+}{TE}, \underset{+}{AD}, \underset{+/--}{FS}, \underset{+/--}{AGE}, \underset{+}{FEP}, \underset{+}{MRM}) \quad (2)$$

Notations of Variables

MT1: technology imports intensity (imports of technology against royalty, lumpsum payments, etc.). MT2, technology import intensity (through the import of capital goods), GR: growth rate, XI: export intensity, PR: profitability (profit margin), AGE: age of firm (in terms of age of machinery), FS: firm size (in terms of capital assets), FEP: extent of foreign equity participation, TE: technical efficiency (index), AD: advertisement intensity, VI: vertical integration, LKR: labour-capital ratio, LEV: leverage ratio, INTR: interest rate, ENI: energy intensity, LW: labour welfare expenditure ratio, and MRM: raw materials import intensity (including stores).

Sources of Data

The basic source of data for this study is the Reserve Bank of India (RBI). The data are at company level and cover medium and large public limited companies for the years 1992-3 to 1994-5. This yielded 434 observations for the years 1992-3 to 1994-5. There is a considerable inter-firm variation in size which may cause problems in the econometric analysis because the behaviour of large engineering firms may be quite different from that of relatively small engineering firms. To take care of these problems and to ensure a greater homogeneity among firms included in the analysis, a cut-off criterion of Rs 10 crore in total assets was adopted, i.e. only firms above this level of total capital assets were included. With this criterion, 330 observations are used for the analysis.

Measurement of Variables

As noted, besides the two key endogenous variables or performance indicators, there are several other independent variables used in the regression equations. The measurement of variables is as follows.

Technology import intensity MT_1 (expenditure on technology imports against royalty, lumpsum payments, etc. as a ratio to sales), capital goods import intensity MT_2 (import of capital goods and machinery as a ratio to sales), growth rate of sales GR (compound growth rate computed from sales data for three-year periods), technology efficiency index TE (computed from an estimated frontier production function, provided in Table 1) , export intensity XL (exports to sales ratio), profitability PR (profits before tax to sales ratio), age of firm AGE (ratio of accumulated depreciation to value of fixed assets, taken as proxy), advertisement intensity AD (advertisement expenditure to sales ratio), degree of vertical integration VI (ratio of value added to output), extent of foreign equity participation FEP (measured by the ratio of dividend in foreign remittance to total dividends paid), leverage ratio LEV (computed as a ratio of borrowings to total capital employed), interest rate INTR (computed from borrowings and interest payments made), labour welfare expenditure ration LW (ratio of expenditure on labour welfare to total labour cost), firm size, FS (logarithm of total assets taken as a measure), energy intensity ENI (expenditure on power and fuel as a ratio to capital), and raw materials import intensity MRM (ratio of imported raw materials and stores to total value of raw materials and stores consumed).

To abstract from short-term fluctuations, three-year averages have been taken of all the variables used in the analysis, except for the growth rate of sales for which the growth is computed by comparing the first

Table 1

The present study, is concerned with the performance of engineering firms. One of the performance indicators chosen for the study is the technical efficiency of firms. Technical inefficiency refers to the failure of the firm to achieve the maximum possible output for a given level of inputs. Hence, in the measurement of technical inefficiency, the basic problem is to estimate the optimum level of production for comparing it with the actual production of each firm. Most of the earlier studies have either applied a programming approach or an econometric estimation of the frontier production function for obtaining the level of efficient production. We have followed the latter approach for the simplicity of assumptions involved and flexibility about the distribution of error terms. Again, a number of earlier studies have used either the deterministic or composite error term stochastic frontier production function. We have followed corrected ordinary least square (COLS) method based on the deterministic production function. The latter approach is a little complicated and needs the method of maximum likelihood for estimation. We assume the error terms to follow a half-normal distribution. In the COLS method, the intercept term is corrected upwards by adding to the intercept term the expected value of the error terms that is E(U). Firm-specific efficiency index is obtained as the ratio of its observed output to the optimum output as determined by the frontier production function. Maximum efficiency is taken as 100 per cent.

Measurement of Technical Efficiency

A two-input-Cobb-Douglas production function has been used to estimate the optimal level of output. We tried three inputs (Labour, Capital and Energy) C.D. production function as well as trans-log production functions also. However, the results were not satisfactory. Regression results are as follows:

$$\log V = 1.226 + \underset{(15.50)}{0.573} \log K + \underset{(11.61)}{0.394} \log LB$$

$R^2 = 0.844 \qquad \sigma = 0.45394$

(Figures in parenthesis below the coefficients denote their t-values)

Definitions of Variables

The variable V denotes gross value added and is defined as the value of production minus cost of raw materials and components and other manufacturing expenses. Therefore, V (gross value added) = share of labour and capital plus profits in the value of productions.

LB denotes labour force employed by the firm and is measured by the wages and salaries plus other benefits paid to the employees in monetary terms.

K denotes flow of capital services and is measured as the sum of the given value of depreciation of capital stock and the cost of total capital assets. The latter component is obtained as the product of interest rate on total borrowings and the total assets of the company.

Thus, rate of interest = Total interest paid/Total borrowings
Total cost of capital = Interest rate * total assets
Flow of capital services (K) = Total cost of capital + provision for depreciation

As explained earlier, corrected ordinary least square method (COLS) has been adopted to compute the optimal level of output of the firm ($\log \hat{} v$) and where $\log \hat{} v = \log v + E(u)$

$$E(U) = \sqrt{\frac{2}{\pi}} \cdot \sigma$$

σ denotes the standard deviation of residuals, $\sqrt{\frac{2}{\pi}} = 0.798$

Error! Switch argument not specified.
Technical Efficiency = exp (log v - log ^v)
Maximum efficiency is taken as one.

and last year of the three-year period.

It was realised that the type of products produced by various engineering firms differ considerably (from road rollers to electric motors and personal computers). The diversity in goods produced can influence the performance of firms and this needs to be incorporated in the econometric analysis. While it is not possible to take care of product diversity completely, two dummy variables for industry (category of engineering products produced) have been included in the regression equations to allow for inter-industry differences.

Estimation Method

Since the performance variables viz. technical efficiency and export intensity are hypothesised as interdependent, the Ordinary Least Squares (OLS) estimates will be biased. To take care of the problem of simultaneity, the regression equations have been estimated by the 2SLS method.

Regression Results

The study methodology is presented in Table 1. Regression results are presented in Table 2. The estimated equations for technical efficiency show that foreign equity participation, export intensity, and technology imports are statistically significant determinants of efficiency. All these variables have a positive effect on technical efficiency as expected. Our results support the earlier findings by Krueger and Tuncer (1982), Corden (1974), Martin and Page (1987), Nishimizu and Page (1991), and Patibandla (1998). Size and vertical integration are also found to possess positive coefficients. Our results support the earlier results of Gorden (1974), Rodrik (1988) but are contrary to the results obtained by Lall (1987), and Patibandla (1998). Energy intensity is found to possess a positive coefficient as expected. A negative relationship is indicated between technical efficiency and age of the firm implying that the new firms are comparatively more technically efficient. This result supports the earlier findings of Chen and Tang (1987) and Pitt and Lee (1981). Export intensity is found to be explained by technical efficiency, advertisement expenditures and the intensity of raw material imports. They have positive coefficients as expected. Our results support the findings of Aradhna Jain (1995) and Patibandla (1995). This proves that technical efficiency and export intensity influence each other.

Conclusions & Policy Implications

The regression results clearly point out that the competitive pressure generated by liberalisation of economic policies and globalisation through the import of technology, foreign direct investment and exports has helped in improving the technical efficiency of firms. Firm specific factors like firm size, energy intensity and age are also found important. New firms with modern imported technology and management and international connections are found to be more efficient than the older ones. Vertical integration has also helped in improving technical efficiency. Dummy variables are found statistically significant implying that there are significant differences in technical efficiency between the three

Table 2: Regression Results (Based on 2SLS Method)

Dependent Variable	Technical Efficiency	Exports Intensity
Technology imports	4.486* (1.83)	
Export intensity	2.420*** (2.46)	
Technical efficiency		0.112*** (2.59)
Energy intensity	0.062*** (3.03)	
Labour welfare	–0.312 (–1.41)	
Labour intensity	–0.003 (–0.30)	
Firm size	0.042*** (4.21)	–0.003 (–0.49)
Age	–0.238*** (–3.56)	–0.014 (–0.37)
Foreign equity participation	0.242*** (2.46)	–0.16 (0.28)
Vertical integration	0.281*** (2.73)	
Raw material import intensity		0.096** (2.09)
Advertisement intensity		1.271 (1.74)
Industry dum 1	0.108*** (3.52)	–0.008 (–0.46)
Industry dum 2	0.110*** (4.38)	–0.026 (–1.68)
R bar^2	0.35	0.30

Notes: Number of Observations: 330 (three-year average).
Level of statistical significance: *10 per cent; **5 per cent; *** 1 per cent.

Competitive pressure generated by liberalisation of economic policies and globalisation through the import of technology, foreign direct investment and exports has helped in improving the technical efficiency of firms. Firm specific factors like the firm size, energy intensity and age are also found important.

major segments of the engineering industry. Export intensity is found to have improved with improvement in technical efficiency and marketing efforts through advertisement etc. However, foreign investment has, so far, not proved useful in promoting exports. Perhaps, it takes some time to improve image and make a mark in international markets. The results further support the hypothesis of interrelationship between technical efficiency and export intensity.

This study has shown that technical efficiency has been higher for new firms who have imported modern technology and have export orientation. With economic reforms since 1991 there is a change in the objective of technology import from diversification and growth to technical efficiency improvement. Thus, the large firms in the industry should be encouraged, on an increasing scale, for tie ups with the foreign multinationals so as to bring modern technology and modern management techniques which in turn will increase technical efficiency, reduce the cost of production, and improve the quality of products.

Again, it is well known that export growth is essential for macroeconomic stability, sustainable economic growth, and development in any economy. The study has revealed that export intensity depends mainly on technical efficiency, import of raw materials and components, and marketing intensity. Hence, import policy should be liberalised further to increase/encourage import of technology, raw materials and components, particularly in industries which have export potential. Also, marketing expenditure should be treated as an essential component of production cost and not a wasteful expenditure.

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The increase in productivity has been caused primarily by the replacement of labor by planning, brawn by brain, sweat by knowledge.

– Peter F. Drucker

Feature

Foreign Direct Investment Flows to India & Export Competitiveness

Veena Pailwar

Inspite of the various incentives provided by the Indian government to promote FDI flows and exports, export intensity of FDI companies has remained low in the last decade. The paper highlights the deficiencies of the existing promotion measures.

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Capital formation plays an important role in the process of development. However, in the initial level of development, developing countries are unable to generate sufficient resources over and above their consumption requirement and therefore the level of investment remains low in these countries. To overcome the vicious circle of low capital formation and low growth, developing countries seek to look for help from external sources. Foreign capital, especially foreign direct investment, by supplementing internal resources fills the resource gap of developing countries. However, even when internal resources are sufficient for the development needs of a country, foreign capital becomes essential as improved machinery and technology and imported raw material can only be bought by paying in terms of foreign exchange. Thus besides filling the resource gap, foreign capital also fills the foreign exchange gap of developing countries.

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FDI & Development

FDI flows along with improved technology brings in with it improved managerial skills and opens up new marketing channels for developing countries. Therefore, one of the important reasons for inviting flow of foreign capital, especially foreign direct investment, is its supposedly higher capital productivity (Output to Capital ratio) and export intensity (Exports to Output ratio). In the context of India, policy makers and economists are arguing in favour of achieving and maintaining growth rates of 7 to 8 per cent p.a. Even 7 per cent growth rate would require capital formation to be at least 30 per cent of GDP. Existing resources (saving) of the country

Export intensity is not only low but also differs

Growth rate of exports of FDI companies has declined.

export intensity. The export intensity of FDI flows from Switzerland and Germany though low has improved in the recent years. The main reason for low export intensity of FDI flows from Germany and USA as emerged from studies conducted by Kebschull (1995) and Saquib (1995) is the existence of vast Indian market. The FDI flows from these countries get attracted to India basical-

are much lower than this requirement (around 24 per cent of GDP). Additional resources need to be generated by bringing more foreign direct investment as other forms of resources such as debt financing and deficit financing are not sustainable in the long run.

Realizing the benefits of FDI flows in the development process of the country, the government of India has adopted various structural reform measures and

Table 1: Sectorwise Breakup of Foreign Direct Investment Approved during the Period 1/8/1991 to 31/8/2000.

(Amount in Million)

Name of Industry	Amount of FDI Approved	% to Total Amount
Metallurgical Industries	143295.94	6.14
Fuels	671918.76	28.77
Boilers and Steam Generating Plants	1466.61	0.06

ly because of the existence of large potential market for various goods. The increased production of FDI companies seems to have been absorbed by domestic consumers (The larger inflow of FDI in Food Processing Industries as reflected in Table 1 substantiates this observation). Another reason for low export intensity of these companies is the higher cost of production in India that reduces the export competitiveness of these FDI companies in the global market. The high unit cost has been attributed to the high rate of import and excise duties, lack of proper infrastructure, absence of exit policies, low productivity of labour, rigid labour laws, bureaucratic hurdles, etc. (Chawla (1999), Sharma, Nair & Barman (1999)).

The problem is accentuated further by the high and differing import intensity of exports (Import to Export ratio) across sectors and sources (Tables 5 and 6). The traditional sectors are not only high in export intensity but also low in import intensity of exports. On the other hand modern sectors suffer from low export intensity and high import intensity of exports. Even if productivity of capital and export intensity of capital may be high, these may not be very desirable if the import intensity of these is higher than the export intensity. The highly import intensive foreign capital rather than solving the problem of foreign exchange and the current account may in fact worsen the situation by deteriorating the current account of balance of payment. The point has been raised by Goldar & Ishigami (1999), Siddharthan (1999), Pailwar (2000).

Table 5: Import Intensity of Exports: By Sectors

(per cent)

Industry	1993-94	1994-95	1995-96	1996-97
Engineering	125.3	175.0	231.5	356.4
Chemicals	154.8	139.5	197.2	179.7
Tea	0.9	2.8	4.7	1.0
Trading	5.2	4.8	940.4	732.5
All Textiles	47.9	60.4	44.9	38.3
Rubber	166.1	208.4	142.5	71.2

Source: Same as above

The net foreign exchange earnings of these companies is not only low on account of high import content but even repatriation of capital in the form of dividend and royalty payments reduces the foreign exchange earnings. As pointed out by Babu (1999), firms often in order to boost the export of their products enter into foreign collaboration and acquire expensive foreign technology which leads to outflow of foreign exchange through dividends and royalties and technical know how fees. Access to foreign capital and easy imports of capital goods further increases the outflow of foreign exchange. Therefore while assessing the export performance of FDI companies one needs to analyze their net foreign exchange earnings rather than just gross exports earnings.

Table 6: Import Intensity of Exports: By Country

(per cent)

Country	1993-94	1994-95	1995-96	1996-97
UK	42.4	68.0	69.3	83.0
USA	142.0	171.2	190.0	160.4
Germany	133.4	152.9	149.2	143.4
Switzerland	200.1	175.1	138.4	96.7
Japan	126.4	177.9	164.6	169.5
Sweden	258.1	350.7	304.0	283.2
Netherlands	–	–	283.6	213.4
Mauritius	–	–	111.4	58.0
All Companies	80.6	107.5	139.1	177.0

Source: Same as above

Therefore productivity, export intensity and import intensity of the Indian companies in general and the FDI companies in particular have to be tested in a systematic way in the Indian case. This kind of analysis is essential to filter out the low export intensive sources and destinations of FDI flows. The net export intensity of the FDI flows may not be high in the short run, due to the existence of vast domestic market for various products. It has to be analysed whether the FDI flows have increased productivity if at all. Productivity is one of the important factors determining the export intensity and export competitiveness of FDI flows in the long run.

Factors Affecting Export Competitiveness

Existing literature points out that export competitiveness, in general, is affected by both external and internal factors, macroeconomic and microeconomic factors. External factors (external demand conditions, international quality standards, volatility and dynamism of the overseas markets, etc.) are beyond the control of domestic agents and parties. Internal macroeconomic factors basically consist of macroeconomic environment, which is determined by the fiscal, financial, trade and exchange rate policies. As pointed out by Gokarn (1999), cumulative effect of the macro factors is represented by the movement of the Real Effective Exchange Rate (REER). On the other hand, the macroeconomic factors are collectively represented by the notion of unit cost (Gokarn (1999)).

Macro economic factors represented by the REER are the nominal exchange rate, domestic inflation and inflation rate in all the trading partner countries. The domestic government via fiscal, financial and exchange rate policies can control the first two of these factors. Therefore, the challenge for the government at the macro level is to maintain the REER to the level that is conducive to export growth. Fiscal correction and development of financial markets, especially the securities market, assume importance in maintaining the REER.

Macro economic factors represented by the Real Effective Exchange Rate (REER) are the nominal exchange rate, domestic inflation and inflation rate in trading partner countries. The challenge for the government at the macro level is to maintain the REER to the level that is conducive to export growth. Fiscal correction and development of financial markets, assume importance.

Microeconomic factors (factors specific to each industry) represented by the unit cost of production, on the other hand, are determined by the wage cost, material cost, interest rate, tax structure, etc. Trade, industrial, taxation, credit and labour policies basically influence cost of production at the unit level, by influencing availability of infrastructure facilities, scale of production, market size, competition and knowledge (technology, information, experience, training and exchange of these aspects among the units of production). Therefore challenge before the government is to formulate these policies in such a way that they do not distort the resource allocation process at the microeconomic level. Beside the price factors, non-price factors such as quality and size of products, timely delivery, packaging, brand image creation, etc. determine export competitiveness of products at the micro level. These price factors can be very well affected by managerial and marketing strategies, control of market channels, R&D expenditure to invent and innovate new products, labour training, access to international sources of raw materials, etc.

Deficiencies in Existing Export Promotion Measures

In the 90's, the Government of India had initiated various liberalization and structural reform measures to increase the competitiveness of Indian production in general and export competitiveness in particular. Rather than piecemeal, haphazard and discrete promotion measures, characteristics of the pre 1991 period, the Government of India is following a more systematic export promotion approach in the aftermath of balance of payment crisis of 1991-92. The thrust areas of the export promotion policies in the post 1991 period have been exchange rate management, reduction in tariff and non tariff barriers, direct export incentives such as duty exemption scheme, export promotion of capital goods scheme, special import licenses, setting up of various types of technology parks, export processing zones and special economic zones with special incentives to units in these zones and various tax exemption schemes. As a part of the systematic export promotion approach, the government has also identified 34 extreme focus products and had also identified top 100 Indian Export Oriented Corporations for evolving their own corporate export plans. The specification of 15×15 Export Product Market Matrix was with the view to promote export in the specified products and markets. The Ministry of commerce has also come out with the Medium Term Export Strategy Document in 1997.

However, inspite of the initiation and implementation of all these measures on various fronts, the effect of these measures seems not to have percolated down to the grass root level. The export intensity and competitiveness of Indian companies in general and FDI companies in particular have remained low. It has been noticed that the periods of exports boom are preceded by depreciation of the Indian Rupee. Depreciation of currency promotes exports of commodities from the home country by lowering their price for foreigners. Similarly various fiscal and financial incentives provided to domestic and foreign companies have resulted in increase in exports for a short period of time. However, the export growth could not be sustained for a long period of time on the basis of these incentives, as these measures do not address the fundamental problem of low industrial productivity which weakens the competitiveness of Indian goods in international market. Export competitiveness could be sustained only by strengthening the fundamentals of the economy. The physical,

Export competitiveness could be sustained only by strengthening the fundamentals of the economy. The physical, financial, institutional and social infrastructure, technological improvements, labour productivity, quality of products, managerial and marketing skills, freedom in decision making, etc. are important factors augmenting and strengthening an economy and creating conducive environment for exports.

financial, institutional and social infrastructure, technological improvements, labour productivity, quality of products, managerial and marketing skills, freedom in decision making, etc. are some of the important factors augmenting and strengthening the fundamentals of an economy and creating conducive environment for exports.

Establishment of Export Processing Zones was supposed to increase the inflow of FDI in these areas and boost the export of the country. However inspite of their long existence in India, the export performance of these zones is not very satisfactory (Refer to Table 7). These zones have also not been able to attract much of FDI. Only 1/4th of the total units in these zones had foreign equity and foreign collaboration.

Table 7: Export Growth of Export Processing Zones

(Rs. in Million)

Year	No. of units in EPZ	Exports	Share in country exports (in per cent)
1992-93	440	1376.31	2.56
1993-94	478	1959.91	2.81
1994-96	500	2653.11	3.21
1995-96	511	3235.63	3.04
1996-97	526	4338.92	3.65
1997-98		4817.92	3.70
1998-99		5252.48	3.71

Source: GOI, Ministry of Commerce, Annual Reports (Various Issues)

Until the 90's, these units were burdened with multiplicity of objectives. The authorities did not have much clear idea about the objective behind setting up these establishments. The first Export Processing Zone was established in India in Kandala in 1965 with the objective of regional development. Though by the end of the 80's the Ministry of Commerce could specify the main objectives behind the establishment of these zones, the performance is not satisfactory. Unsuitable location of the zones, small size of location, limited number of zones, centralized management, multiplicity of authorities dealing with the management, lack of freedom in decision making, lack of promotional measures etc. have limited the flow of FDI in these zones (Kundra (1999)). Poor physical, financial and institutional infrastructure, policy of reservation for Small Scale Units, absence of backward linkages with the rest of the economy, complex and irksome regulations, high tariff rates and taxation etc. are the basic reasons for the unsatisfactory export performance and high import intensity of the units. Lack of involvement of the State/Regional governments in the development of these zones is also one of the deterrents for the growth of these zones in the country.

The recent EXIM policy aims at introducing Special Economic Zones (SEZs) in India following the Chinese SEZ model. However the proposed SEZ are inherently similar in nature as the existing Export Processing Zones. In the absence of infrastructural facilities, freedom in the management of day to day activities, freedom in formation of own labour policies, liberal exit policies and the presence of strict reservation policies, introduction of SEZ would just create multiplication of schemes without substantially adding anything. With the structural problems remaining in place, SEZs and EPZs remain just meaningless semantics.

Other devices such as identification of the top 100 dynamic Indian large corporations has also not helped much as these corporation have not been able to strategically tie up with the MNCs with the aim of export promotion. Identification of the 34 extreme focus products and specification of 15×15 Export Product Market Matrix has also remained a statistical exercise and lacks analytical contents. The matrix remains static in nature and does not get evolved with the changing nature of the global economic environment. Though large amount of FDI has entered the economy, it has not been able to create brand image for Indian products in overseas markets.

FDI companies are basically catering to the domestic markets because of the high protection and high profitability of domestic sales. Highly profitable domestic market is also one of the reasons for the lack of competition in the economy and thus results in the inertia on the part of FDI companies to actively formulate an export promoting strategy. Insufficient expenditure on R&D by the FDI companies for inventing and innovating new products is also the outcome of lack of competition. Complex government policies, rules and regulations still significantly affect transaction costs. Poor infrastructure facilities like poor maintenance of roads, ports and airports, telephone lines, railway wagons etc. not only further enhance the transaction cost but also delay delivery of products. These factors hinder the process of creating good image about Indian suppliers and Indian products in overseas market.

Policy Measures: Some Suggestions

It clearly emerges that lack of comprehensive and consistent FDI and export promotion policies, tight bureaucratic control and delays in implementation of the various schemes, high cost of production inspite of cheap labour, rigid labour laws, non existence of suffi-

cient backward linkages, reservation of various commodities for the small scale sector, poor physical, financial and institutional infrastructure, lack of investment in the R&D activities etc. are hindering the growth of exports of FDI companies from the country. To promote FDI flows to the country, and to enhance their export intensity and reduce import intensity, India needs a consistent, coherent and comprehensive long term export promotion strategy.

As a part of this long-term strategy, the government needs to provide conducive working environment for FDI companies. The market determined process of resource allocation rather than the centralized system would provide FDI companies the much needed freedom in their day to day activities. Reduction in multiplicity of permission granting and licensing authorities would reduce bureaucratic delays, harassment and corruption. The government needs to restrict its involvement in activities providing basic physical, financial and institutional infrastructure for FDI companies. Besides reducing transactional cost and hence the unit cost of production, better infrastructure helps in meeting delivery schedules. These factors enhance export competitiveness in global markets.

Beside the physical infrastructure, social infrastructure is equally important. MNCs usually give large weightage to the social environment of a country while investing. Recreation and entertainment avenues meeting the standards of the life style of the officials of MNCs create favourable environment for FDI companies.

For strengthening of competitiveness, it is essential that FDI companies create brand image for the goods produced in India by improving the quality of goods as well as the quality of labeling and packaging. FDI companies may be encouraged to improve the quality by providing them incentives for investing more resources in R&D activities. Higher incremental tax incentives may be granted for plugging back the dividend, interest and royalty income in R&D activities. These measures would not only improve the quality of Indian products but also reduce the outflow of foreign exchange from the country. This way the net foreign earnings of FDI companies may be enhanced.

For reducing the import intensity of FDI companies, it is essential to build up strong backward linkages of these companies with the rest of the economy, by encouraging them to outsource their products and meet raw material requirement from domestic markets. Building strong backward linkages may require de- reservation of goods for the small-scale sector. Dereserving and opening up of traditional areas for the FDI would make possible the adoption of advanced technologies to the labour intensive domestic environment. Besides reducing import intensity, these measures would also create more employment opportunities in the domestic economy. Measures to remove restrictions from the outsourcing of products from the Export Processing Zones are essential as there are restrictions on the free flow of goods to and from these areas to the Domestic Tariff Areas.

Another import measure, is to link tax incentives to the rate of export performance. Rather than having a flat slab of tax concession, incremental slabs of incentives varying with the degree of export achievements may be introduced. Even the granting of various preferential statuses may be linked to the varying growth rates and levels of exports in a given period of time.

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In India, state governments are found to be lax in promoting exports from their regions as various export incentives reduce the amount of tax revenues flowing to them. Due to vastness of the country and differing regional environment, it is essential that the state governments are actively involved in export promotion measures. Central government may encourage participation of State governments by granting central assistance to states for provision of better infrastructure in their regions for FDI companies. It is also essential to link central assistance to export performance of various states.

Central government may think of granting more autonomy to states for issuing licences for imports and exports for FDI companies. This would not only encourage state participation but would also reduce implementation delays for FDI companies.

It is essential that underdeveloped, resource scarce country like India adopts and implements concepts like export processing zones, free trade zones and special economic zones. For the effective working of these zones, it is essential that these zones are provided with free market environment and the much- needed freedom for independent management and production decisions. Creation of market determined mechanism requires elimination of administrative control, relaxation of labour norms and policies, liberalization of exit norms

in these zones, elimination of entry restrictions on goods from and to the domestic tariff areas, dereservation of items for small scale industries. The various zones need to have clear objectives of export promotion and need to be created in suitable locations with good infrastructure and other support services. Export promotion zones created with objectives of regional development in the backward areas would not be able to achieve export promotion objective.

There is requirement for continuous study of the changing and evolving nature of external markets for various goods. These studies may be able to provide ideas about the changing tastes of global consumers and products may then be designed and created in accordance with the revealed preference of consumers in external markets. Continuous studies aiming at external demand assessment may be encouraged by FDI companies by providing higher incremental tax incentives on amount of expenditure incurred on these studies.

For development of comprehensive export strategy, it is essential that the government also carry out regular studies identifying various highly competitive sectors of economy. The statistical exercises for identification of the products and markets have to be supplemented by analytical studies so as to ascertain identity of export growth areas in the continuously changing dynamic economies world over.

For identifying export oriented sectors in the long run in the continuously changing overseas market, the efforts of FDI companies may be supported by comprehensive, continuous socio-economic analysis by the government. The relevant information may be disseminated through speedier informational infrastructure.

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Vital to every operation is cooperation.

– Frank Tyger

Feature

Trade for India's Industrialization: Policies & Options

Bhaskar Majumder

This paper narrates the switching over of India's trade policies from Import-Substituting Industrialization (ISI) to Export-Oriented Industrialization (EOI) and Open Door Industrialization. Continuation of the colonial division of labour, reflected in her product structure, has kept Indian trade structure inefficient. What is needed for a large economy like India, the paper suggests, is development of national power through development of technology internally. Planning has to allow time and offer incentives to national laboratories to promote research based on national priorities in investment and output. India can have her own options, as noted in the paper, to select her own priorities to execute and participate in the global market accordingly.

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If industrialization of a national economy is accepted as a goal, then the contexts for analyzing that goal are many. Most of the factors and forces that constitute those contexts are also well debated. One such context is the market. The market context for industrialization of any national economy may be analyzed from two sides, the home market and the world market. Because of the operations of the Transnational Corporations (TNCs), such a division may be confusing. Still for a national economy such a division of markets will be more helpful than considering market as a single indivisible category. One of the reasons for accepting this division of a single market into two compartments is to study implications and suggest policy prescriptions at the national level. If we consider mainly the world market for industrialization in a national economy, we should take into account major variables like production on a world scale, foreign investment, trade and trade-related links with the rest of the world. The strategies to ensure industrialization as a goal are linked with the context in which the issue is set. These strategies may be inward looking or outward looking. In reality, an economy always adopts a blend of these two, the reason being the intervention by extra-market institution. Actually, the twin strategies show a seesaw balance for an economy.

The strategies to ensure industrialization as a goal are linked with the context in which the issue is set.

This paper, concentrates on the trade context for India's industrialization. The trade context is seen in terms of trade policies and trade-related measures. The Government of India (GOI) is responsible for regulating trade through its Acts adopted from time to time. The Indian economy followed a policy of import substituting

industrialisation (ISI) up to the mid-1960s. The course of the economy had been redirected towards an export-oriented industrialization (EOI) strategy following the crises in the economy and the halting of an uninterrupted process of five-year planning since mid-1960s.

ISI Strategy: Root, Rationale & Assessment

Root of ISI

In post-independent India, import substitution as a strategy for industrialization came to be incorporated in the Second Five-Year Plan model developed by Mahalanobis. The Second Plan stressed the need of establishing and expanding basic industries to manufacture heavy machinery. The Plan recognized India's dependence on imports of capital goods as a fundamental structural weakness and stressed on production of investment goods with the help of machinery manufactured out of the domestic resources. The Plan assumed that a steady supply of capital goods produced internally would make India increasingly independent of imports and would strengthen India's position in World market (Bose & Mukherjee, 1985). This was the basic idea behind the import substituting industrialization.

The Plan assumed that a steady supply of capital goods produced internally would make India increasingly independent of imports and would strengthen India's position in World market.

Rationale of ISI

ISI strategy aimed at, among others, expanding the size of home market and reducing dependence on foreign markets for final commodities. It aimed at allowing infant industries to grow and be able ultimately to compete in the international market, allowing infant and indigenous technology to develop. It pleaded for restricting higher-order commodities and technologies in-use in DMEs (Developed market economies) flood the economy since these are intended to serve only the top minority. It also aimed at generating employment of manpower and hence expansion of home market along with less skewed distribution of market power, checking income distribution from being more skewed. This strategy seemed to be a rational choice since it is generally not possible to promote exports at an early stage of development. Rather a process of learning by doing through substitution of imports could pave the path for export promotion at a later stage.

A process of learning by doing through substitution of imports could pave the path for export promotion at a later stage.

The feasibility of this ISI strategy relied on a political feasibility where Parliamentary Democracy is thought to be in keeping with ISI led national sell reliance. The feasibility of this strategy also relied on an economic feasibility, where the economy by size of population and natural resource base helped adoption of such a policy. An international power-centric feasibility of the ISI strategy meant adoption of an independent policy through exercise of power by the nation state.

The ISI strategy is alleged to be autarkic in character (Bhagwati & Desai, 1970). This is because during the pre-1966 Indian trade regime 'the industrial targets were supported by the quantitative restrictions which shielded domestic production automatically from foreign competition' (Bhagwati & Desai, 1970). The idea behind the ISI was, however, different. It was a time-phasing one. It was supposed that import-substituting industrialization in certain basic sectors of the economy would pave the way for export promotion efforts over a sufficiently broad base over time (Chakravarty, 1978).

Assessment of ISI

The objective conditions for adoption of a trade regime based on import substitution were based on an adverse trade balance during the planning era, 1951-66, and a scarcity of foreign exchange reserves (Tables 1 and 2). However, ISI seemed to have failed since the trade balance over successive plans of the planning era became more adverse for the economy of India. The foreign exchange scarcity eased a little during the first half of the 1960s relative to that during the first decade of planning. Also, the post-1966 period showed reduced import-availability ratio for all the categories of industries by use-based and input-based classification (Ahluwalia, 1985). Rather than depending on import of foodgrains, the Indian economy came to depend on import of agricultural inputs like fertilizers and tractors. It was not until 1961 that indigenous manufacturing units started producing tractors in India. We find declining import-availability ratio for tractors during the Third Plan period (GOI, 1983-84, NCAER, 1980). These reducing import-availability ratios went parallel with high and accelerating industrial growth during the three Plans of the import substitution era (Shetty, 1978, Chandrasekhar, 1988). The import availability ratio for capital goods was as high as 44.0 in 1959-60. This declined to 36.4 in 1965-

Table 1: India's Trade Balance, 1950-1997, Selected Years

Year	Trade Balance (Rs. in Crore)
1950-51	–2
1960-61	–480
1970-71	–99
1980-81	–5838
1990-91	–10645
1991-92	–3810
1992-93	–9687
1993-94	–3350
1994-95	–7297
1995-96	–16325
1996-97	–20103

Note: Trade Balance = Exports (including re-exports)-Imports

Source: Government of India, Ministry of Finance, Economic Survey, 1998-99, p. S-81.

Table 2: India's Foreign Exchange Reserves, 1950-1997, Selected Years

Year	Total Reserves (Gold + SDR + Foreign Exchange) (Rs. in Crore)
1950-51	1029.2
1960-61	303.6
1970-71	732.3
1980-81	5544.4
1990-91	11416.4
1991-92	23850.1
1992-93	30744.7
1993-94	60420.4
1994-95	79780.2
1995-96	74384.6
1996-97	94931.6

Source: Government of India, Ministry of Finance, Economic Survey, 1998-99, p. S-69.

66. A structural composition of imports of consumer goods in terms of necessities and luxuries reveals a higher import content for luxuries during the early 1960s (Bagchi, 1970). Also, while it happened to be relatively easy to reduce imports of consumer goods as percentage of total imports, it became relatively difficult to reduce 'maintenance imports' like iron and steel, fertilizers, POL (Petrol, oil and lubricants) etc. and imports of capital goods. The latter in fact rose sharply (NCAER, 1967). The weak base of India's industrial sector at the beginning is also clear from her product-basket. The pattern of industrial production during pre-1966 period shows rapid increase in luxury items like air conditioners, refrigerators and passenger cars and slow expansion in mass consumer goods like kerosene, soap, sugar, cotton piece goods etc. (Dasgupta, 1970, p. 217). The weak base of India's industrial sector during the ISI regime in fact can be understood in terms of dependence on import of technology, import of capital goods, and narrow mass market.

The weak base of India's industrial sector at the beginning is clear from her product-basket. The pattern shows rapid increase in luxury items and slow expansion in mass consumer goods

EOI Strategy: Root & Rationale

The apparent failure of the ISI regime led to the adoption of an export-oriented industrialization (EOI) strategy. The EOI strategy spanned over the period 1966 to 1990. The year 1966 is a turning point for India's industrialization when the Government relaxed quantitative restrictions on imports following devaluation of the Rupee in June (GOI, 1970). The Reserve Bank of India (RBI) during the 1970s stressed on import-led export promotion (RBI, 1973-74, RBI, 1975-76, RBI, 1978-79). During the same period, the Planning Commission, GOI, announced import substitution and export promotion as complementary objectives (GOI, 1974, Vol. 1, GOI, 1981). The Seventh Plan (1985-90) stressed on 'export earnings' as a means of sustaining sufficient and uninterrupted supplies of imported inputs for activating idle capacity, and of exposing industry increasingly to the world market (GOI, 1985, Vol. 1). In 1981, a Memorandum seeking loans submitted by the GOI to the IMF expressed the intention to promote exports and liberalize imports (Government of West Bengal, 1981). The assessment made by the IMF staff confirmed the Government's pledge for acceptance of export promotion and import liberalization (Government of West Bengal, 1981). The Import and Export Policy, 1985-1988, sought to strengthen the base for export production, to facilitate liberal import of development inputs and to promote efficient import substitution (Foreign Trade Review, 1985).

A shift in trade strategy from ISI to EOI was based on a shift from dependence on home market to dependence on the world market. The past-1966 excess capacity in capital goods sector associated with the pre-1966 capital goods based heavy industrialization strategy created surplus. Export-promoting path could be a 'vent-for-surplus'. In this process, home firms could

be encouraged to allocate resources more efficiently in sectors producing export goods, when the export sector industries faced competition from abroad. Pre-1966 quantitative controls led to the protection of domestic industries irrespective of cost structure, in turn, leading to inefficient import substitution (Bhagwati, 1968, p. 55). 'Import inflexibility' of certain commodities eg. POL (Petrol, Oil & Lubricants), fertilizers etc. meant for India a continuous depletion of foreign exchange reserves. This was supposed to be compensated by promotion of exports. This argument is nothing but the 'export capacity to import'. Export promotion was expected to result in comparative (cost) advantage for the economy in factor endowments and hence in commodity production (Bhagwati, 1968). The expected favourable effects of EOI strategy may be attributed not only to the application of economies of scale or the 'stimulating effects of foreign competition', but also to limiting quantitative restrictions, thus eliminating distortions in the instruments of incentives-disincentives in economic activities (Krueger, 1978). Social benefit from export promotion may be supposed to exceed social cost from protection to domestic industries (World Bank, 1987). A direct relationship between export promotion and higher saving was expected 'either because the propensity to save is higher in the export sector than elsewhere or because government savings rely heavily on taxes on foreign trade' (Maizels, 1968).

'Import inflexibility' of certain commodities was supposed to be compensated by promotion of exports. This argument is nothing but the 'export capacity to import'.

Structure of India's Exports, Export Promotion Measures & Viability of EOI Strategy

The major commodities accounting for half or more of pre-1996 Indian exports were jute, tea, cotton textiles and raw cotton, and manufactured leather (Table 3). During the years immediately following devaluation in 1966 we find the same group dominance of traditional items like jute, tea etc. relative to non-traditional items like iron and steel, engineering goods etc. There emerged, however, non-traditional items like engineering goods as budding export earners, particularly during the Fourth Plan period (Varma, 1976). During the 1970s and the early 1980s the relative weights of non-traditional items like engineering goods increased in India's export basket. A declining share of two traditional items, jute and tea, together with increasing share of many non-traditional items in India's exports during 1970s and early 1980s imply a diversifying export basket and not an expanding export frontier (Table 4). The imports of machinery and transport equipment as a ratio of total imports remained higher than the exports of the same as a ratio of total exports. The possibility of long-term export success of capital goods for India thus remains doubtful (Table 5).

Table 3: India's Export Earnings from Principal Commodities, 1951-1966 (As Percentage of Total Exports)

Plans	Jute Manufacturers	Tea	Principal Commodities
First Plan	24.35	17.92	58.84
Second Plan	18.95	21.31	55.55
Third Plan	21.56	16.07	49.31

Note: 'Major Commodities' includes Jute Manufacturers, Tea, Cotton Textiles, Manufactured Leather, Raw Cotton.

Source: Bhagwati, J. & Srinivasan, T.N. 1975, 'Foreign Trade Regimes and Economic Development India, NBER, Oxford and IBH Publishing Co., p. 56; Nayyar, D., 1976. 'India's Exports and Export Policies in the 1960s, Cambridge University Press, p. 20, 23.

Table 4: India's Export Earnings from Principal Commodities as Percentage of Total Exports, 1972-1982

Year	Jute Manufacturers	Tea	Principal Commodities
1972-73	12.78	7.47	51.99
1973-74	9.01	5.78	46.95
1974-75	8.92	6.85	42.46
1975-76	6.23	5.88	39.62
1976-77	3.91	5.69	38.73
1977-78	4.53	10.53	47.37
1978-79	2.04	5.95	43.79
1979-80	5.70	5.73	45.49
1980-81	4.92	6.34	44.43
1981-82	3.30	5.06	42.79

Note: 'Principal Commodities' includes Jute Manufacturers, Tea, Cotton Textiles, Leather & Leather Manufactures, Tobacco Unmanufactured, Gems and Jewellery, Iron Ore, Machinery & Transport Equipment.

Source: Government of India, 1984. Ministry of Commerce, Report of the Committee on Trade Policies, December, pp. 102-103.

Aimed at export promotion, the GOI adopted devaluation as a major instrument since 1966. The rupee-dollar relative value i.e., the number of units of rupee currency relative to dollar currency was stable during the first three decades of India's development. It took more than thirty years for this relative value to reach 6:1 in 1980-81. It took a further ten years to reach

18:1 in 1990-91 and it took less than five years to reach 33:1 in 1995-96 (CMIE, 1996, July). The relative value moved from 34.24 in April 1996 to 35.87 in March 1997 and steeply came to be 40.36 by January 16, 1998 (GOI, 1997-98). The GOI also offered export assistance through Duty Drawback (DD) and Market Development Assistance (MDA) particularly for non-traditional items.

Table 5: India's Imports and Exports of Machinery and Transport Equipment as Percentage of their Respective Totals, 1972-1982

Year	M_T/M	X_T/X
1972-73	28.49	4.29
1973-74	22.05	4.69
1974-75	15.39	6.47
1975-76	17.79	6.45
1976-77	20.65	5.88
1977-78	18.44	6.23
1978-79	18.49	6.97
1979-80	15.12	6.99
1980-81	14.51	7.84
1981-82	14.55	7.91

Note: M = Total Imports; X = Total Exports

M_r = Imports of Machinery and Transport Equipment

X_r = Exports of Machinery and Transport Equipment

Source: Government of India, 1984, Ministry of Commerce, Report of the Committee on Trade Policies, pp. 102-103, 115.

Generally, the high share of DMEs (Developed Market Economies) in world exports leaves little room for TWCs (Third World Countries) to promote their share. India's exports as a percentage of world exports experienced long-term decline (Table 6). The commodity-specific stagnant or falling share of Indian exports as percentage of world exports holds good for non-traditional items for which huge export assistance was provided. Indian exports as a percentage of exports from developing countries also declined during 1973-83. While during 1973-83 world exports grew at a rate of 12.2 per cent per annum, exports from developing countries grew at a rate of 15.2 per cent and exports from India at a rate of 9.8 per cent (Varshney, 1985). The better export performance by the developing countries during this period might be an offshoot of their better growth rates attained during the 1970s and oil price hike (Patel, 1985, Varma, 1985, Varshney, 1985). However, the consequence will show sharp difference when these TWCs are considered separately as oil exporting and oil importing. For example, for an oil-importing country like India, there came increasing pressure on scarce foreign exchange reserves via huge expenditure on oil imports demand for oil (Table 7). In essence, the choice and success of EOI strategy depend more on the global order in which a developing country like India is set than

The high share of DMEs (Developed Market Economies) in world exports leaves little room for TWCs (Third World Countries) to promote their share.

The choice and success of EOI strategy depend more on the global order in which a developing country like India is set than on the economic incentives offered to the product-specific potential and actual exporters.

Table 6: India's Exports as Percentage of World Export, 1950- 1996, Selected Years

Year	1950-51	1960-61	1970-71	1980-81	1990-91
Percentage	2.05	1.04	0.64	0.42	0.53
Year	1991-92	1992-93	1993-94	1994-95	1995-96
Percentage	0.51	0.51	0.61	0.64	0.80

Source: CMIE, 1996, Foreign Trade Statistics of India, May, p. 2.

Table 7: India's Expenditure on Imports of Petrol, Oil and Lubricants, 1970-1998 (Expressed as Percentage of India's Total Imports and Total Exports)

Year	As Percentage of Total Imports	As percentage of Total Exports
1970-71	8.32	8.85
1980-81	41.95	78.43
1985-86	25.38	45.79
1990-91	25,05	33.24
1991-92	27.42	29.79
1992-93	27.05	31.93
1993-94	24.68	25.87
1994-95	20.70	22.53
1995-96	20.51	23.67
1996-97	25.64	29.98
1997-98	20.15	24.18

Source: Government of India, Ministry of Finance, Economic Survey, 1983-84, pp. 142-145

Government of India, Ministry of Finance, Economic Survey, 1987- 88, pp. S-72 to S-75

Government of India, Ministry of Finance, Economic Survey, 1989- 90, p. S-74 to S-77

Government of India, Ministry of Finance, Economic Survey, 1998- 99, p. S-85, S-89.

on the economic incentives offered to the product-specific potential and actual exporters.

Increasing import expenditure, particularly on oil, machinery and transport equipment, as a percentage of total export earnings during the late seventies and eighties implies increasing cost of a capital-cum-fuel-intensive process of development for India. The implication is, if India can not control oil price and can not shed her dependence on repetitive imports of technologies-cum-capital goods, she has to divert the path of development towards capital-cum-energy saving and/or capital-cum-energy generating resources. The world market question for a national economy thus boils down to the development question in its totality.

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New Economic Policy (NEP) or ODI Strategy: Root & Rationale

Background of NEP

The Indian economy experienced exhausting export revenue because of her huge import bill on POL, and machinery during the 1970s and the 1980s. The trade balance remained adverse. Foreign exchange reserves position became precarious during the 1980s. There came a loss in international confidence as reflected in an outflow of overseas funds held in India particularly from non-resident Indians who withdrew a total of US 1.3 billion NRI deposits between Oct. 1990 and April 1991 (Currie, 1996). Not only did India's exports to DMEs decline steadily during the first four decades of development but more alarming was the falling percentage of India's exports as a share in exports from the developing countries. For example, during 1973-83, India's exports as percentage of exports from developing countries declined from 2.63 to 1.64 (Varshney, 1985).

NEP: The Policy

The New Economic Policy (NEP), 1991 declared by the GOI in June, accepted the principle of Open Door industrialization (ODI) backed by the free play of market forces (GOI, 1991). The package of trade policy reforms announced on July 4, 1991 aimed at access to high technology and world markets. The reforms aimed at 'strengthening export incentives, eliminating a substantial volume of import licensing and optimal import compression in view of the balance of payments situation. Essential imports of sensitive items such as Petrol, Oil and Lubricants (POL) and fertilizers were fully protected, but other imports of raw materials and components were linked to export performance' (GOI, 1991 p. 24). The NEP pledged 'abolition of phased manufacturing programme' or abolition of any attempt to force the pace of 'indigenization in manufacturing which eliminates any need for enforcing 'local content requirements'. The NEP also aimed at reducing the 'interference' of the government in matters related to import of technologies by Indian firms, particularly in high technology and high investment priority industries (GOI, 1991, p. 3-4). The reforms initiated in accordance with these policy objectives 'aimed at creating a less regulated and more market-oriented economy' which is expected to offer 'economic benefits both for India's trading partners and for the domestic economy' (GATT, 1993, Vol. 1, p. 8).

NEP: The Follow up Measures

Following NEP, the GOI introduced a Liberalized Exchange Rate Management System (LERMS) that aimed at 'eliminating licensing control and allowing the exchange rate to reflect the scarcity of foreign exchange' (GOI, 1992-93, p. 12). Under LERMS, a dual exchange rate system, introduced in the Budget for 1992-93, 'import restrictions on capital goods, raw materials and components (were) virtually eliminated' (GOI, 1992-93, p. 104). In fact, since NEP, 1991, 'control on export has been liberalized to the extent that now all goods may be exported without any restriction except the few items mentioned in the negative list of exports. The items in the negative list are regulated because of strategic considerations, environmental and ecological grounds, essential domestic requirements, employment generation, and on grounds of socio-cultural heritage' (GOI, 1995-96 p. 110).

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EXIM Policy 1992-97

The EXIM Policy (1992-97) aimed at promoting exports of sectors where India had comparative advantage. The Policy allowed 'export oriented units engaged in agriculture and allied activities to avail of duty-free capital goods imports under the EOU/EPZ Scheme even if they export only 50 per cent of their output' (GOI, 1993-94, p. 87). These policy changes initiated by the GOI during the 1990s reflect a 'shift from a foreign exchange constrained control regime to a more open, market-driven liberalized economy' (GOI, 1994-95, p. 84). India became a founder member of the World Trade Organisation (WTO) in 1994. The provisions in WTO became operational in January 1995 and since March 1995 the GOI reviewed and revised the EXIM Policy 1992-97. 'In accordance with the terms of the General Agreement on Tariffs and Trade, a country is required to lift quantitative restrictions on imports for balance of payment reasons when the position improves' (GOI, 1996-97, p. 89). As the position of foreign exchange reserves becomes comfortable, India can phase out quantitative restrictions in respect of all items' (GOI, 1996-97, p. 89). To phase out quantitative restrictions in keeping with EXIM Policy, 1992-97. '40 items were removed from the negative list and made freely importable and 14 others shifted to SIL (Special Import License) on 21st August, 1996' (GOI, 1996-97, p. 89). The announcement of the EXIM Policy for 1992-97 in March 1992 accelerated India's transition towards a globally oriented economy. The strategy was stimulating exports and facilitating imports of essential inputs as well as capital goods (GOI, 1995-96).

EXIM Policy 1997-2002

The EXIM Policy, 1997-2002, formulated in April, 1997, and revised in April 1998, directed shifting a number of items from the negative/restricted list of OGL (Open General License) and hence allowing their free imports. The April 1998 EXIM Policy delicenced 340 items of import by moving them from the restricted list to OGL. To promote exports this Policy extended tax holiday for EOU/EPZ to ten years and also permitted setting up of private software Technology Parks (Foreign Trade Review, 1999). This on-going EXIM Policy pledges to carry forward the ambition of enhancing 'export competitiveness by simplifying procedures, minimizing transaction costs and delays and improving the attractiveness of various schemes' (GOI, 1997-98, p. 84). The NEP, 1991, and post-NEP changes in trade policies thus reveal an import liberalizing-cum-export-promoting or what we call an ODI strategy.

The ODI strategy that the GOI has been following since NEP, 1991, depended on import liberalization supported by export promotion at least to maintain the capacity to import. The rationale for import liberalization is that if output produced at home fails to satisfy home demand, then the gap has to be met by imports. This is 'make or buy' hypothesis of import liberalization. Export promotion as a corollary to import liberalization can be phased alternatively as 'import led growth led export'. Success of such a strategy depends on the nature of imports, the extent of product-specific capacity creation and utilization, the nature of home market vis-a-vis the possibility of 'vent-for-surplus'.

Options for India's Trade-linked Industrialization

The basic rationale behind the adoption of ISI at the initial stage of industrialization is expansion of the size of home market. This depends not only on the supply-side by establishment of basic industries and machine-making industries but also on the demand-side by generation of labour employment. The second one requires selection of appropriate techniques and technology once the product-set is decided. While the first one, namely the supply-side was taken care of in India's ISI, the second one remained ignored. Supply of the same commodities through replacement of imports could not create its own demand automatically. Even if it could create some demand initially, it could not be sustained because of the limited expansionary character of the type of demand generated. One of the consequences was the emergence of excess capacity in the capital goods sector. Instead of going into the roots of the problems thus generated, it came to be identified with the exhaustion of import substitution. Actually, it was exhaustion of the possibilities of import substitution from the supply-side. In fact, the exhaustive symptom of the era of ISI was evident from the very inception of the strategy. On the one hand, the organized private sector as well as the private managers in Public Sector Enterprises (PSEs) used the import restriction regime in their favour to strengthen their prevailing oligopolistic pattern of business, thereby restricting the possibility of home market expansion. On the other hand, the gradual entry of TNCs (Transnational Corporations) through their subsidiaries and taking help of indigenous capitalists as collaborators used the quantitative restrictions regime to perpetuate dependence on DMEs for technology and capital goods. The weak home capitalists depended on the use of imported technologies in a ready-made profit-guaranteed collusive oligopolistic market. The government that allowed entry of higher-order technologies backed this. While there was scope for India for application of economies of scale in production of commodities and moving from low-tech labour-intensive to high-tech capital-cum-research-intensive technologies, in reality this scope was not realized. The logic of economic development as

professed by Mahalanobis in the 1950s was implemented half-heartedly, so that when capital goods production was assigned to the public sector, R&D were ignored totally. This is obvious from repetitive import of technologies from abroad. An exhaustion of the process of ISI is not an argument against import substitution, it is an argument against the nature of commodity production – its inability to expand the home market and this inability is organically related to demand.

While there was scope for India for application of economies of scale in production of commodities and moving from low-tech labour-intensive to high-tech capital-cum-research-intensive technologies, in reality this scope was not realized.

If a process of industrialization goes in parallel with skewed distribution of resources and industrial oligopoly to perpetuate a product-cum-technology structure meant to satisfy a narrow market, a trade regime can not be efficient. Rather than trying to solve the problems inherent in ISI there came a switching of trade strategy to outward-looking EOI and ultimately to ODI. Leaving the ISI led neither to eliminating adverse trade balance nor to reducing external indebtedness for the economy of India. The whole question of restructuring demand in association with rearranging product-cum-technology ordering as an integral part of industrialization remained unaddressed.

The option for India's trade-linked industrialization is really a compulsion. It is a compulsion to build national power. For an economy like India national power may be built by, among others, the following measures:

- Being independent of foreign supplies of food, and the essential input package that determines food production; imposition of ceilings on food exports
- Maintaining strength of state-owned enterprises, particularly by concentrating state control over core industries like atomic energy, coal, oil, and steel
- Raising investment in infrastructure like transport and communication
- Forming manpower that rests on educational planning, both formal and informal
- Expanding information-based service sector that can not only absorb people moving from agriculture, through appropriate training but can also maintain input-output information link between sectors that produce material commodities and also maintain links between producers and consumers worldwide
- Promoting internal export through public intervention
- Developing institutions for documenting indigenous knowledge
- A state committed to judicious public investment in economic and social infrastructure.

The supporting option for India's trade-linked industrialization rests on forming product-specific cartels with neighbours, e.g. jute, with Bangladesh, marine products, with Bangladesh, Pakistan and Sri Lanka etc. The path for India's development of national power has to follow an approach that is incremental and independent but not autarkic. Let us explain what we mean by such a path.

For a small country (poor resource base by nature and size of population), premature exposure to international competition often becomes a compulsion unless such countries become 'clients' or 'dependent allies' of industrialized countries. For a large economy like India, there is no need to expose herself prematurely to international competition. The need is to develop technology internally, thereby allowing time and offering incentives to national laboratories and research personnel to promote technologies appropriate for national interest. This includes recognition of indigenous knowledge that are mostly absent in written documents that are used as base by the policy-makers. A significant portion of this indigenous knowledge goes in the form of oral tradition. Collection and use of oral tradition based indigenous knowledge requires development of institutions. The location of these institutions should be near the space where it is available, probably the rural India. What happened was that the privileged consumers and producers at home remained reluctant to surrender consumption and production of high-tech commodities. The output priority in the national economy remained minority-centered. The task is to make it mass-centered. This is where the state has to accept its positive role.

The output priority in the national economy remained minority-centered. The task is to make it mass-centered. This is where the state has to accept its positive role.

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Feature

Forestry & Non-forestry Sectors in India: Aggregate Flows & Linkages

N.V. Namboodiri & S.R. Asokan

The study examines the production linkages between forestry and non-forestry sectors in India. It was found that the relative share as well as absolute contribution of forestry sector in national income has declined. Value of output from the sector in real terms has come down. Demand for input by other sectors has been low but the demand by forestry sector from the rest has shown an upward trend. These findings indicate the need for not only proper management of forestry resources but also appropriate institutional arrangements for integrating forest production and its utilisation.

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In developed economies growth impulses are transmitted with ease between various economic sectors due to strong intersectoral linkages. But in less developed economies, they are found to be very weak. Strong linkages between economic sectors ensure better growth as they depend on each other for their intermediate consumption. Strong forward linkage of one sector with another results in increased demand for its output for intermediate use by the other. This induces development of both the sectors. Similarly, by backward linkage the growth of input supplied to a given sector by the other stimulates growth in both sectors. These intersectoral interactions, their strength as well as linkage patterns are important indicators for determining the nature and pattern of growth of a given economic sector. Many linkage patterns could be identified from the interdependence between various sectors namely production, saving and investments, consumption, employment, and foreign sector linkages. However the scope of this study is confined to only production linkage. This has been examined for forestry and non- forestry sectors.

Intersectoral interactions, their strength as well as linkage patterns are important indicators for determining the nature and pattern of growth of a given economic sector.

Forests are important assets of a country's wealth that provide renewable raw materials for a wide range of industries. India accounts for a mere 2 per cent of the world's total land area, 1 per cent of its forests and a minuscule 0.5 per cent of the pasture lands. Yet the country sustains 18 per cent of the world population and 15 per cent of its livestock. Although forest area in India accounts for around 20 per cent of the geographical area, forests with good tree coverage are merely

11.7 per cent (S.K. Pande, 1997). However, 50 to 60 million people in the country rely on forests for their livelihood.

Forests produce a very wide range of products, both consumption goods and intermediate goods to many other sectors of the economy. India's forests annually provide 40 per cent of the country's energy needs, 250 million tons of green grass and fodder, 12 million cubic meters of timber, thousands of tons of non timber produce (NTFPs). The demand for forest products sharply rises with economic growth (Westoby, 1987). Therefore forestry plays a significant role in the growth of an economy particularly that of developing countries. The major challenge of these economies is how to harness forest resources efficiently and in a sustainable manner.

The main objective of this study is to examine the production linkage between forestry and non-forestry sectors. Prior to it, how important is forestry sector in various state economies as well as in the national economy is examined. Major sources of data for this study are from National Accounts Statistics and Input-Output Tables published by the Central Statistical Organisation.

Share of Forestry Sector in Net State Domestic Product

The share of forestry and logging in net domestic product has declined from 2.56 per cent during triennium ending 1982-83 to 1.31 per cent during triennium ending 1995-96 (Table 1). In all states except Nagaland and Rajasthan, the share of forestry and logging in net state domestic product has declined and they were significant in Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Orissa and Tripura. Net domestic product in real terms grew at the rate of 5.06 per cent for the period 1980-81 to 1995-96. Except for Jammu and Kashmir, the growth rate was well over 3 per cent. It was as high as 11.14 per cent for Sikkim and 8.84 per cent for Arunachal Pradesh. However, there was negative growth rate for the value added from forestry and logging, that is –0.19 per cent for the country. The rate of growth was negative in 11 out of 23 states studied here. In fact in six states, namely, Jammu and Kashmir, Kerala, Madhya Pradesh, Sikkim, Tripura and Uttar Pradesh, the decline in net value added from forestry and logging was by more than 5 per cent.

The share of forestry and logging may have declined due to increased contribution from other sectors to the net domestic product, i.e. the relative share of forestry and logging may be declining. The negative growth rate in net value added from forestry and logging is another factor that has contributed to the decline in the relative share of forestry in total net domestic product.

Table 1: Net State Domestic Product Originating from Forestry Sector in Various States

State	Share of Forestry and Logging In Net State Domestic Product during triennium ending 1982-83	Share of Forestry and Logging In Net State Domestic Product during triennium ending 1995-96	Rate at 1980-81 Prices (1980-81 to 1995-96)	
			Net Value Added from forestry & logging	Net State Domestic Product
	Percent	Percent	Annual Compound Growth	
Andhra Pradesh	0.95	0.61	1.89	4.05
Arunachal Pradesh	11.86	10.45	7.26	8.84
Assam	2.28	1.20	–2.24	3.33
Bihar	2.33	2.17	2.38	3.28
Gujarat	1.79	0.89	–024	5.23
Haryana	0.35	0.24	3.00	5.86
Himachal Pradesh	12.40	7.81	1.37	4.92
Jammu and Kashmir	8.53	1.13	–13.53	2.54
Karnataka	1.64	0.73	–1.08	5.35
Kerala	2.49	0.66	–5.73	4.36
Madhya Pradesh	8.09	1.30	–8.94	4.36
Maharastra	2.42	1.20	1.59	6.72
Manipur	2.40	2.25	0.39	4.95
Meghalaya	2.02	1.01	1.61	4.87
Nagaland	7.04	8.41	10.26	7.43
Orissa	5.18	2.00	–3.81	3.45
Punjab	0.94	0.52	0.17	5.02
Rajasthan	0.73	1.67	17.21	6.20
Sikkim	0.70	0.19	–5.92	11.14
Tamil Nadu	0.25	0.54	16.18	5.65
Tripura	8.36	1.56	–7.35	6.29
Uttar Pradesh	1.77	0.33	–8.55	4.21
West Bengal	1.16	0.53	–0.98	5.01
All India*	2.56	1.31	–0.19	5.06

*Based on All India Net Domestic Product

Source: Derived from National Accounts Statistics of India, EPW Foundation, Mumbai, 1997

The value of output from forestry measured in real terms during the triennium 1995-96 compared to 1982-83 (Table 2) was marginally lower with an annual compound growth rate of –0.23 per cent. This could be mainly attributed to the decline in the supply of in-

dustrial wood. The value of industrial wood in real terms has declined from Rs. 896.3 crores to Rs. 409.3 crores resulting to a negative growth of 5.85 per cent annum. On the contrary the value of output of firewood and minor forest produce registered positive growth rates but was meagre at 1.35 per cent and 0.19 per cent respectively. One of the major reasons for the poor performance in the supply of forest products is poor management of forest resources. This is because of the fact that the forestry had a better rate of growth in net capital stock compared to rest of the economy. The annual rate of growth of net capital stock in real terms in the forestry sector between 1980-81 and 1995-96 was at 5.51 per cent per annum as against 5 per cent for the whole economy. Moreover the share of net capital stock in the forestry sector to net capital stock in the whole economy has improved marginally.

One of the major reasons for poor supply of forest products is bad management of forest resources.

Table 2: Value of Output and Net Value Added from Forestry Sector

(Rs. Crores in 1980-81 prices)

Item	Triennium Ending 1982-83	Triennium Ending 1995-96	Annual Compound Growth Rate (%)
Value of Output	3334.0 (100)	3236.3 (100)	-0.23
a. Industrial Wood	896.3 (26.9)	409.3 (12.6)	-5.85
b. Fire Wood	1983.7 (59.5)	2361.7 (73.0)	1.35
c. Minor Forest Products	454.0 (13.6)	465.3 (14.4)	0.19
Net Value Added	2962.0	2833.3	-0.34
Share of Forestry Sector in total NDP	2.56	1.29	-5.13

Note: Growth rate are calculated based on end point data.

Figures in bracket are percentage to total value of output.

Source: Derived from National Accounts Statistics, Central Statistical Organisation, Govt. of India.

Flow of Output from Forestry to various Sectors

The relative strength of interaction between various sectors could be seen from the disposal of intermediate output from one sector to the other. Forest product flows to a wide range of manufacturing industries and major amongst them are wood products and furniture, beverage and tobacco, paper and paper products. The manufacturing industries' share in total intermediate use of the forestry sector has improved significantly between 1973-74 and 1989-90 (Table 3). The share of manufacturing industries in total intermediate sale of forestry sector has gone up from just over 41 per cent during 1973-74 to 70 per cent in 1989-90. As of 1989-90, wood products and furniture alone accounted for about 32 per cent of the intermediate sale from the forestry sector. The other major manufacturing sectors who use forestry output for their intermediate consumption are beverage and tobacco, paper and paper products, each with a share of around 10 per cent. In nominal terms the total intermediate sale from forestry sector has gone up from Rs. 180 crores during 1973-74 to Rs. 2175 crores in 1989-90. Another notable feature was the decline in relative share of construction sector in total intermediate sale of the forestry sector from 60 per cent in 1973-74 to 28 per cent in 1989-90.

Table 3: Flow of Output From Forestry to other Sectors at current prices

(Rs. Lakhs)

Item	1973-74	1983-84	1989-90
Food Processing	1455 (3.35)	2860 (1.42)	5626 (1.81)
Beverage and Tobacco	100 (0.23)	210 (0.10)	33739 (10.85)
Textiles	376 (0.87)	836 (0.41)	4104 (1.32)
Wood Products and Furniture	7568 (17.42)	101546 (50.35)	99649 (32.04)
Paper and Paper products	1992 (4.59)	8577 (4.25)	33573 (10.79)
Drugs	2090 (4.81)	5148 (2.55)	24855 (7.99)
Machinery and Equipment	1539 (3.54)	3789 (1.88)	4048 (1.30)
Other Manufacturing	2827 (6.51)	10695 (5.30)	11909 (3.83)
Sub-total	17947 (41.32)	133661 (66.27)	217503 (69.93)
Construction	25476 (58.66)	59805 (29.65)	87576 (28.16)
Other Services	9 (0.02)	8223 (4.08)	5938 (1.91)
Sub-total	25485 (58.68)	68028 (33.73)	91514 (30.07)
Total Intermediate Use	43432 (100)	201689 (100)	311017 (100)
Export	783	7917	6230
Import	271	1975	40162
Total Final Use	10368	242157	558182
Total Output	53801	443845	869200

Note: Figures in brackets are percentage to total intermediate use

Source: Derived from Input-Output Transaction Table: 1973-74, 1983-84 and 1989-90, Central Statistical Organisation, Government of India, New Delhi.

Flow of Inputs from various Sectors to Forestry Sector

Unlike other sectors, the flow of inputs to forestry sector from the rest is very meagre due to the basic nature of this industry. In other words non-forestry sectors' intermediate sale to forestry sector was considerably low compared to forestry sectors' intermediate sale to non-forestry sector. Yet the input demanded by the forestry sector from the rest showed an upward trend. For example in 1973-74 the total inputs at factor cost in nominal value was Rs. 19 crores and it rose to Rs. 808 crores by 1989-90 (Table 4). The share of manufacturing sector in total intermediate sale to forestry sector was about one-third. In the tertiary sector the dominant ones with significant contribution to forestry sectors' intermediate use were trade and transport. However there was no systematic trend in the relative shares of various sectors supplying inputs to the forestry sector during the three points of time covered here.

Table 4: Flow of Inputs to Forestry Sector from other Sectors at current prices

(Rs. Lakhs)

Particulars	1973-74	1983-84	1989-90
Textiles Paper and Paper products	268 (14.38)	1281 (3.24)	9249 (11.45)
Petroleum Plastic Products etc.	125 (6.71)	4286 (10.83)	9018 (11.16)
Machinery Equipment etc.	202 (10.84)	359 (0.91)	1173 (1.45)
Other Manufacturing	158 (8.48)	4409 (11.14)	10086 (12.49)
Total Manufacturing	753 (40.40)	10335 (26.12)	29526 (36.55)
Construction	272 (14.59)	1782 (4.50)	11432 (14.15)
Electricity Gas Water Supply	25 (1.34)	243 (0.61)	756 (0.94)
Transport	421 (22.59)	16702 (42.21)	9200 (11.39)
Communication	56 (3.00)	686 (1.73)	1688 (2.09)
Trade Hotel and Restaurant	137 (7.35)	1767 (4.47)	8888 (11.00)
Other Services	200 (10.73)	8056 (20.36)	19286 (23.88)
Construction & Services	1111 (59.60)	29236 (73.88)	51250 (63.45)
Total Inputs at Factor Cost	1864 (100)	39571 (100)	80776 (100)
Gross Value Added	240495	399782	781826
Gross Output	53801	443845	869200

Note: Figures in brackets are percentage to total inputs at factor cost

Source: Same as in Table 3.

Aggregate Flows & Linkages

The interdependence of production activities arises from the fact that each sector demands input for one or more production activities. A sector is linked with another sector that supplies inputs to it (backward linkage) and also those using its output as their inputs (forward linkage). The forward linkage of forestry sector gets stronger when there is large demand for forestry products by non-forestry sectors for their intermediate use. The backward linkage becomes stronger when forestry demands more inputs and services from the non-forestry sectors.

The aggregate flows from forestry sector to non-forestry sector merely shows the actual interaction among them but not their relative strength. Forestry sector output as percentage of non-forestry sector output was just over 1 per cent in 1989-90 (Table 5). The intermediate sales of the forestry sector to non-forestry sector output has declined from 1.3 per cent during 1973-74 to 0.85 per cent during 1989-90. Forestry sector's intermediate sales as per cent of forestry sector output have also declined since 1973-74. It declined from 80.7 per cent in 1973-74 to 45.4 per cent in 1983-84 and further declined to 35.8 per cent in 1989-90. This is as opposed to an upward trend in the non- forestry sector's intermediate sale to their total output from 37.3 per cent in 1973-74 to 46.3 per cent in 1989-90. Therefore the performance in terms of flow of output from forestry sector to other sectors for intermediate consumption was poor in comparison with that of the non-forestry sector. This could be better understood from the linkage coefficients discussed below.

We have measured the forward linkage by using two concepts. First it is measured in terms of the intermediate sale of forestry sector as a percentage of its output. This has declined substantially from over 80.3 per cent during 1973-74 to 45.5 per cent during 1983-84 and further to 35 per cent in 1989-90. Similarly the forward linkage measured in terms of intermediate sale of forestry sector as per cent of non-forestry sector inputs also experienced a decline. This was roughly 1.27 per cent during 1973-74 and declined to 0.82 per cent in 1989-90. Therefore it is evident that forestry's forward linkage with the non-forestry sector has weakened during the period of study. Two concepts were used to measure the backward linkage. First the backward linkage was measured in terms of total purchase of forestry sector from non-forestry sector as per cent of non- forestry sector output. This has improved from 0.02 during 1973- 74 to 0.09 per cent in 1989-90. Secondly the backward linkage measured in terms of total purchase of forestry sector from non- forestry sector as per cent of forestry sector output has also improved from

Table 5: Gross Flows and Linkages between Forestry and Non-Forestry Sectors

(per cent)

Item	1973-74	1983-84	1989-90
Aggregate Flows: Forestry Sector to Non-forestry Sector[1]			
Forestry sector output to non-forestry sector output	0.59	1.27	1.09
Forestry sector intermediate sales to non-forestry sector intermediate sales	1.29	1.31	0.85
Forestry sector intermediate sales to forestry sector output	80.72	45.44	35.78
Non-forestry sector intermediate sales to non-forestry sector total output	37.29	43.98	46.27
Forestry Sector's Forward Linkage			
Total intermediate sale of forestry sector to non-forestry sector as per cent of forestry sector output	80.32	45.25	35.05
Total intermediate sale of forestry sector to non-forestry sector as per cent of non-forestry sector input	1.27	1.29	0.82
Backward Linkage from Forestry Sector			
Total purchase of forestry sector from non-forestry sector as per cent of non-forestry sector output	0.02	0.11	0.09
Total purchase of forestry sector from non-forestry sector as per cent of forestry sector output	3.46	8.73	8.56

1. For more details on the computation of linkage coefficients see, Asian Development Bank, Rural Asia: Challenges and Opportunities, Federal Publications, Singapore. 1977

Source: Same as in table 3.

3.46 per cent in 1973-74 to 8.56 per cent in 1989-90. Thus there was an improvement in the backward linkage of forestry sector during the period of study.

Summary & Implications

There has been a decline in the share of forestry and logging in state net domestic product during mid-nineties compared to early eighties in all states except Nagaland and Rajasthan. Similarly the net value added from forestry has declined in 11 states and eventually there is a decline in net domestic product originating from the forestry sector. The decline in relative as well as absolute contribution of forestry sector in state/national

There has been a decline in the share of forestry in state net domestic product during mid-nineties which shows the failure of this sector to grow as compared to the rest of the economy.

income shows the failure of this sector to grow as compared to the rest of the economy which is of great concern. The value of output from the forestry sector in real terms has declined between early 1980s and mid-90s mainly due to the decline in the value of industrial wood supply. However the structural change in the composition of forestry output for intermediate use, viz., increased share of manufacturing industries in total intermediate use is encouraging. This would allow for better value addition and employment in the forestry based manufacturing industries. Forestry sectors' demand for input from other sectors has been very low but there has been an upward trend in input demanded by this sector in recent times. As a result its backward linkage has improved. On the contrary its forward linkage has weakened due to poor growth in supply of its output for intermediate use by other sectors. These findings recommend not only better management of forestry resources, but also for appropriate institutional arrangements for integrating forest production and its utilisation in a sustainable manner. Such measures could improve forestry sector's forward linkage and thereby create better growth in both forestry and non-forestry sectors that depend on it.

Better management of forestry resources, appropriate institutional arrangements for integrating forest production and its utilisation in a sustainable manner could improve forestry sector's forward linkage.

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Feature

Dynamics of Raw Jute Supply & Consumption

A.K. Parida & S. Pal

Owing to its biodegradability and eco-friendliness, jute is required in all sectors for various uses. So, both jute-production and jute-products require to be enhanced. To boost the production of raw-jute, the production technology is to be given attention in the agriculture sector. Study on the dynamics of supply and consumption of raw-jute in industries is of paramount importance. This study employs UBJ modelling on the historical data on the supply and consumption of raw-jute in the mills of India, to build forecasting models.

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Jute and mesta come next to cotton among the commercial fibre crops of India. Raw jute comprises the fibres of jute and mesta. This raw jute being of agricultural origin is bio-degradable and eco-friendly and is being used in industries for production of textile and non-textile products such as hessian, sack, carpet, yarn, paper etc. But production of raw jute in agriculture sector and also of raw jute products in the industrial sector has been affected due to various factors like crop diversification, limited land area, fluctuation in price of fibre and its products, introduction of synthetic fibres and technological problems in the industries. It has been reported in an indepth statistical study (Pal & Pal, 2000) on a number of facets of the dwindling fortune of jute, the golden fibre, that it has been slowly losing its glitter. To regulate and/or to enhance the production process in industries, knowledge on the dynamics of raw jute supply and of its consumption in mills is required to the planners. Thus, it is imperative to build up models on the variables, total raw jute supply and consumption in mills, which can reflect the mechanism of their dynamics over long time. In this context, this paper is an endeavour to model the two time series variables for acquiring knowledge of their generating processes and also to make short term forecasts which, ultimately, will govern the determinants of the national production policy and measures in the regard. The two time series variables have been subjected to the procedure of model building by employing the Univariate Box-Jenkins (UBJ) modelling methodologies. UBJ models are found to be superior to any other univariate time series models by virtue of their predictive power for forecasting the near future values.

To regulate and/or to enhance the production process in industries, knowledge on the dynamics of supply and consumption in mills is required.

Methodology

Firstly, data on the two time series variables – total raw-jute supply and raw-jute consumption in Indian mills for 43 conservative years (during 56-57 to 1998-99) were collected (Annual Summary of Jute and Gunny Statistics, 1987-88; Monthly summary of Jute and Gunny Statistics 1956-99). The data sets were subjected to analysis so as to evolve the best UBJ model, otherwise called Auto-regressive Integrated Moving average (ARIMA) models by employing the three-stage (identification, estimation and diagnostic checking) iterative procedure (Box & Jenkins, 1976) with the computational aid of advanced software SPSS 7.5.

Identification of Models

This stage of model building is most critical as most of the time series variables are found to be non-stationary with respect to mean and variance. To obtain the best model whose predictive power as well as the precision of forecasting are to be high, a non-stationary time series variable is made stationary by employing suitable transformations on it before subjecting it to ARIMA modelling (as ARIMA model demands stationarity of mean and variance of the time series). Power transformation (Box & Cox, 1964) is employed to make the time series variance stationary and thereafter successive differencing (Anderson, 1971) is employed to make it mean stationary. The stationary time series variable so obtained (after employing transformations) is then tested for normality (as errors in UBJ models should be normal) by using the quantile-quantile plot while the existence of dependence among the values of the series is detected through estimated autocorrelations. The orders of the autoregressive (AR) and moving average (MA) processes are, however, diagnosed by comparing the theoretical autocorrelation functions (ACF's) and partial autocorrelation functions (PACF's) with their respective estimated ACF's and PACF's.

Estimation of Parameters

UBJ model in represented by ARIMA (p, d, q), where 'p', 'd' and 'q' are the parameters ('p' - order of AR process, 'd' - order of differencing and 'q' - order of MA process). These parameters are estimated judiciously in the model building stage at which the model possesses a high predictive power and forecasts future values with high precision. The general form of this model is expressed as:

$$(1-\varphi_1 \beta-\varphi_2 \beta^2 - \ldots -\varphi_p \beta^p)\,(1-B)^d\, y_t = (1-\theta_1 \beta-\theta_2 \beta^2 - \ldots -\theta_q \beta^q)\, a_t$$

where, φ's and θ's are the AR and MA coefficients, 'B' is the backshift operator, y_t is the t^{th} observed time series value and a_t is the t^{th} white noise.

But, at the identification stage a best model cannot be screened out because a family of ARIMA models are evaluated (on a time series variable) with numerous AR and MA process orders which are doubtful. So, the optimum values of p, d, and q are obtained by employing the iterative finite-unconditional-least-squares method to the family of ARIMA models suspected at the identification stage. Each of p + q coefficients (in each ARIMA model belonging to the family) is estimated and then tested for its significance. Finally, these estimated coefficients are also checked as to whether they satisfy the stationarity (for AR coefficients) and invertibility (for MA coefficients) conditions. The estimated residual mean squares (RMS) and the mean absolute per cent errors (MAPE) for each model are then computed. MAPE measures the percentage of error present in the forecasting model and is computed as:

$$\text{MAPE} = 100 \times T^{-1} \Sigma \left| \hat{a}_t / y_t \right|$$

where,

y_t = observed time series value at time 't' for t = 1, 2.....T years.

T = number of years in the time series

$\hat{a}_t$ = estimated value of the white noise at time 't'

Some more statistics are computed, namely, the Log Likelihood (LL), Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC) and estimated correlation coefficients (ECC) of the model parameters p and q (Cromwell *et al.*, 1994). Significant and high values of LL, minimum values of AIC and SBC and values of ECC comparatively smaller than 0.90 guard the modeller against under and/or over-parameterisation (for model order redundancy) and hence ensure parsimony of the model orders.

Diagnostic Checking of Models

This stage of modelling is also of paramount importance as it screens the models (employed at the estimation stage) for their goodness-of-fit, i.e., the adequacy of models for predicting the future values. The family of models (employed for estimation of parameters) evolves a set of estimated errors (residuals). Adequate models (satisfying diagnostic checks) are obtained by examining the residuals. These residuals should satisfy the conditions of independence, normality, zero mean and constancy of variance.

Table 1: Estimated Parameters and Statistics for Screening Parsimonious ARIMA Models

Models	Estimated coefficients				Stationarity and Invertibility conditions	Log likelihood	Akaike Information Criterion	Schwarz Bayesion Criterion	Residual Mean Square	Correlation of est. coefficients	Mean Absolute Per cent Error
	Constant term	AR(1)	AR(2)	MA(1)							
(a) For Raw Jute Mill Supply											
ARIMA (0 0 1)	0.1026**	–	–	–0.5384**	Satisfied	155.68**	–307.36	–303.83	43.63×10^{-6}	–	4.93
	(0.0015)			(0.1324)							
ARIMA (1 0 1)	0.1025**	0.3097	–	–0.3682	Satisfied	156.67**	–307.35	–302.07	42.53×10^{-6}	0.80	–
	(0.0019)	(0.2536)		(0.2471)							
ARIMA (2 0 1)	0.1026**	0.8250	–0.4261	0.1267	Satisfied	157.89**	–307.79	–300.74	41.00×10^{-6}	0.93	–
	(0.0014)	(0.4097)	(0.2464)	(0.4493)							
ARIMA (1 0 0)	0.1025**	0.5399**	–	–	Satisfied	155.07**	–306.14	–302.62	44.87×10^{-6}	–	–
	(0.0022)	(0.1341)									
ARIMA (2 0 0)	0.1026**	0.7140**	–0.3642*	–	Satisfied	157.85*	–309.70	–304.41	40.14×10^{-6}	–0.50	4.48
	(0.0015)	(0.1474)	(0.1551)								
(b) For Raw Jute Mill Consumption											
ARIMA (0 0 1)	0.1174**	0.6455**	–	–	Satisfied	165.38**	–326.77	–323.25	27.65×10^{-6}	–	3.61
	(0.0022)	(0.1231)									
ARIMA (1 0 1)	–0.0005	–	–	–	–	158.18**	–314.37	–312.63	32.10×10^{-6}	–	–
	(0.0009)										
ARIMA (2 0 0)	0.1173**	0.6256**	0.0358	–	Satisfied	165.38**	–324.77	–319.49	28.30×10^{-6}	–0.61	–
	(0.0023)	(0.1569)	(0.1698)								
ARIMA (1 0 1)	0.1173**	0.6954**	–	0.0785	Satisfied	165.39**	–324.79	–319.50	28.29×10^{-6}	0.80	–
	(0.0023)	(0.1977)		(0.2614)							
ARIMA (0 0 1)	0.1175**	–	–	–0.4844**	Satisfied	162.06**	–320.12	–316.59	32.48×10^{-6}	–	–
	(0.0013)			(0.1379)							

Parentheses figures are standard errors of estimated coefficients

* significant at P = 0.05 ** significant at P = 0.01

Among the set of adequate models, the best fitted ARIMA model is screened by judicious comparison taking into consideration the following criteria:

model possessing adequate numbers of significant coefficients, satisfaction of stationarity and invertibility conditions by the model coefficients, high and significant value of LL, minimum values of AIC and SBC, minimum value of RMS, very small value of ECC of model coefficients in comparison to the value of 0.90 and comparatively smallest value of MAPE. To confirm the extent of correctness (predictive power) of a screened best fitted model for forecasting the future values, the first 39 years data (out of the 43 years) of each of the time series variable are re-fitted (as per their screened best model). And the absolute relative per cent forecasting errors (ARPFE's) in predicting the last four observed values (to confirm the predictive power of the models) are computed as:

$$\text{ARPFE} = \left| \left\{ y_{t+m} - \text{Est.}\ (Y_{t+m}) \right\} / Y_{t+m} \right|$$

where, y_{t+m} is $(t+m)^{th}$ observed value, Est. (Y_{t+m}) is $(t+m)^{th}$ estimated value from the re-fitted ARIMA mofrl basing on t (=39) years, and 'm' takes the values as 40, 41, 42, 43.

Results & Discussion

Based upon the realisation (plots of observed time series) at the identification stage of ARIMA modelling, the two time series variables under study (total raw jute supply and consumption in the mills) were found to be

Table 2: Stability Results of the Screened Models

Models	No. of Observations	Estimated coefficients				Stationarity and Invertibility conditions	Log likelihood	AIC	SBC	Residual Mean Square	Correlation of est. coefficients	ARPEE	Residual properties
		Constant	AR(1)	AR(2)	MA(1)								
(a) For Raw Jute Mill Supply													
	43	–0.1026**	–	–	–0.5384**	Satisfied	155.68**	–307.36	–303.83	43.63×10^{-6}	–	–	Satisfied
ARIMA (0 0 1)		(0.0015)			(0.1324)								
	39	0.10341**	–	–	0.5050**	Satisfied	142.06**	–280.13	–276.80	41.94×10^{-6}	–	1 to 8	Satisfied
		(0.0016)			(0.1427)								
	43	0.1026**	0.7140**	–0.3642*	–	Satisfied	157.85**	–309.70	–304.41	40.14×10^{-6}	–0.50	–	Satisfied
ARIMA (2 0 0)		(0.0015)	(0.1474)	(0.1551)									
	39	0.1034**	0.6530**	–0.3372*	–	Satisfied	143.75**	–281.51	–276.52	39.26×10^{-6}	–0.49	1 to 8.5	Satisfied
		(0.0015)	(0.1556)	(0.1550)									
(b) For Raw Jute Mill Supply													
	43	0.1174**	0.6455**	–	–	Satisfied	165.38**	–326.77	–323.25	27.65×10^{-6}	–	–	Satisfied
ARIMA (0 0 1)		(0.0022)	(0.1231)										
	39	0.1186**	0.5251**	–	–	Satisfied	150.95**	–297.90	–294.57	26.58×10^{-6}	–	1 to 4	Satisfied
		(0.0017)	(0.1411)										

Parentheses figures are standard errors of estimated coefficients

* significant at P = 0.05 ** significant at P = 0.01

non-stationary with respect to mean and variance at different points of time. So, by employing power transformation, it was found that constancy with respect to variance was realised by transforming the two time series variables to the power of –0.5. The transformed variables also showed stationarity with respect to mean (from the observation of the time-sequence plots), normal distribution (from the observation of the quantile-quantile plots) and dependency (from the values of estimated autocorrelations and of their tests) at different time points. These results confirmed that both the time series variables under study were suitable to be subjected to ARIMA modelling after transforming them only to the power of –0.5 (so that the stationarity condition is fulfilled by them which is the prime and essential requirement of UBJ models (Box & Jenkins, 1976). To search the model orders in regard to AR and MA processes, the estimated ACF's and PACF's were accomplished on each of the transformed variables and compared with their corresponding theoretical ACF's and PACF's. From the comparison, it was suspected that the raw jute supply variable possessed the AR order of 2 and MA order of 1 whereas, raw jute consumption possessed the AR order of 1 and MA order of 2.

For screening the best fitting models out of the suspected ARIMA models (as identified), various combinations of (p, q) values were tried and the pertinent parameters needed in the model were estimated (Table 1) by using finite-unconditional-least-squares method in respect of each variable. The results (depicted in Table 1a) from the estimation stage revealed that in case of the raw jute supply variable there was a revolving competition between ARIMA (0, 0, 1) and ARIMA (2, 0, 0) models possessing model errors (values of MAPE) of about 5 per cent. But from the results depicted in Table 1b in case of the raw jute consumption variable, ARIMA (1, 0, 0) ought to be suspected as the best among the fitted models owing to having one significant estimated coefficient, having highest significant LL value, having smaller AID and SBC values and, above all, having the smallest residual mean square with a small (about 4 per cent) model error (value of MAPE).

As goodness-of-fit of a model is a necessary criterion to be satisfied in regard to the adequacy of a

model for predicting future values more precisely, the best fitted models screened at the above stages were subjected to diagnostic checking on their residuals. The results depicted in Table 2 (residual properties) ensured that the residuals emanated from the above screened fitted ARIMA models possessed all the desired properties of white noise in case of both the study variables. From the two competitive models in case of the raw jute supply, ARIMA (0, 0, 1) was selected as the parsimonious model which possessed all the requisite best model properties in comparison to ARIMA (2, 0, 0). Also, ARIMA (0, 0, 1) model was found to possess a good predictive power (value of ARPFE) of about 1 to 8 per cent for forecasting the future values. Similarly, from the results depicted in Table 2b, it was confirmed that ARIMA (1, 0, 0) was the parsimonious model which also possessed a good predictive power of about 1 to 4 per cent for forecasting future values in case of the raw jute consumption variable. It is to be mentioned that the models developed under the ambit of this communication possess lesser values of RMS than those obtained in the findings of Pal *et al.*, 2000.

Table 3: Predicted Values and Their Confidence Intervals of the Finally Selected Parsimonious Models

Year	Raw jute mill supply (lakh bales)			Raw jute mill consumption (lakh bales)		
	Predicted value	C.I. (95%)		Predicted value	C.I. (95%)	
		Lower	Upper		Lower	Upper
1999-2000	99.92	77.58	133.50	82.02	68.13	100.63
2000-2001	45.10	71.81	131.87	78.48	63.21	100.03
2001-2002	95.10	71.81	131.87	76.31	60.81	98.61
2002-2003	95.10	71.81	131.87	74.96	59.48	97.39
2003-2004	95.10	71.81	131.87	74.11	58.71	96.48

The parsimonious models built have been algebraically represented to describe their intrinsic behaviour and for predicting the near future values (at most within 5 years). Table 3 displays the future values with their 94 per cent probability range. But, one point to be remembered here that it is always required to update an ARIMA model by the inclusion of new observations before forecasting near future values, otherwise, prediction error will be increased.

1. ARIMA (0, 0, 1) model for the total raw jute supply to mills

   Est. $Z_t = 0.1026+0.5384\,\hat{a}_{t-1}+a_t$

2. ARIMA (1, 0, 0) model for the total raw jute consumption to mills.

   Est. $Z_t = 0.0416+0.6454\,Z_{t-1}+a_t$

where, Est. Z_t = estimated value of Z_t,

Z_t = original observations transformed to the power of –0.5 at time 't'

$\hat{a}_t$ = estimated model residual at time 't'

and a_t = white noise term at time 't'

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□

Example is contagious behaviour.

– Charles Reade

Feature

Vegetable Production in Andhra Pradesh: An Econometric Approach

S. Venkata Seshaiah & D. Srinivasula Raju

Andhra Pradesh, the Horticulture bowl of India is a front running producer of a variety of fruits, vegetables, flowers, spices and beverages, thanks to its enterprising farming community, varied agro climatic zones, variety of soil types with endemic irrigation sources. This study examines the growth rates of area, production and productivity of the major selected vegetables (Okhra, Tomato, Onion and Brinjal), variability in the pattern of production, performance of production through plan periods, acreage response to prices of crops, growth of human population and vegetable production under study and the demand for these vegetables over a period of time.

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Since independence, our country has almost quintupled its agricultural production. The story started unfolding immediately after 1950 with the commencement of the first five-year plan. Top priority was accorded to irrigation and agriculture. Heavy budgetary inflows raised the edifice with multipurpose river valley projects also called temples of modern India. Once completed, heavy discharge flowing through canals and its distributaries carried life giving water to thirsty fields of millions of farmers. Bhakranangal dam and Nagarjuna sagar reservoir became household names across the country. Food production grew. So did people's confidence. General mood of the nation during 50s bordered on idealistic euphoria.

Horticulture in Andhra Pradesh

Andhra Pradesh is aspiring to be a powerhouse of Indian agriculture by 2020 with the agriculture sector shifting to a high growth trajectory by achieving an average annual growth rate of 6 per cent in real terms in the next 25 years. The primary growth engines of agriculture with be Horticulture, Poultry, Dairy, Rice, Fisheries and Agro-Industries. To realize this vision the state has to pursue a strategy aimed at integrated development of the agriculture sector with three major imperatives being harnessing water resources, developing agriculture in rainfed area, and policy reforms. Andhra Pradesh, the Horticulture bowl of India is synonymous with "Annapurna" the land of plentiful harvests and nutritional security. The state is a veritable "Akshaya Patra" or vessel of plenty of horticulture produce. Thanks to its enterprising farming community, varied agro climatic zones, variety of soil types with endemic irrigation sources, the state is a front running producer of a variety of fruits, vegetables, flowers, spices and beverages. Production of major vegetables plays an important role in meeting daily consumption and also the demand for processed products.

The department of Horticulture is a government

department and provides extension services, distribution of subsidies according to eligibility and technical guidance to farmers in the field of Horticulture throughout the state. A study was attempted to estimate the growth rates of area, production and productivity of major selected vegetables in recent years; to examine the variability in pattern of production of these crops; to study the performance of major selected vegetable production through plan periods; to examine acreage response to prices of these crops; to compare the growth of human population and vegetable production under study; to assess the demand for these vegetables over a period of time and to suggest recommendations.

Keeping in view the objectives, time series data on area under crop, production, farm harvest prices and market prices of selected vegetables and population of Andhra Pradesh for the period of 1986-87 to 1998-1999 was collected from various annual reports of Horticulture Department, Bureau of Economics and Statistics and from census reports for the analysis. The study was limited to selected major vegetables in Andhra Pradesh such as Okhra, Tomato, Onion and Brinjal.

Research Methodology

The following methodology was used to carry out the study.

- Compound growth rates of area, production and yield rates of selected major vegetables during 1986-87 to 1998-1999 were computed by using the least square technique of fitting the exponential function $Y = ab^t$.
- Growth rates were computed for the different crops at the state level.
- To measure the variability in the pattern of production of these crops, coefficient of variation for different crops was calculated.
- To study the performance of crops during recent plan periods, ANOVA technique was used
- To examine the average response to prices, a lagged model of the following type was adopted and coefficients of a and b were estimated by the least square method

$$A_t = a + bP_t + U_t$$

Where A_t = Area under crop 't' period

P_t = Cost of cultivation

T_t = Trend

U_t = Error term and a, b and c are constants

Empirical Investigation

It is observed from Table 1 that the tomato area contribution is high (13.84%) in Andhra Pradesh when compared to other vegetable crops. Onion production contribution is 10.45 per cent whereas okhra, tomato and brinjal contributions are 4.01 per cent, 7.36 per cent and 2.59 per cent respectively. In 1997-98, the average yield of onion was 15.49 million tons per hectare which is greater than the yield of other vegetable crops under study. In fact the yield of onions (1997-98) has come down when compared to yields in VIII five-year plan (Table 3). Since the special production program of onions introduced by the Government of A.P., yield of onion has increased from 15.49 Million tons to 16.03 Million tons.

Table 1: Area, Production & Yields of Major Vegetable Crops During (1997-98)

Crop	Area (Hect.)		Production (M. Tons)		Yield (M. Tons/Hect.)	
	India	Andhra Pradesh	India	Andhra Pradesh	India	Andhra Pradesh
Okhra	324907	16874 (5.19)	3238060	129885 (4.01)	9.30	7.70
Tomato	417815	57823 (13.84)	6218470	457473 (7.36)	15.00	7.91
Onion	340000	21133 (6.22)	3140000	328223 (10.45)	9.20	15.49
Brinjal	490725	18271 (3.72)	7772364	201217 (2.59)	14.60	11.01

Note: Figures in brackets indicate the percentage contribution of AP relative to India

Source: National Horticulture Board, Government of India; Development of Horticulture, Govt. of A.P.

Table 2: Exponential Growth Rate & Coefficient of Variation of Major Vegetable Crops in A.P. (1986-98)

Crop	Exponential Growth Rate			Coefficient of Variation(C.V.)		
	Area	Production	Yield	Area	Production	Yield
Okhra	1.0933**	1.0917^{NS}	0.9987^{NS}	32.93	46.78	29.53
Tomato	1.0731	1.0984^{NS}	1.0238^{NS}	35.05	85.34	32.22
Onion	1.0299**	1.1122^{NS}	1.0804^{NS}	16.27	45.74	38.51
Brinjal	1.0299**	1.0826^{NS}	1.0511^{NS}	17.21	41.70	29.31

Note: **Means significant at 5% level

NS: Not significant

It is observed from Table 2 that the growth rates of area of vegetables under study are almost equal with negligible difference. These growth rates are statistically

Table 3: Area, Production & Yields of Major Horticulture Crops During VII & Five Year Plans

Year	FYP	1. Okhra			2. Tomato			3. Onion			4. Brinjal		
		Area	Produ	Yield	Area	Produ	Yield	Area	Produ	Yield	Area	Produ	Yield
85-86	VII												
86-87		5134	51340	10.00	27301	273010	10.00	17915	17950	10.00	10381	103810	10.00
87-88		10387	103870	10.00	30229	302290	10.00	19025	190250	10.00	12205	122050	10.00
88-89		12078	120780	10.00	38687	386780	10.00	20996	209960	10.00	14386	143860	10.00
89-90		13039	130390	10.00	42089	420890	10.00	20835	208350	10.00	5289	152890	10.00
90-91	A.P.	11815	35445	03.00	41462	295134	07.12	19386	78524	09.00	16068	185816	11.56
91-92	A.P.	13352	53408	04.00	41415	331320	08.00	20615	309225	15.00	17757	230841	13.00
92-93	VIII	16384	81920	05.00	40301	362709	09.00	18825	376900	20.02	17504	245014	14.00
93-94		13991	111928	08.00	47156	471560	10.00	20000	50000	25.00	16929	338580	20.00
94-95		18224	145792	08.00	46907	469070	10.00	20874	521850	25.00	17393	347860	20.00
95.96		18080	144640	08.00	47723	477230	10.00	24034	600850	25.00	18897	377940	20.00
96-97		21569	172552	08.00	52793	527930	10.00	27165	679125	25.00	20175	403500	20.00
97-98	IX	16874	129885	07.70	57823	457473	07.91	21183	328223	15.49	18271	201217	11.01
98-99		25414	251677	09.90	97079	2055174	21.17	31057	497975	16.03	12771	184755	14.47

Note: AP: Annual Plan and FYP: Five year plan

Source: Department of Horticulture, Govt. of A.P. and Directorate of Economics and Statistics.

significant. Even though the production of vegetables under study is almost equal with negligible difference except for the growth rate of onion, all growth rates are not statistically significant. These may be because of the random fluctuations in the production of vegetables under study. It is also observed yield growth rates are insignificant. The coefficient of variation of production of okhra and onion is almost equal, but the coefficient of variation of area of onions is almost half of the coefficient of variation of okhra. It is also observed that onion's coefficient of variation is greater than the brinjal, okhra and tomato yields coefficient of variation. This may be because of random fluctuations of production of onions or the introduction of special production program of onions by the Government of Andhra Pradesh giving 75% seed subsidy.

It is observed from Table 3 that during the VII five-year plan the yields were constant even though the area was increasing. During the annual plans the yields of okhra and tomato decreased when compared to yields in VII five-year plan whereas yields of onion and brinjal increased compared to VII five-year plan. The decrease in yields of okhra and tomato is due to decrease in area under cultivation. During VIII five year plan, eventhough the area increased the yield rate of okhra declined but tomato yield rate is almost equal to VII five year plan yield rates, reflecting the capacity of land. Yield rates of onion and brinjal increased one and half times during the VIII five-year plan period compared to VII five year plan. Yield rates of brinjal almost doubled in VIII five- year plan compared to VII five-year plan.

In IX five-year plan's (1998-99) second year (i.e.) 1998-99, it is observed that the yield rates of vegetables under study increased since the area and production also increased compared to 1997-98. In fact the yield rates of tomato (21.17%) and onion (16.03%) are greater than the yield of okhra and brinjal.

Table 4a: Regression Output of Area & Cost of Cultivation of Major Vegetable Crops (1988-87 to 1997-98)

Crop	Constant	R^2	X Coefficient(s)	Standard error of coefficient
Okhra	4359.31	0.73	1.2294**	0.2358
Tomato	21513.86	0.86	2.9013**	0.3629
Onion	16540.04	0.44	0.3451*	0.1231
Brinjal	9896.02	0.71	0.8866**	0.1753

Note: *Means significant at 5% level
**Means significant at 1% level

It is observed from Table 4(a) that the area of cultivation and cost of cultivation have positive relationship and the coefficients are significant at 1% and 5% level.

Adopting suitable cost-effective techniques increases production of vegetables. It is observed from Table 4b that area and production have positive relationship and the coefficients are significant at 1% and 5% level. By increasing the area, production of vegetables may be increased.

Table 4b: Regression Output of Area & Production of Major Vegetable Crops (1988-87 to 1997-98)

Crop	Constant	R^2	X Coefficient(s)	Standard error of coefficient
Okhra	6498.35	0.52	0.0725**	0.0222
Tomato	9103.32	0.69	0.0847**	0.0176
Onion	17215.49	0.56	0.0104**	0.0029
Brinjal	11037.39	0.67	0.0220**	0.0049

Note: *Means significant at 5% level
**Means significant at 1% level

Table 5: Population Projections of Andhra Pradesh

Year	Population Projections (In Lakhs)
1991	671.80
1992	684.10
1993	696.40
1994	708.50
1995	720.40
1996	731.40
1997	743.10
1998	754.70
1999	766.20
2000	777.70
2001	789.00
2002	800.70
2003	812.60
2004	824.60
2005	836.80
2006	849.30

Source: Quiniquennial projections of Population, Census Operations, GOI (Statement 2.8 of report of the Standing Committee of experts on population projections, October, 1989, Pages 25 to 42)

It is observed from Table 5 and 6a that the population is increasing exponentially in A.P., so also the cost of cultivation of vegetables under study. The exponential growth rates of cost of cultivation of vegetables under study during 1985-86 to 1997-98 is almost equal and is given in Table 6b.

Table 6a: Cost of Cultivation of Major Vegetables in A.P. (in Rs/Hect)

Year	Okhra	Tomato	Onion	Brinjal
85-86	3796	3467	6018	3396
86-87	4220	3852	6687	3773
87-88	4668	4280	7430	4193
88-89	5209	4756	8255	4659
89-90	5788	5284	9172	5176
90-91	6431	5871	10192	5751
91-92	7146	6524	11324	6390
92-93	7940	7248	12582	7100
93-94	8822	8054	13980	7889
94-95	9802	8949	15533	8766
95-96	10891	9943	17259	9740
96-97	12101	11048	19177	10822
97-98	13446	12275	21308	12025
98-99	14940	NA	23675	13361
99-2000	16600	NA	26306	14845

Source: Department of Horticulture, Government of Andhra Pradesh
Note: NA means Not available.

Table 6b: Exponential Growth Rates of Cost of cultivation of Vegetables Under Study in A.P. (1985 to 97-98)

Crop	exponential growth rates
Okhra	1.1109
Tomato	1.1112
Onion	1.1112
Brinjal	1.1113

It is observed from Table 7a-b that except in onion production the projected figures show that production of vegetables may not meet consumption requirements unless the government undertakes special programmes to improve production of Okhra, Tomato and Brinjal.

Table 7a: Average Consumption of Vegetables in Andhra Pradesh

Vegetable	Average Consumption of Per day per person	Average Annual Consumption person (Kgs)
Okhra	15gms	5.475
Tomato	45gms	16.425
Onion	25gms	09.125
Brinjal	39gms	10.950

Conclusion

With great concern it is concluded that the yield rates in Andhra Pradesh should be increased in case of

Table 7b: Annual Projected Consumption of Vegetables in A.P.

Year	Population (in Lakhs)	Estimated Consumption (M. Tons)			
		Okhra	Tomato	Onion	Brinjal
2000-01	777.7	425790.75	1277372.30	709651.25	851581.00
2001-02	789.0	431977.50	1295932.50	719962.50	863955.00
2002-03	800.7	438383.25	1315149.80	730638.75	876766.50
2003-04	812.6	444898.50	1334695.50	741497.50	889797.00
2004-05	824.6	451468.50	1354405.50	752447.50	902937.00
2005-06	836.8	458148.00	1374444.00	763580.00	916296.00
2006-07	849.3	464991.75	1394975.30	774986.25	929983.50

Table 7c: Forecasting of Production of Major Vegetables in A.P. Based on Trend Values (Production)

Year	Estimated Production (M. Tons)			
	Okhra	Tomato	Onion	Brinjal
2000-01	192756	853711	693811	372591
2001-02	210425	937725	771681	372591
2002-03	229713	1030007	858290	436645
2003-04	250770	1131371	954620	472690
2004-05	273757	1242710	1061761	511711
2005-06	298850	1365005	1180927	553952
2006-07	326244	1499336	1313468	599681

okhra, tomato and brinjal when compared to India on the whole. The exponential growth rates of yield are not significant due to random fluctuations in the production of vegetables. The coefficient of variation of onion yields are greater than that of others. The area of cultivation and cost of cultivation, the area and production of vegetables have positive relationship and coefficients are significant. The human population and cost of cultivation of vegetables under study in A.P. are increasing exponentially. The projected production figures from 2000-01 to 2006-07 do not meet projected consumption of okhra, tomato and brinjal.

Table 7d: Difference/Gap Between Projected Production & Projected Consumption of Vegetables Under Study (M. Tons)

Year	Estimated Production (M. Tons)			
	Okhra	Tomato	Onion	Brinjal
2000-01	-233034.75	-423661.30	-15840.25	-478990.50
2001-02	-221552.50	-358207.50	51718.50	-460606.00
2002-03	-208670.25	-285142.80	127651.25	-440121.50
2003-04	-194128.50	-203324.50	213122.50	-417107.00
2004-05	-177711.50	-111695.50	309313.50	-391226.00
2005-06	-159298.00	-9439.00	417347.00	-362344.00
2007-07	-138747.75	104360.70	538481.75	-330302.50

It is suggested that the Government implement suitable programs like "special production program of onion" and train the farmers to increase production of okhra, brinjal, tomato and also other vegetables. It is also suggested the Government formulate plans to export projected surplus vegetables (Onions) to other states or other countries. The Government can also source scarce vegetables from other neighboring states through forming non-profitable groups. □

It is suggested that the Government implement suitable programs and train farmers to increase production of okhra, brinjal, tomato and also other vegetables.

Customer loyalty begins with experience.

– Regis McKenna

Feature

Diversification in Agriculture – Issues & Future Action

R.K. Panda

The study aims at finding out changes in crop composition and growth performance in agriculture in the post reform years and indicate how far the growth in foodgrains fulfils self-sufficiency. By way of policy it suggests ways to achieve both intensification and diversification in crop cultivation in the present changed context.

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In recent years, because of steady decline in prices of rice at the international level, most of the South-East Asian Countries have encouraged diversification in the agriculture sector and rural economies (Vyas, 1996). In India, since the New Economic Policy, 1991, high priority has been accorded to increase acreages under commercial crops and this change in strategy in agriculture sector has been argued mostly from two angles. In the first place, it is pointed out that with the General Agreement on Trade and Tariffs throwing open increasing opportunities to reap benefits of competitive advantage in agriculture sector, India should produce and export those agricultural commodities in which it has competitive export advantages (Rao & Gulati, 1994). Secondly, the income and employment implications of foodcrops being small, to raise income and employment levels of marginal and small farmers – the dominant section of the rural community, it is required that, there should be diversification towards high value crops (Reddy, 1991). However, there is now much debate among economists on agricultural diversification versus self-sufficiency in foodgrains. Both Dantwala (1996) and Krishnawamy (1994) advocate for self-sufficiency in foodgrains production. While Dantwala argues it from the point of view of uncertainty in agricultural production and volatility in world agricultural prices, Krishnaswamy argues the same because a large mass of population in the country is living below the poverty line. In contrast to this view, Rao and Gulati (1994) argue that agricultural growth need not be limited to self-sufficiency goal and it must try to reap benefits from international market by shifting to new activities.

Against this backdrop, the paper attempts to study the changes that have taken place in crop composition in the post-reform years, the growth in foodgrains production and its sufficiency and the future strategy needed to achieve both food security and diversification in agriculture sector.

The specific objectives of the study are:

- To study the changes in crop composition in agriculture sector in the post reform years.
- To analyse the growth performance of foodgrains production and its constituents and indicate how far the growth achieves self- sufficiency.
- To suggest future strategy for achieving food security as well as crop diversity in coming years.

Data & Methodology

The study is based on secondary data obtained from various publications of Government of India and other agencies. The analysis of data is conducted both at the all-India and regional levels. The states studied are grouped into six broad regions viz.:

- Northern: Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab and Rajasthan.
- North-Eastern: Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Tripura and Mizoram.
- Eastern: Bihar, Orissa, West Bengal and Sikkim.
- Central: Madhya Pradesh and Uttar Pradesh.
- Western: Goa, Gujurat and Maharashtra and
- Southern: Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

Besides tabular analysis and interpretation of data, log linear growth model has been used to calculate growth in crop production and per capita availability of foodgrains over time. Coefficient of variation is worked out to measure fluctuation in the per capita foodgrains availability during the last decade. The study relates to Post Economic Reform Years (1991-92 to 1996-97).

Results & Discussion

Changes in cropping pattern: Table 1 presents data on total cropped area and its distribution among different crops overtime. It is observed that, neither the total cropped area nor its distribution among broad crop groups-foodgrains and non- foodgrains has shown much changes between 1991-92 and 1996-97. Foodgrains continue to occupy major crop area in the country although there has been some marginal rise in acreage under non-foodgrains within this time period. The distribution of area under different crop sub-groups also does not show perceptible changes. Within foodgrains, acreage under cereals has slightly fallen over the base 1991-92 but its proportion to total foodgrains area and total cropped area has remained mostly the same throughout. Area under pulses to total foodgrains area has remained around 19 per cent, though in acreage terms it has also declined marginally. Within non-foodgrains, oilseeds have registered a modest rise, both in absolute acreage and as percentage to total area under non-foodgrains. Fibres and other crops have exhibited an inconsistent trend in acreage cultivation. As regards individual crops, rice and wheat have gained in area while jowar, bajra and maize have lost over time. Area under gram has declined while that under tur has remained almost the same. Cash crops like groundnut have lost in acreage while rapeseed and mustard, cotton and sugarcane have added to their acreage.

Neither the total cropped area nor its distribution among foodgrains and non-foodgrains has shown much changes.

Table 1: Distribution of Cropped Area Among Different Crops in India

(Unit: Million Hectares)

Particulars	1990-91	1992-93	1994-95	1996-97
Area under Crop Groups				
Foodgrains	127.8	123.1	123.5	124.5
Non-foodgrains	58.1	62.3	62.9	62.1
Area under crop sub-Groups				
Pulses	24.6	23.0	23.2	23.2
Oil Seeds	24.1	25.0	25.3	26.8
Fibres & Others	34.0	37.3	37.6	35.3
Area under Individual Crops				
Rice	42.7	41.8	42.2	43.3
Wheat	24.2	24.6	25.6	25.9
Jowar	14.4	13.0	11.7	11.6
Bajra	10.5	10.6	10.1	10.0
Maize	6.2	6.0	6.1	6.1
Gram	7.5	6.4	7.3	7.1
Tur	3.6	3.6	3.4	3.6
Groundnut	8.3	8.2	7.9	7.8
Rape seed & Mustard	5.8	6.2	6.2	6.9
Cotton	7.4	7.5	7.9	9.1
Sugarcane	3.7	3.6	3.8	4.2
Total Cropped Area	185.9	185.4	186.4	186.6

Growth in Crop Production

Crop production happens to be the main activity in Indian agriculture. As such, the growth in production of major crops reflects the performance of agriculture in the country. The results presented in Table 2 show that the growth rate in foodgrains production (a composite growth rates of Khariff and Rabi foodgrains) has shown a modest positive growth. Among major crop sub-groups, oilseeds show a high growth (4.99 per cent per annum). The annual growth rate of cereals is found modest and positive while that of pulses exhibits negative growth. Individual crops like rice and groundnut reveal a positive growth over time.

Table 2: Annual Compound Growth Rate in Production of Major Crops in India Between 1991-92 and 1996-97

(Unit: Percent)

Crops	1992-97
Foodgrains	2.67
Khariff foodgrains	1.05
Rabi foodgrains	4.02
Cereals	2.80
Pulses	–2.06
Oilseeds	4.99
Rice	1.99
Groundnut	2.46

Regionwise Growth in Crop Production

An important dimension in measuring agricultural growth performance is the spatial dimension. It is particularly relevant to take note of this dimension in a large country like India having wide range of agro-climatic conditions. However, in view of the widely varying crop composition practised across regions, and non-availability of data of some crops at the state level, here only rice and foodgrains are taken to calculate their growth rate at the regional levels (Table 3). Observation shows that the annual growth rate in the production of rice ranges from 0.19 per cent in case of Southern Region to 3.96 per cent in case of Western Region. For foodgrains production, the variation is from 0.06 per cent per annum in case of Southern Region to 5.61 per cent per annum in case of Western Region. This indicates that because of wide disparity in inter-regional growth in rice and foodgrains production, there lies scope to raise their production in the country.

Because of wide disparity in inter-regional growth in rice and foodgrains production, there lies scope to raise their production in the country.

Table 3: Annual Compound Growth Rate in Production of Rice and Foodgrains in Different Regions between 1991-92 and 1996-97

(Unit: Percent)

Regions	Rice	Foodgrains
Northern	1.52	2.60
North-Eastern	0.26	0.99
Eastern	2.33	1.93
Central	3.00	3.41
Western	3.96	5.61
Southern	–0.19	0.06

Per Capita Net Availability of Foodgrains

Looking at the near consistent rise in foodgrains production and occasional imports, it is opined that Indian economy has achieved self-sufficiency in foodgrains and so we should go for increasing diversification towards Commercial/Cash crops. Self-sufficiency is however a debated issue and discussion on it involves a wide range of considerations. However, here we have used the term from the point of view of availability. The all-India data on per capita net availability of foodgrains per day in different years, its annual compound growth rate and variability between 1983-92 are presented in Table 4. It is observed that, the annual growth in the available percapita foodgrains and its constituents is quite low in the country excepting rice, where there is some impressive performances. For pulses, the growth happens to be negative. There is also considerable fluctuation in the availability of foodgrains and its constituents over the years. Rice has shown the highest variability, followed by pulses. In India with 968 million population (estimated, 1998), taking the present level of percapita foodgrains availability of 174.5 kgs per annum (triennium ending 1995, Pandey & Sharma, 1996) the country requires about 212 million tonnes of foodgrains (inclusive of human consumption, feed, seed, wastage and processing losses etc.). Besides there is net addition of 17 million persons to the population of the country every year and this necessitates additional 3 million tonnes of foodgrains per annum to maintain the present percapita net availability.

Future Strategy

Post-reform strategy to diversify agriculture towards

Table 4: Percapita Net Availability of Foodgrains and its Constituents, their Annual Compound Growth Rate and variability at the all-India Level between 1983-92

(Unit: Gram)

Year	Rice	Wheat	Cereals	Pulses	Foodgrains
1983	169.8	144.4	397.8	39.5	437.3
1984	197.8	140.8	437.8	41.9	479.7
1985	189.1	138.6	415.6	38.4	454.0
1986	212.3	151.2	434.2	43.9	478.1
1987	206.3	158.1	435.4	36.4	471.8
1988	188.5	154.5	411.8	36.7	448.5
1989	215.6	156.7	452.6	41.9	494.5
1990	215.3	132.6	435.3	41.1	476.4
1991	221.7	166.8	468.5	41.6	510.1
1992	214.3	161.4	435.6	34.3	469.9
CAGR	2.24	1.21	0.93	–0.75	0.83
C.V.	7.66	6.94	4.43	7.30	4.32

the cultivation of commercial/cash crops should be taken up with caution. We can not be complacent on food security as a large part of country's agriculture continues to be a gamble of the monsoon and more than 29 per cent of our population are still below the poverty line (1996-97). Taking the criteria of Abercrombie (1961), India is still in the fourth stage of transition, from subsistence to market oriented agriculture. Subsistence farming does exist in backward and tribal regions. Productivity of rice per hectare of cropped area in India remains low compared to most of the South and East Asian Countries (1995). At the same time, we can not ignore diversifying agriculture as there is scope to earn higher income from the World Market in the present changed scenario. In this context, as a first step, efforts may be made to develop infrastructure and other supports in the agriculture sector of relatively poor and backward states and regions to raise foodgrains production and reduce inter-regional disparity which exists at present. Irrigation being a crucial input in agricultural development, a time bound action programme may be adopted to raise irrigation potential to optimal level. At present (1993-94), there lies a gap of 28 million hectares between ultimate irrigation potential and the actual at the all-India level. Once irrigation facilities are developed, crop intensity in the country shall go up and increasing cultivated area will be available for non-food crops. Simultaneously, better varieties of foodcrops like rice and wheat having competitive export advantages should be encouraged for cultivation as the initial process of diversification. This will motivate farmers to go in for producing commercial crops. In the process of raising foodgrains production in the country and diverting increasing areas towards commercial/cash crops, the Government can play a crucial role.

Post-reform strategy to diversify agriculture towards the cultivation of commercial/cash crops should be taken up with caution. We can not be complacent about food security as a large part of country's agriculture continues to be a gamble of the monsoon and more than 29 per cent of our population are still below the poverty line.

Efforts may be made to develop infrastructure and other supports in the agriculture sector of relatively poor and backward states and regions to raise foodgrains production.

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Feature

Variations in Job Satisfaction with Age: Some Empirical Findings

Sunil K. Dhawan

Job satisfaction has been found to vary with the type of job, level of organisational hierarchy, personality types, etc. However, limited data are available about the nature of relationship between age or other demographic characteristics and job satisfaction. This study gives job satisfaction data on five factors for two samples of blue-collar (nl = 110) and white collar (n2 = 50) workers. The analysis reveals different relationships with age for the two samples. Age is positively correlated with one factor and negatively correlated with another in each sample. Younger blue-collar and white-collar workers are found to be different from their older colleagues on different factors of job satisfaction. Results have been discussed in the context of change strategies for enhancing job satisfaction of various groups of employees.

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Numerous studies have been conducted to assess the sources and factors of Job satisfaction among blue-collar and white-collar workers. Many of these studies do not take into consideration the demographic characteristics of the respondents. For example, Locks and Whiting (1974) found significant differences in the sources of satisfaction and dissatisfaction of blue-collar and white-collar employees without considering age as a potentially significant factor causing the difference.

Some other studies have established certain association between age and sources of satisfaction (Hulin & Smith, 1965; Saleh & Hyde, 1969; Sharma, 1971; Hunt & Saul, 1975; De, 1977; Glenn & Taylor, 1977; Haefner, 1977). Hunt and Saul examined the relationship between age, tenure and job satisfaction among male and female white-collar workers. Age was found to have stronger relationship with job satisfaction than tenure among males. Reverse relationship was found among females.

In their study of white-collar employees, Glenn and Taylor found a moderate but consistent positive correlation between age and job satisfaction (Glenn & Taylor, 1977). They explained this correlation as a result of influence associated with 'aging' or 'cohort' membership or both. Similar trends have been observed among blue-collar workers. Sharma (1971) found that satisfaction with the organisation was related to wages, age, seniority and number of children. No relationship was found between the type of work and satisfaction. For both types of employees, job satisfaction has been shown to vary directly with age (Hulin & Smith, 1965; Saleh & Hyde, 1969). The level of employee in an organisational hierarchy has been shown to be an important mediating variable affecting the relationship between age and sources of job satisfaction. In a study of five government departments, De (1977) found a positive correlation between age and job satisfaction for top-level employees; a negative correlation for middle-level employees; and an insignificant correlation for

lower level employees. While job satisfaction of top-level employees increased with age, it decreased with age among middle-level employees. The study highlighted the intervening influence of levels of organisational hierarchy in the relationship between job satisfaction and age.

Existing literature on the sources of job satisfaction among blue-collar and white-collar workers leaves much gap. Comparative studies that do not consider potential influence of age and other characteristics on the sources of job satisfaction among various categories of employees can lead not only to partial theoretical developments but to misguided change efforts to enhance job satisfaction. The primary focus of the present study is to examine the relationship between age and sources of job satisfaction among blue-collar and white-collar employees. It is also intended to demonstrate the differential impact of age on the sources of job satisfaction among different types of employees.

Methodology

A questionnaire consisting of 40 questions was used to collect information on job satisfaction. Each question was on 5-point scale ranging from 'to a very little extent' (score 1) to 'to a very great extent' (score 5). Blue-collar workers were drawn from a Heavy Engineering Industry whereas white-collar workers were from a government department. Total of 110 blue-collar workers and 50 white-collar workers filled the questionnaire. The job satisfaction questionnaire was tested earlier. The split-half method had yielded reliability co-efficient of about 0.60 for five factors. These five factors are: opportunity, learning and challenge, influence over superiors, work enjoyment and meaningfulness, satisfaction with work group, and desirable future. The questionnaire was individually administered to each respondent by a team of interviewers.

Analysis

In order to demonstrate the effect of age on sources of job satisfaction among blue-collar and white-collar employees, the two samples have been sub-divided into two sub-samples each by using 30 years as cut-off age. Comparison of these two sub-samples for blue-collar and white-collar workers separately forms the initial analysis. Pearson correlation coefficients are then calculated between age and factors of job satisfaction for blue-collar and white-collar workers. Finally, these two types of employees are compared in terms of factors of job satisfaction. Comparisons of means are made using t-test.

Results

Job satisfaction of the blue-collar employees on the five factors is given in Table 1. Comparison between the two groups of blue- collar employees, those 30 years of age or below and those above 30 years indicates significant differences on two of the five factors. Blue-collar employees above 30 years of age had significantly higher score for the factor 'influence over superiors' than those 30 years or below ($t = 1.72$, $p < 0.05$, one-tailed). On the other hand, younger blue-collar workers (those 30 years of age or below) showed significantly greater 'work enjoyment and meaningfulness' in comparison to their older colleagues ($t = 2.13$, $p < 0.025$, one-tailed). The two groups are similar on the rest of the factors.

Table 1: Mean, Standard deviation and t-values on factors of Job Satisfaction for blue-collar workers

Factor	n	m	SD	t (between BC(1) & BC (2)
Opportunity, learning and Challenge				
BC(T)	110	2.94	0.67	
BC(1)	24	2.94	0.20	ns
BC(2)	86	2.93	0.67	
Influence over Superiors				
BC(T)	110	2.84	0.80	
BC(1)	24	2.60	0.77	1.72*
BC(2)	86	2.91	0.85	
Work enjoyment & meaningfulness				
BC(T)	110	4.25	0.83	
BC(1)	24	4.50	0.64	2.13**
BC(2)	86	4.18	0.65	
Satisfaction with work group				
BC(T)	110	3.42	0.62	
BC(1)	24	3.40	0.56	ns
BC(2)	86	3.43	0.42	
Desirable future				
BC(T)	110	3.11	0.64	
BC(1)	24	3.24	0.51	ns
BC(2)	86	3.07	0.76	

Note: BC(T) = Total blue-collar workers
BC(1) = Blue-collar workers of age ≤ 30
BC(2) = Blue-collar workers of age >30
ns = not significant, *$p < 0.05$ (one-tailed)
** = $p < 0.025$ (one-tailed)

The job satisfaction data for white-collar employees are presented in Table 2. The two groups of white-collar workers, those 30 years of age or below and those above

30 years showed significant differences on three of the five factors. The younger group of white-collar workers showed greater satisfaction on the two factors of 'Opportunity, learning and challenge' ($t = 2.52$, $p < 0.025$, one-tailed) and 'influence over superiors' ($t = 1.76$, $p < 0.05$, one-tailed) in comparison to their older colleagues. On the other hand, white-collar workers above 30 years of age indicated significantly higher satisfaction with 'desirable future' in comparison to the younger group ($t = 5.73$, $p < 0.01$, one-tailed).

The younger group of white-collar workers showed greater satisfaction on the two factors of 'Opportunity, learning and challenge' and 'influence over superiors'.

Table 2: Mean, Standard deviation and t-values on factors of Job Satisfaction for white-collar workers

Factor	n	m	SD	t (between BC(1) & BC (2)
Opportunity, learning and Challenge				
WC(T)	50	2.93	0.77	
WC(1)	22	3.23	0.64	2.52**
WC(2)	28	2.70	0.84	
Influence over Superiors				
WC(T)	50	3.13	0.77	
WC(1)	22	3.38	0.69	1.76*
WC(2)	28	3.01	0.77	
Work enjoyment & meaningfulness				
WC(T)	50	4.18	0.75	
WC(1)	22	4.29	0.70	ns
WC(2)	28	4.12	0.23	
Satisfaction with work group				
WC(T)	50	3.33	0.65	
WC(1)	22	3.39	0.51	ns
WC(2)	28	4.12	0.23	
Desirable future				
WC(T)	50	3.44	0.58	
WC(1)	22	2.93	0.43	5.73**
WC(2)	28	3.79	0.64	

Note: WC(T) = Total group of white-collar workers
WC(1) = White-collar workers of age ≤ 30
WC(2) = White-collar workers of age > 30
* = p,0.05 (one-tailed), **p,0.025 (one-tailed)*** <0.01 (one-tailed)

Table 3 gives the correlation between age and factor of job satisfaction for the blue-collar and white-collar workers. These correlations partly explain the differences between younger and older groups of blue-collar workers, age is positively correlated with 'influence over superiors' ($r = 0.20$, $p < 0.05$) and negatively correlated with 'work enjoyment and meaningfulness' ($r = -0.24$, $p < 0.05$). Thus, with increase in age for blue-collar workers their influence over superiors also goes up, whereas it decreases the work enjoyment and their perception about its meaningfulness. As we have not taken the time series data for age, the results clearly show that age has relationship (significantly) with these two factors.

Age is positively correlated with 'influence over superiors' and negatively correlated with 'work enjoyment and meaningfulness'.

For white-collar workers also we find that different factors of job satisfaction are correlated with age. We find that age is negatively correlated with the factor 'opportunity, challenge and learning' ($r = -0.38$, $p < 0.05$) and positively correlated with the factor 'desirable future' ($r = 0.40$, $p < 0.05$). Thus, for while-collar employees, with increase in age, their opportunities for better work environment, challenge at work and new learning goes down whereas they feel their future is safe and better. For the remaining three factors, no significant correlation was found.

Table 3: Correlations between age and factors of Job Satisfaction for blue-collar and white-collar workers

Factor	Blue-collar (n1 = 110)	White-collar (n2 = 50)
Opportunities, learning & Challenge	–0.07	–0.38*
Influence over superiors	0.20*	–0.14
Work enjoyment and meaningfulness	–0.24*	–0.13
Satisfaction with work group	–0.08	0.19
Desirable future	–0.10	0.40*

*p < 0.05

If we look at Table 3 in comparative way, we will find that different factors are significant for blue-collar and white-collar workers. This is due to the different type of work environment in which these workers are involved. For policy formulation for younger and older employees, a close look at the nature of work and work environment is necessary.

The comparison between blue-collar and white-collar workers is tabulated in Table 4, where the entire sample of blue-collar workers is compared with the entire sample of white-collar workers (without consideration of age). The latter show significantly higher satisfaction with the two factors of 'influence over superiors' ($t=2.06$, $p<0.025$, one-tailed) and 'desirable future' ($t=3.04$, $p<0.025$, one-tailed). When comparisons are made between younger blue-collar and white-collar workers, the latter show significantly higher scores on the two factors of 'opportunity, learning and challenge' ($t=2.03$, $p<0.025$, one-tailed) and 'influence over superiors' ($t=3.55$, $p<0.025$, one-tailed). Likewise, older white-collar workers exhibit greater satisfaction with the factor 'desirable future' than older blue-collar workers ($t=4.80$, $p<0.025$, one-tailed). There is greater similarity between older people than differences as borne out by the results in Table 4.

Table 4: Comparison between blue-collar workers on factors of Job Satisfaction

Factor	t-values		
	BC(T) vs WC(T)	BC(1) vs WC(1)	BC(2) vs WC(2)
Opportunities learning & Challenge	0.08	0.03*	1.32
Influence over superiors	2.06*	3.55*	0.59
Work enjoyment and meaningfulness	0.54	1.05	0.75
Satisfaction with work group	0.81	0.06	0.93
Desirable future	3.04*	1.96	4.80*

*p <0.025 (one-tailed).

Discussion

The results indicate that white-collar workers in this study showed higher satisfaction than the sample of blue-collar workers on two of the five factors of job satisfaction. However, the differences between them varies with age. It is interesting to note that factors of job satisfaction on which younger white-collar workers showed significantly higher satisfaction in comparison to younger blue-collar workers are different from those for the older group. With age, degree of job satisfaction for blue-collar and white-collar workers becomes quite identical. Thus, overall comparison of job satisfaction among blue-collar and white-collar workers tend to suppress these crucial differences owing to age.

This phenomenon can be understood in terms of the correlation between age and factors of job satisfaction among blue-collar and white-collar workers. First, age is significantly correlated with two of the five factors for each sample. Moreover, the factors of job satisfaction correlated with age for blue-collar workers are different than those for white-collar workers. Second, in both cases, one factor is positively correlated with age and another negatively. This variation accounts for the differences between younger and older respondents in each sample. Two interesting inferences can be drawn from the above analysis. First, degree and factors of job satisfaction varied not only with the type of job or level of organisational hierarchy, but with age. The subjects developed different expectations and experiences as they grew in age and these changes are reflected in their perceived satisfaction with their jobs. Second, change efforts designed to enhance the job satisfaction for a group of employees are generally based on some research finding (Heriberg, et.al, 1957).

With age, degree of job satisfaction for blue-collar and white-collar workers becomes quite identical. Overall comparison of job satisfaction among blue-collar and white-collar workers tend to suppress crucial differences owing to age.

This study highlights the significance of considering age of the employees and its impact on job satisfaction in designing improvement programmes. To the extent that employees of different age groups exhibit different factors of satisfaction, different change strategies are required to enhance their satisfaction. For instance, in the context of this study, change strategies aimed at increasing the 'opportunity, learning and challenge' may prove to be more relevant for the older white-collar workers, while those designed to increase their sense of 'desirable future' may contribute more towards the increased job satisfaction of younger white-collar workers. Likewise, different strategies may be needed to enhance the job satisfaction of younger blue-collar workers as compared to that of their older colleagues. The limited scope of this study makes it difficult to generalize the nature of relationship between age and factors of job satisfaction among blue-collar and white-collar workers. Accumulated evidence is also very limited in this respect. However, the study underlines the importance of analyzing the nature of variations in sources of job satisfaction owing to age and other demographic characteristics of different categories of employees and indicates some direction in which future researches could proceed.

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The supreme accomplishment is to blur the line between work and play.

– Arnold Toynbee

We know the mistake of doing nothing from our own experience.

– Mikhail Gorbachev

consumption of the nation's natural resources, both renewable and non renewable. In this context environmental accounting has been termed as "natural resource accounting". Environmental accounting in the context of financial accounting refers to the estimation and public reporting of environmental liabilities and financially material environmental costs. As regards management accounting, environmental accounting refers to the use of data about environmental costs and performance in business decisions and operations (EPA, 1995).

Companies should estimate the total expenditure on protection or enhancement of environment. This would not only make the image of the company 'clean' but would also help the company track and manage direct and indirect environmental costs and would improve environmental decision making. With the emergence of 'green' ecology conscious pressure groups, companies are directly or indirectly required to comply with environmental norms. Recently environmental consciousness manifested in government regulation in New Delhi, India, which stated that industrial units had to be relocated. Industrial units have to comply with the government regulations willingly or unwillingly. Isn't it more beneficial to adopt those norms voluntarily and thus raise the image of the company which definitely results in increase of goodwill?

In economically advanced countries, environmental consciousness is very high and preventive measures are taken to preserve scarce resources. Indians have to realise that 'eco consciousness' has to be practiced and it will give the companies an international footing. The argument against this could be that adoption of green technique would increase cost to the company, which would be passed on to the cost of the product. In such a case how would Indian companies manage global competitiveness?

Companies can record and keep track of various environmental costs. Costs incurred to comply with environmental laws are clearly environmental costs. Costs of pollution control equipment and non compliance penalties are all environmental costs. Similarly costs incurred for environmental protection are environmental costs. An important function of environmental accounting is to bring environmental costs to the attention of corporate shareholders who may be able and motivated to identify ways of reducing or avoiding these costs while at the same time improving environmental quality. By allocating environmental costs to the product or processes that generate them, a company can motivate managers and employees to find creative pollution prevention alternatives that lower these costs and enhance profitability.

There are two general approaches to allocating environmental costs:

- Build proper cost allocation directly into cost accounting systems or
- Handle cost allocation outside of automated accounting systems (Mark Van der Veen, 2000).

Helen Howes et al, (1999) has discussed Ontario Hydro's approach to full cost accounting and its experience in using it as a tool for integrating environmental considerations into its business decision-making processes. At Ontario Hydro, full cost accounting is defined as a means by which environmental considerations can be integrated into business decisions to:

- Better understand and allocate its internal environmental costs.
- Better define, quantify and, where possible, monetize the external environmental impacts of its activities; and
- Integrate environmental impact and cost information into planning and decision making.

Full cost accounting is a means by which environmental considerations can be integrated into business decisions.

The activities which result in the incurrence of these costs can be identified and wherever the costs are high, the technique of 'activity based costing' could be used and the activities could be either modified or suspended if possible and the cost so controlled. This would result in an effective decision-making protocol with efficient cost reduction and cost control technique. An example could be, if an activity is causing heavy clean up cost then efforts could be made to modify that activity and more sophisticated equipment could be used to reduce the environmental degradation. That would definitely increase one time fixed cost but nevertheless would give long run benefits. Everyday incurrence of penalty and adverse publicity in the media due to an anti environmental act could create further damage to the image of the company. With this tag will the company be able to compete globally?

It is better to identify the activity, which is responsible for the environmental cost. For instance, there are cases where effluents are discharged in rivers polluting them, and such companies need to clean up their act. In such

cases the particular activity, which is responsible for pollution should be identified and cost should be allocated to such activity. The company's aim should not be to know the cost of the activity so that they can charge markups, rather their focus should be to modify the activity for cost reduction and cost control. Companies lose out if their environmental standards do not match with the other parts of the world. There will be no hiding place. Even the foreign lending institutions want to have a complete environmental picture before proceeding.

The activity responsible for pollution should be identified and cost should be allocated to such activity. Focus should be to modify the activity for cost reduction and control.

Adoption of paper bottles instead of plastic bottles for storing shampoo not only manifests the environmental consciousness of the company but also saves on cost. In international markets the consumer would not mind paying a little more for the 'environment friendly' packaging. An environmentally friendly response by the organisation may influence customers, employees and regulatory authorities to think in favor of the organisation. Pressures and threats, whether driven by potential regulatory developments or by market forces, might represent opportunities and potential benefits for business.

The market will come to force a proactive concern for the environment upon companies (Buck 1992). While concern for the environment may be seen at the moment as a marketing edge to attract the green consumer, in time it will become the price of entry into the markets. Blaza, (1992) argues that for many companies market pressures are now the main driving force on the environment. It is essential that a company's environmental policy fits into the company's overall business strategy. Buck, (1992) also stresses that a task done willingly will be much better done than when done unwillingly. For instance, a company selected as "Clean Air Partner of the Year" under Colorado partnership program attracted several new clients from positive publicity. (Majestic Metals, 1995)

As Bronner, (1994) points out instituting new technological priorities and ethical parameters for the human interdependency with nature is inherently a world experiment Ecological concerns are the new motor for internationalism. In additional to legislation, global market forces provide a strong incentive for change. More and more consumers are seeking the products and services of organisations, which are environmentally sensitive, and doing the right things. In order to draw external funds, Indian companies have to go for an environmental balance sheet of the organisation. Before making an investment, the foresight acquirers (shareholders) are clearly interested in getting a better understanding of the true assets and liabilities (which includes the environmental assets and liabilities) of any organisation in which they are making an investment (Chaklader, 2000). Some environmental inputs could end up costing money in the future and need to be accounted for today. These broad pressures are coming from a number of different sources and there are a number of areas which need to be addressed from an accountant's perspective. First, reliable measures are needed to ascertain all environmental impact from a cost-benefit point of view, and to measure what is an asset or a liability and then to report the same. A survey was conducted in Great Britain (Economist, 1991-2) and the survey result presented an evidence of an association between corporate environmental responsibility and firm profitability. It suggested that environment friendly companies are strong financial performers. If the association between environmental and financial performers is believed, and if we also believe that the world's ecological crisis is serious and will get worse, then such a conclusion deserves wide publicity among corporate decision makers. Let Indian companies follow the survey result and make an attempt to have more return on capital.

Companies not only save on cost by adopting environmental accounting but also create a globally strong image. If Indian companies can benefit by way of cost savings and as well as have a strong reputation then why not adopt environmental accounting and achieve global competitiveness?

Companies not only save on cost by adopting environmental accounting but also create a globally strong image.

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The activist is not the man who says the river is dirty. The activist is the man who cleans up the river.

– H. Ross Perot

The people who get into trouble in our company are those who carry around the anchor of the past.

– Jack Welch

Book Reviews

'Liberalisation and Human Resource Management' *by Arun Monappa and Mahrukh Engineer*; Response Books, 1999, New Delhi, Price Rs. 195.00.

It is indeed difficult to define liberalisation. The term has multi-perspectives and has enormous ramifications on economic policy, political thought and society. In the preface to the book under review, the authors have attempted to define liberalisation by analysing the economic scenario as it existed in pre- liberalisation period in (independent) India (1947-91) and in period from 1990, with policy changes implemented by the then finance minister, Dr. Manmohan Singh and pursued with greater vigour thereafter by successive finance ministers though belonging to differing political shades. The pre-liberalisation economic policy was, as per the authors, inward looking regulated, monopolistic, non-competitive, insular, government protected and with a self-reliant stance. Bureaucratic controls, licensing ad centralised planning, restrictions on capacity of business units, their location, choice and source of raw materials, checks on corporate take overs and mergers characterised that economic policy. The post liberalisation period has sought to integrate Indian economy with the world economy. The new economic policies have called for Indian business to be competitive and not rely on permits, subsidies and licences. In simple phrase it hopes to provide level playing rules to both the domestic and foreign business interests. The impact of liberalisation on Indian business can be studied in detail with reference to WTO agreements such as GATT, TRIMS, ADM, SCM, TRIPS, SPM, Patents, Govt. Procurement, Agreement on Agriculture, Agreement on Safeguard Measures and Rules and Exports.

The liberalisation programme has compelled Indian companies to look afresh at several issues. The book under review has confined itself to discussing HRM against the backdrop of global changes. In addition the book aims to discuss some of the problems of Indian society – poverty, unemployment, labour and subsidies. The present volume comprises six chapters. In the first chapter, the authors bring out the salient features of the shift in economic policy. At the global level, it has sought to integrate the Indian economy by allowing freer movement of capital investment. At the national level it has envisaged business environment without controls and a reduced or eliminated role of the state to operate industry (PSU's). The new-economic programme has opened up the economy to international participation, competition from MNC's and foreign investments. The better half of this chapter comprises reflections on the economic reforms. The authors point out that the reforms have compelled the private sector to become conscious of competition and be concerned about the distinct advantages enjoyed by MNC,s in technology, quality and a strong brand image. There exists a lack of strategy and collective vision to carry the importance of reforms to the masses. Besides, the package of reforms will not be complete nor effective unless the same is supplemented by change in labour laws, creation of social security system to protect manpower voluntarily retired, a more humane HR policy, redefining of the new roles of labour and the capital and new initiatives to remove poverty and increase employment. The impact of the new reforms package has been summed up as meeting consumer needs and taking advantage of market opportunities in terms of quality, cost, on-time delivery of the product or service. This calls for focus on work practices and structural readjustment. Organisations require higher employee efficiency, upgradation of skills, a sound technical infrastructure and HRM initiatives.

Chapter two and five take up issues of as to how to build a new organisation and the role of strategic HRM to meet the new challenges. The authors have outlined a number of mechanisms and strategies for organisational transformation. These include reorganising the organisation structure (number of levels, jobs, reporting relationships, authority and power assigned), creation of strategic business units (SBU's) delayering (flattening of organisation's vertical boundaries) downsizing and empowerment. For PSU's the authors have proposed different steps for privatisation. Alliances and mergers have been advocated to obtain advantages of core

competencies, consolidation, expansion of product range, and leverage in marketing.

Strategic human resource management can play a vital role in creating new organisational structures and to synergise the efforts of its employees. It is necessary that there exists a linkage between the human resource function and the long term corporate objectives. The authors in a very practice-oriented chapter five, examine human resource system and stress the importance of our sub-systems that is Selection and Recruitment, Training and Development, Performance Appraisal and Performance Rewards. An effective HRM comprises an effective co-ordination, synergising and monitoring of these sub-systems. The authors have proposed action plans for implementation.

Chapter three deals with tools and techniques to bring continuous change in the organisation to achieve competitive advantage in the new economic environment. The authors rightly emphasise that human resource shall be the key asset of an organisation and HRM professional will be required to manage the change. The enterprises will require to continuously hone the skills of their employees, incorporate best of the practices and adopt working style of continuous learning and innovation. The authors then go on to describe two more important tools, benchmarking and business process re-engineering (BPR). Besides, the usefulness of other tools as Urgency Motivation, Human Resource Accounting, Human Resource Audit have been discussed.

Chapter four is well researched and provides thought provoking perspective on labour policy issues and problems confronting the industry in dealing with surplus labour and obsolete jobs arising out of technological upgradation or new skills. The authors have provided a historical perspective from the days of the freedom movement when the labour movement was an integral part of the struggle. The present day Indian labour policy and labour laws, the authors point out, are focused to protect the existing jobs. However, the economic policy based on deregulation, liberalisation and privatisation calls for restructuring downsizing and lean management making many jobs as redundant and several others of temporary nature. Besides, there will arise needs of closure of operations and redeployment of resources. The labour laws require changes to remove restrictions on retrenchments or premature retirements or firing of human resource. The authors have discussed at length the complex issues of retrenchment, exit policy and formulation of schemes as VRS and NRF. In the later half of this chapter, the authors have advocated reward and compensation systems to enhance productivity.

Chapter six provides a perspective on HRM in 2020. The authors have identified five issues which would create an impact on HRM in future. These comprise-Corporations of Tomorrow, Information Age, Virtual Corporation, Diversity and Social Responsibility. Cumulatively, these issues will create trends of change which will be visible in the form of: IT permeating every aspect of business increased emphasis on core competence increased emphasis on learning and upgradation of technology, a high degree of diversity and increased social responsibilities. The authors stress that HR professionals will have to accept these challenges and work towards creation of an employee friendly culture to promote efficiency and to provide personal satisfaction to each individual.

The authors are convinced that there is little doubt that liberalisation and globalisation will generally lead to a buoyant economy and that one has to be watchful of intense pain that change can cause to the affected society during this period of transition [Page 38]. HRM interventions proposed are to minimise this intense pain against a promise of bright future. However, many economists do not share this view. Nor does the performance of Indian economy over the last ten years since the process of liberalisation started reposes and confidence. On the contrary the situation has worsened. Business Today, {April 21, 2001, Page 82-83} reports two lakh sick SME's, a thousand suicides, mass migration of workers as units shut shop. This scenario has evolved only in the last few years since liberal economy has been introduced. Indeed, the authors also accept and point out that liberalisation has not been able to alleviate rural poverty; that most political parties believe that reforms will go badly with their voters [Page 37, 38]; that MNC's enjoy a distinct advantage of state-of-the-art technology, R & D, brand and capital. India is still faced with problems of uneven distribution of wealth, imbalance in regional development, absence of core sectors and insufficiency in self dependency. One may also caution that the demise of the communism, socialism diluted beyond recognition, a strongly enforced WTO regime and a highly forceful lobby of MNC's have also left no alternatives to the policies of free trade without any quantitative restrictions.

To meet international competition effectively, the manufacturing sector will require massive investment in technology and automation replacing the man with machine. Same will apply to agriculture. The future employment, therefore will not lie in manufacturing and agriculture sectors. Whatever reduced employment gets generated will be regulated through liberalised contract laws. The factories need not hire workforce on its rolls on permanent basis. It is said that service sector will dominate to contribute to GDP and the employment.

This shall comprise areas such as the hospitality – hotels, restaurants, travels, pubs, bars, beauty parlours, catering, flower shops, creches etc., hospitals and healthcare nursing homes, health resorts, weightloss clinics, physical therapists, homes for the aged etc and the much talked about software and the IT sectors. Will the HRM in service sector be anywhat different from the present day manufacturing dominated HRM? What indeed will be the role of HRM in situation where retention and long term employment will become events of past legacy? Rising unemployment, surplus labour, low purchasing power, liberalisation induced high prices of consumer goods would bring discontent to the doors of organisations adding one more challenge to HRM.

Transparency, large emphasis on performance, ethics, values are some of the guiding principles on which HRM is founded. What happens to these practices and the role of the HR professional if the country and its systems are embedded in grease economics. India has been rated at 69th rank (1st rank is most honest) out of 90 countries ranked by Transparency International Corruption Perception Survey for 2000 (Refer Page No. 35, Business Today, Oct, 6, 2000). Most of the employees are aware and many involved in these practices in their own organisations which have to exist in the national supra-system of this economy. A discussion on these issues would have made this book of contemporary value.

The strategies and the tools described (chapter two to six) to build a new organisation more efficient and responsive to competition are valid, liberalisation or no liberalisation. Many of these techniques have been practiced by companies with success. The authors have cited several real life examples viz. NICCO, ICICI, Indian Aluminium, Air India, SAIL, Unilever, Procter & Gamble etc. These examples and names should encourage HR practitioners to emulate them. The book should also stir a variety of readers who are interested in change and seek strategies for the same. The authors have made out a clear case for a national policy to tackle poverty and unemployment. Liberalisation has come to stay. It is the political leadership which has to take a lead to address these issues. In this context the book provides a good analysis for all those who are involved in formulation of national policies. It should prove to be a good addition to the existing literature on the subject.

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Top Management Forum "Features of Excellent firms – Experience of Quality Award winning firms" published *by Asian Productivity Organisation*, Tokyo Pages 124, Price not mentioned, year of publication 2000.

Excellence and world class standards, can be achieved by managements adopting innovative policies, strategies and action programmes. The managements have also been motivated in this direction by respective nations by instituting awards such as European Quality award, the British Quality award, the Japan Quality award, Malcolm Baldridge National Quality Award etc. This publication has been brought out by Asian Productivity Organisation, located at Tokyo, which is an intergovernmental regional organisation established by convention in 1961, to increase productivity in the countries of Asia and the Pacific, through mutual cooperation. APO has been organizing the annual top management forum for the last 15 years. The 1999 forum was organized by APO to discuss top management programmes for attaining world class standards of business excellence. In this forum, Quality award winning firms were invited from Japan, Asia and Europe. Senior persons from each of these firms, presented their experiences. The above publication is a compilation of these presentations.

The book has 10 chapters in Part-I entitled presentations (in which there are 7 case studies, one each from France, China, Philippines, Malaysia and Singapore and 2 from Japan), followed by a list of participants and resource persons and programme and schedule in Part-II entitled Appendices. The Foreword has been written by Takashi Tajima Secretary-General APO. The first presentation gives an idea about Japanese Management Renovation and innovations in corporate culture in areas of consumers initiative, Quality and systems. It goes on to explain the criteria of Malcolm Baldridge National Quality Award and the Japan Quality Award. The second presentation is from Philips Singapore Pvt. Ltd. Their strategy included – leadership and a quality culture, use and analysis of information, strategic planning, human resources, development and management, management of process quality, quality and operational results and customer focus and satisfaction. ST Microelectronics (France) implemented TQM. Besides Management's conviction and commitment, other important elements utilised were resources, guidance, promotion, training, motivation, recognition, cross-fertilisation, measuring progress with management continuing to work on newer elements for future.

At Subang Jaya Medical Centre, Malaysia, quality in health care achieved has got them ISO-9002 certification and P.M.'s Quality Award. This has been ensured through quality physicians and other resources, quality

technology, quality partnerships, customer satisfaction and customer feed back, infection control measures, team work etc. In Inventec group China, company philosophy is focused on innovation, quality, openness, dynamism and mission. They achieved success in the form of several awards including ISO-9001 certification, through TQM, Re-engineering, Bench- marking, continuous innovation etc. and want to face future challenges with pathbreaking innovations. Asahi Breweries Ltd. Japan have the philosophy of satisfying customers with the highest levels of quality and business integrity. They achieved highest quality levels through determining customer needs, total fresh management movement, public relations activities, customer feedback and environmental preservation. The seventh presentation is from data General Philippines Inc. Philippines. They have achieved high quality levels through introduction of Quality control circles, TQM, focus on customers, customer satisfaction, quality management council, process management, empowered employees etc. Chiba Isumi Golf Club's (Japan) success in achieving Japan Quality Award is due to identification of customer criteria and meeting the same (as a philosophy), PDCA management, setting of individual goals, self assessment, approaches to customers and the market, improvement process, information gathering and sharing etc. The ninth presentation is from University of Tokyo, on Ecoethics for the future. It seeks to determine the moral perspective on which to take decisions in the 21st century. The tenth presentation by Chukyo University Japan sums up all the above presentations, Management must think continually of changes in technology, expanding knowledge base, collaborations, building up skills and integrating with company activities with the objective of improving competitiveness of the company.

Each of the chapters has been properly organised with introduction and conclusions. The book contains 7 tables (in 3 chapters), 57 black and white figures (in 8 chapters). On the whole, the compilation is very useful for various industrial organisations and productivity personnel. It is essential reading, since it gives new insights on how excellent business corporations have approached the design and development of creative management systems and organised their internal restructuring for higher productivity and competitiveness.

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"Energy Management Challenges for the next Millennium" *by Pradeep Chaturvedi*, Concept Publishing, New Delhi, Pages 240, Year of publication 2000.

Pradeep Chaturvedi is working as a consultant in International Centre for Application of Energy, United Nations Industrial Development Organisation and has served in different national and international institution's in various capacities. He is a known expert in renewable sources of energy. Chaturvedi is a prolific writer and has to his credit nearly 29 books and numerous articles related to energy and its allied areas. This book "Energy Management Challenges for the New Millennium" is a compilation of the excerpts from presentations made by the author in various gatherings on issues pertaining to energy.

The author starts on a firm note, presenting in brief the energy scenario in India and touches upon the distribution of energy resources in the different regions of country, energy production, supply and consumption. He illustrates the reforms initiated in the power, oil, coal sector and gives the projected energy demand in the year 2020. Chaturvedi stresses the importance of R&D in technology in development of energy efficient systems. He advocates strongly the necessity of collaboration between R&D institutions and different agencies viz government, utilities, manufacturers etc. to enable generation of power through environmentally benign technologies, to promote fuel substitution, to improve end use efficiencies, to increase the dependence from fossil fuels to renewable sources etc. In any case, technologies will play an important role, but in themselves will not be able to fix all problems.

As energy comprises 5% of the world's GDP, more the efficient use of energy resources, the greater is the efficiency that can be injected into remaining 95% of world output. He highlights the initiatives taken by government in promoting energy conservation and mainly quotes statistics on it. At times, one feels exhausted going through the pages on energy and environment modeling. As the author switches to role of information technology(IT), one feels relieved and excited over the subject. He vividly describes the influence of IT on issues pertaining to energy and has aptly quoted that IT holds the key to development in next millennium. Its application could be in the areas of delivery and monitoring of energy use, integrating energy supply and scheduling of activities with reference to time etc.

India is one of the highest wood consumption country in the world and its percentage of forest stock is 2.5%, which is well above 0.3% required for normal growth of the forests. This problem of forest depletion can partially be addressed by proactive approach of

using other locally available biomass, improving the efficiency of use, fast growing energy plantations etc. Biomass is a renewable source of energy and can cater to vast majority of the rural population of India. However, the problems relating to its utilisation persist as conversion efficiencies are low. It is predominantly used in unorganised sector and households and contributes around 33% of the energy consumption. The necessity of broadening the areas of biomass use may be driven by factors like environmental pollution, fuel substitution, depletion of oil resources etc. In Brazil, biomass derived fuels are being used in the transportation sector. The pollution reduction through this fuel substitution as demonstrated in some large cities of South America may be worth emulating in the major cities of India, which are plagued by high air pollution levels.

For success of any campaign for effective use of biomass, involvement and support of people is essential. In a country like India, where near about 65-70% of the population are in rural area, it is the need of the hour to promote and take up integrated rural energy programme (IREP) on a massive scale and in the right earnest. IREP should lay emphasis on technologies needed to utilise locally available resources and this requires knowhow, training and financial support from different government bodies and NGO's. These programmes would be successful only if the people consider them to be beneficial and participate in them as their own. One example of technology acceptance by rural people is the installation of biogas plants in large scale, approximately 27 lakhs (family owned) and 2300 (community owned) biogas plants have been installed in India. Biogas plants effectively utilise organic byproducts to produce biogas which in turn can be utilised for domestic requirement (cooking, lighting etc) and as well as generate good amount of organic manure, which can supplement/replace the nitrogenous fertiliser.

The author also describes the areas of applicability of solar energy in the domestic household (for comfort requirements) and agricultural (for farm products) needs. The demonstration described, would have been more appealing with use of photographs/ pictures.

Conspicuously, the author does not touch the aspects relating to captive power plants, independent power plant and energy bill (in detail). Also the challenges faced by state electricity boards in the coming millennium could have been discussed, with specific reference to the restructuring programme initiated by some of them. The SEBs have a catalytic role in promoting new technologies which improve energy efficiency and reduces the pollution load as well.

The initial interest generated after one goes through the first chapter "Energy Scenario in India" could not be sustained. This can be attributed partially to the repetition of the same contents (like energy demand projections etc) again and again in virtually every chapter. Nevertheless, for one who is not particular about the continuity, this book can be interesting, informative and absorbing only if one picks up some of the articles viz. chapters. Especially, the chapters on information technology for the energy sector, south asia regional cooperation in energy sector, environmentally friendly energy supply from biomass in next millennium, biomass the sustainable energy source for south asia, biogas and recent experience with anaerobic digesters in India and people's participation in integrated rural energy programme in India are exhaustive and appealing as these come based on the author's experience and vast knowledge in these subject areas.

The book may be of good use for professionals in renewable energy. It will interest consultants, engineers, practicing professionals, planners, and environmentalists, too.

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'Wastewater Reclamation and Reuse', *Edited by Jawad Al-Sulaimi, and Takashi Asano;* New Age International (P) Ltd; 2000; Pages 314; Price Rs. 750.

In this book, selected papers presented at the workshop on Wastewater Reclamation and Reuse at the Arab School of Science and Technology, Kuwait are assembled and edited. In the beginning the fundamental concepts of wastewater reclamation and reuse are developed that include categories of water reuse, planning methodologies, economics for water reuse and technological innovations for safe use of reclaimed wastewater. The paper emphasizes integration of reclaimed wastewater into water resources planning and presents a review of several landmark studies that have provided sound technical basis for the safe use of reclaimed wastewater for various uses. Through integrated water reuse planning the use of reclaimed water may provide sufficient flexibility to allow a water agency to satisfy short term needs as well to increase water supply reliability. Next, the concept of decentralised wastewater management in water resources development is discussed in detail. The role of decentralised wastewater management is assessed with respect to wastewater treatment, reclamation and reuse. Technologies for wide range of reuse applications from large centralised systems to individual homes are discussed in short. The

book also presents a brief overview of wastewater reuse in the United States.

Water quality guidelines for wastewater reuse in irrigation and for recharge of ground water with respect to trace organics and pathogenic organisms is explained and evaluated. A case is presented on the use of reclaimed wastewater in the Mas Nou golf course, Kuwait, This highlights the agronomic and public health issues of reclaimed water quality for landscape through case study. The book comes out with proposed guidelines for ground water recharge with reclaimed municipal wastewater with special reference to controlling trace organics and pathogenic organisms. Deterministic and probabilistic approaches to the design of ultraviolet (UV) disinfection systems are provided and discussed in length. The information presented would be very useful to experts in the field of purification of reclaimed wastewater.

Next is a detailed assessment of the characteristics of industrial wastewater effluents in Kuwait and also the sources, quantity of industrial wasters with special reference and considerations to a number of overlooked waste producers from private and public institutions that need to be assessed in order to have an effective waste water control in Kuwait. The book describes treatment and reuse options which are viable in aridland countries like Kuwait, and recommends treatment criteria for different uses. It also describes in detail the different treatment technologies and experiences that have been demonstrated in Kuwait for treatment of industrial wastewater. Public health aspects of wastewater treatment and reuse in Kuwait with respect to organic, inorganic and biological pollutants have also been highlighted.

Next comes an overview of the quality and quantity of municipal wastewater generated and excess sludge produced in Kuwait. The performance of the three wastewater treatment plants at: Ardiya, Jahra and Rekka have been reviewed. The overall aspects of wastewater management in Kuwait and aspects like sanitary master plan present master plan scheme, sewer renovation program, treated effluent reuse are reviewed. The book highlights the usage of treated sewage effluent in landscape irrigation and beautification purposes within and around Kuwait City in particular for highway site, major roads and internal roads. It briefs the merits and demerits of reuse of sewage effluents for irrigation and comes out with recommendations on water quality for reuse in irrigation with special reference to trace elements and microbiological quality. A case has been studied, where four plant species were grown on wastewater fortified with three different iron chelates. The experimental results on the comparative growth of plant species grown are presented.

The book highlights improvement of wastewater quality by Soil Aquifer Treatment (SAT). The SAT concept represents a modern approach to an old method of wastewater reuse. The book examines the suitability and usefulness of SAT method for Kuwait. Next is a case study on application of Reverse Osmosis (RO) in municipal wastewater desalination. The case describes preparatory work at the Ardiya site, in Kuwait, for operation of the RO unit, experimental results, problems and proposed solutions with some preliminary results obtained from operation of the RO plant. The information provided in the case is very useful to experts in the field of tertiary wastewater treatment.

The book describes the elimination-concentration procedures for metals in domestic wastewater, treated water, sludge and soil. Two types of biological waste treatment: high and medium organic loads were considered for the experimentation, the results of which are presented. The use of excess sludge from municipal wastewater treatment in land application/soil conditioner is also presented. The effect of sewage sludge and the products of its biodegradation on changes to soil physical and chemical properties is discussed and qualitatively assessed. The sewage sludges nutritional benefits and its potential hazards as soil conditioner is also presented.

This book covers the entire aspects of wastewater utilisation, that is, the generation, collection transfer and transport, treatment, disposal and reuse of wastewater. It also focuses upon the relevant issues related to wastewater reclamation and reuse of water like public health, economics, aesthetics and other environmental factors. This book is targeted at environmental engineers and city planners. It is useful book in the field of modern wastewater reclamation and reuse practices from wastewater to reclaimed water to purified water. The book will contribute to a wider acceptance of wastewater reclamation and reuse practices and promotion of more efficient use of scarce water resources in India.

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'Public Services through Private Enterprise: Micro-privatisation for improved delivery' *by Malcolm Harper,* Vistaar Publications, New Delhi, 2000. Price Rs. 450.

It is no exaggeration, that cigarette and Coco-cola are available in every village, while the inhabitants hardly have facility for clean water, primary education, primary health and sanitation. Some explain this paradox by

saying supply of essential services are inadequate while some others say it is grossly inequitable. The blame, of course, goes to inefficient government machinery (system) or the unscrupulous private sector depending on the nature and structure of services available in the reference unit and the cost and other hurdles to access such services. Yet it is believed however, that the situation can be improved by system corrections or by entrusting such services with those who have the wish, inspiration and experience to do it better.

It is obvious that there is no second opinion, whatsoever, on the crisis of public services/utility provision by enterprises sponsored by the state and the agony caused to the users thereof. General understanding on the cause of such crisis has been the natural monopoly enjoyed by the public enterprises in providing such services and utilities. It is hence a logical inference in the liberal circles that private sector can emerge to exploit the natural monopoly of public enterprises and provide public services more efficiently. Inhibitions remain, however, at rational quarters like system constituents and beneficiaries on the actual/probable outcome of such an initiative. Probable reasoning behind this inhibition has been that the first generation economic reforms which are currently on the move in many developing countries are incapable of predicting the probability of improving these services by privatisation—as this comes under second generation reforms. These inhibitions and prejudices perhaps, hamper the speed of second generation reforms which have to shoulder the decentralisation and privatisation of public services and utilities—for its pros and cons—deleterious or otherwise. Looking at the prospects of betterment of the services and utility provision, really it becomes difficult to predict the approach of the private sector to different service users. There is a general notion that the private sector discriminate between the big and small users of public utility and services, perhaps due to reasons assigned to corporate financial considerations (viability of operation). Given the situation of crisis and confusion on the options to manage public services and utilities in a transition economy, the book under review is a spectacular manual for drawing useful inferences from real life situations and rational logistics to establish the scope of micro-privatisation in different service/utility areas for improvement and efficiency.

The most impressive feature of this book has been that it is the culmination of the research findings from a cross-section of public services and utility areas across heterogeneous regions and locations for present levels and scope of private participation. Real life case studies covering various sources of public services and utilities in different socio-economic situations have been documented. The case studies range from the market management in Kampala (Uganda) through clinics of sex workers in Nicaragua to schools in West Bengal. It is needless therefore to mention the coverage and potential of this book to draw useful inferences and examples for practical purposes. Further, the analysis and scope of the book range from defining the term 'public service' to the final service provision and the public accessibility levels in concerned regions and areas, depending on the nature and structure of the services. This enhances the credibility of the book more among practitioners while academics could extend their rationale for further refinement of understanding and approaches.

To be more precise, what the book (case studies) identifies is the real issues and system constraints (rigidity) attached with public enterprises at present in carrying out the activities at its desired level. Simultaneously it conveys the flexibility of the private sector in undertaking these tasks more effectively. Studies on street cleaning and garbage collection in Hyderabad (India), Dar es Salaam (Tanzania), solid waste recycling in Manila (Philippines) etc. are few examples to quote from the book towards evidence of the above view point. Utility case studies on water, electricity and communications are eye opener for developing countries for the direction of second generation reforms to be effected. Public telephone services and rural electricity in Orissa are interesting cases in this book. As the book deals with almost all vital service sectors, it is for sure that the information provided in the book is almost a benchmark to build up the future direction and dimension of public services provision through micro-privatisation. In a nutshell, the 24 case studies documented in this book carry different aspects of micro-privatisation, its scope and options for improvement. Further the book defines the service provider after privatisation, relationship between the public provider and the entrepreneur (s), economic benefits to entrepreneurs and their employees. As there can be no universal prescription for micro-privatisation to be effected, what the book presents is a series of possibilities, leaving the scope for the respective governments to determine.

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Book Reviews

News & Notes

Excerpts from Convocation Address: "On Becoming Managers"

by N.R. Narayana Murthy Chairman and CEO Infosys Technologies Limited Bangalore, India at IIMB, Bangalore.

"Let me start with the **first theme**. As I stand here, I have mixed feelings about the fifty-odd years of post-independence India. Surely, there are many successes—we have produced world-class scientists and engineers; built bridges, dams and factories; sent up satellites and rockets; and created nuclear weapons. However, we need to ask the fundamental question of whether we have lived up to the dreams that our founding fathers had for India. A dream that they sacrificed so much for—an endeavour to create: an India where every individual will be free and provided with the wherewithal to develop and rise to his/her fullest stature; an India where poverty, ill health, illiteracy and ignorance will have vanished and where meritocracy thrives...

My young friends: today, we have political freedom but we still do not have freedom from hunger, illiteracy, and disease. Let me give you a few statistics about present-day India.

- A billion people
- 28% urban and 73% non-urban
- Per-capita GDP only at around USD 2,000, with 44.2% of the population below the income poverty line
- Adult literacy rate at only 56%
- Life expectancy of only 63 years
- 128th on the Human Development Index (out of 174 nations)
- 200 million people do not have access to safe drinking water
- 250 million people do not have access to health services
- 700 million people do not have access to sanitation
- About half our children are underweight and undernourished
- About half our primary schools have one class teacher for every two classes

Further,

- The chasm between the haves and the have-nots has been increasing
- Unlike China, population control has more or less been ineffective
- Educated engineers, managers, and scientists are deserting India in a hurry.

What are the reasons for this sorry state? There are many reasons, but the two most important ones are:

1. We have not created a political leadership that can create a vision, that can raise the aspirations of people, that is honest, that can dream world-class, and that understands how the world is moving.
2. The need of the day is management, and not mere administration. We need a bureaucracy that is accountable and is evaluated and rewarded for specific contributions, and not one that faced competition only at the time of recruitment. An administrative mindset, rather than a management-oriented mindset in the bureaucracy, is a key reason for the state of our nation today."

Thus, the need of the hour is to have leaders who

4. Convince your corporation to adhere to global standards of corporate governance in order to attract the best investors to your corporation

5. No corporation can sustain its success unless it can make a difference to society. Remember the Late John F. Kennedy's words: If a society cannot help the many who are poor, it cannot save the few who are rich. Ensure that your corporation makes a difference to society-at-large.

6. Remember that technology is the key to success. Leverage the latest technologies to retain your competitive advantage by reducing time and cost to market. Use technology to do what-if simulations to avoid real-life pitfalls

7. In these days of globalization, cross-cultural expertise has become very important for overseas operations as well as for negotiations. Focus on building these capabilities

8. In all these years, our marketing experts have not yet created a single powerful international brand. Strive to do it.

9. You, as a corporate leader, will be measured on the predictability of your revenues, the sustainability of those predictions, the profitability of your business, and the de- risking of your corporation in every function of its operations. Put a good de-risking model in place

10. Remember that solutions to most of your problems are in your mind. As my friend, Mashelkar, says: "The struggle is between the mind and the mindset." You have to win this struggle if you want to succeed

Finally, leadership is all about raising the aspirations of your people. It is about making people believe in themselves, enabling them to become confident and positive-minded, and thereby going on to achieve the impossible. I have no doubt at all that you will all become great leaders, and make this country a better place for future generations."

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We are failing to get value out of our businesses if we don't spend attention and resources on getting knowledge and best practices around the company.

– Stephen Huggins

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