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From the Chief Editor

PETER DRUCKER (1909 - 2005): An Enduring Asset to Management Research and Applications

"Management means, in the last analysis, the substitutions of thought for brawn and muscle, of knowledge for folkways and superstitions, and of cooperation for force. It means the substitutions of responsibility for obedience to rank, and of authority of performance for the authority of rank."

- Peter Drucker

The history of Human civilization is replete with glorious examples of application of the Principles of Management. The Practice of Management is probably as old as human civilization. Indeed, Individuals have been applying management techniques, in one form or the other, ever since they began to work together in groups to achieve some common purpose. The building of the Taj Mahal in India, the pyramids in Egypt or the Great Wall in China called for management - of money, people, materials and time - the very same resources that managers of today must work with to achieve their goals. The empires of the past could not have survived without management - and when they crumbled, they often crumbled due to bad management.

However, as civilization progressed, the scale and ambition of human endeavors became much grander and the organizations that came into being to achieve these objectives became more and more complex. The birth of modern management can be traced to the organizations - still fairly simple and unsophisticated in comparison to the giant corporations of today - that arose and grew out of the industrial revolution. Management as a discipline took on the form that is taught in business schools only in the last century, when these organizations became large and complex, with multiple products and services, with operations in diverse and distributed markets. To manage this complexity and direct the efforts of all the organizational constituents to common objectives, sophisticated tools and techniques to plan, monitor and control organizational activity become necessary. As these needs evolved, so did the discipline of management.

The evolution and the growth of management thought over the past century was largely a contribution of the iconic *Peter Ferdinand Drucker (1909 - 2005)* recognized as the greatest Management Thinker of the twentieth century. In this centenary year of Peter Drucker, who in his 48 publications spanning over 66 years between 1939 and 2005, focused on the symbiotic relationship between the practice of management and it's concepts - who forever believed that management concepts are derived from applications and not the other way round - we humbly dedicate the inaugural volume of the *NSHM*

NSHM Journal of Management Research And Applications to the everlasting memory of *Peter Ferdinand Drucker.*

Peter Drucker was born on November 19, 1909 at Kaasgraben, Vienna, Austria. He died on November 11, 2005 at Claremont, California, USA, leaving behind a rich legacy for the human kind. Among Drucker's early influences was the Austrian economist Joseph Schumpeter, a friend of his father, who impressed upon Drucker the importance of innovation and entrepreneurship. Drucker was also influenced, in a much different way, by John Maynard Keynes, whom he heard deliver a lecture in Cambridge in 1934. "I suddenly realized that Keynes and all the brilliant economic students in the room were interested in the behavior of commodities," Drucker wrote, "while I was interested in the behavior of people."

Indeed, over the next 60 years, Drucker's writings have been marked by a clear focus on interpersonal and inter group relationships among human beings, as opposed to the crunching of numbers. His books were filled with lessons on how organizations can bring out the best in people, and how workers can find a sense of community and dignity in a modern society organized around large institutions.

His career as a business thinker took off in 1942, when his initial writings on politics and society won him access to the internal workings of General Motors (GM), one of the largest companies in the world at that time.

The resulting book, *Concept of the Corporation*, popularized GM's multidivisional structure and led to numerous articles, consulting engagements and additional books. GM, however, was hardly thrilled with the final product. Drucker had suggested that the auto giant might want to re-examine a host of long-standing policies on customer relations, dealer relations, employee relations and more. Inside the corporation, Drucker's counsel was viewed as hypercritical. GM's revered chairman, Alfred Sloan, was so upset about the book that he "simply treated it as if it did not exist," Drucker later recalled, "never mentioning it and never allowing it to be mentioned in his presence."

Today when GM has filed Bankruptcy petition in US courts, we have come to realize how relevant Drucker was. He taught that management is "a liberal art," and he brought about a synthesis between management thought and inter-disciplinary inputs from history, sociology, psychology, philosophy, culture and religion. He also believed strongly that all institutions, both in the public,and the private sector, have a responsibility to society since according to him, society was indeed, a major stakeholder of business. "The fact is," Drucker wrote in his 1973 magnum opus, *Management: Tasks, Responsibilities, and Practices*, "that in modern society there is no other leadership group but managers. If the managers of our major institutions, and especially of business, do not take responsibility for the common good, no one else can or will."

In this tribute to Peter Drucker we would attempt to discuss some of the key insights that he has shared with us in his books. We are well aware of the fact that it is practically impossible to review or even summarize the entire gamut of his thoughts in the brief span of this editorial. What we have attempted is just a glimpse of one of the greatest management thinkers who changed the way we work and live by referring to some of

The Adventures of a Bystander

Peter Drucker has been writing for approximately 66 years, about everything from management and economics to philosophy and politics with a nonconformist perspective on business and society that continues to catch the attention of followers. But in the autobiographical classic Adventures of a Bystander - considered the best of his 29 books by both readers and Drucker himself - the spotlight is turned around to illuminate those he met along the way, who best exemplify his envisioned ideals of pluralism and diversity. Among them stand out: Sigmund Freud, Henry Luce, Buckminster Fuller, Marshall McLuhan, Fritz Kraemer, and "the man who invented Kissinger." - Howard Rothman.

The Practice of Management

This book published in 1954 was his most famous book. This classic volume achieves a remarkable appeal without sacrificing scientific accuracy or depth of analysis. It is a valuable contribution to the study of business efficiency which should be read by anyone wanting information about the developments and place of management, and it is as relevant today as when it was first written.

This book was written out of many years of experience in working with various types of managements. It aims to be a management guide, enabling readers to scrutinize their own work and performance, to analyze their weaknesses and to improve their own effectiveness as well as the outcome of the endeavor they are responsible for.

Managing for Results

A successful innovative company is always awake to spot the opportunity in its environment. They not only spot opportunities, but also believe in creating one. Peter Drucker says, "Opportunity is not created; opportunity is where you find it". Peter Drucker, in his book, "Managing for Results," suggests a focus on opportunities rather than on problems. He proposes three opportunities - adaptive opportunity, complementary opportunity and breakthrough opportunity which enable sustainable growth.

Drucker stresses the importance of combining specific economic analysis with a grasp of entrepreneurial force in business prosperity. This influential book on management focuses on the qualitative aspect of enterprise viz. innovation, leadership, staffing, resources, revenues, prospects. The author takes a stand that the customer is the business. It is an irony that many companies tend to forget this simple but profound fact. He also writes that knowledge is the business. Though written quite some time back, this has assumed great relevance in today's knowledge economy. It is also a reminder that business is a rational pursuit and that the executive in business has a very important contribution to make to the society.

The Frontiers of Management

This book is a compilation of 35 previously published articles and essays, 25 of which have appeared on the editorial page of the Wall Street Journal. Drucker uses a common theme to bring them together - the kind of tomorrow we will have depends "on the knowledge, insight, foresight, and competence of the decision makers of today." His articles are put into four parts: Economics, People, Management and the Organization. Each part presents Drucker's views on the course we are or should be going to meet the challenges of the future.

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- A belief that taking action without thinking is the cause of every failure.

- He acknowledged that his initial concept of plant community never materialized and by the 1980s, suggested that volunteering in the non-profit sector was the key to fostering a healthy society where people found a sense of belonging and civic pride.

- The need to manage business as balancing of a variety of needs and goals, rather than subordinating an institution to a single value. This concept of management by objectives forms the bedrock of his 1954 landmark "The Practice of Management".

- A company's principal accountability is towards its customers. Income is not the primary goal, but rather an indispensable condition for the company's continued existence.

- An Organization should have an appropriate approach for executing all its business processes.

- A belief in the notion that great companies could stand among mankind's noblest inventions.

- The chapter "The Sickness of Government" in his book "The Age of Discontinuity" formed the basis of the New Public Management, a theory of public administration that dominated the discipline in the 1980s and 1990s.

Academe - Industry interface is a shared value at NSHM Knowledge Campus. The NSHM Journal of Management Research and Application is a manifestation of this shared value. I invite management researchers, professional managers, students and faculty to participate in this unique and exciting adventure of sharing knowledge and adding value to each other's learning.

Santanu Ray

Message from the Coordinator -
Business Research and Information Centre

Dear Friends,

We at Business Schools are always concerned with training our students to become future business leaders - providing them with cutting edge inputs that are industry oriented. But to reach and remain in the know and alive to every situation necessitates that the knowledge workers in the community be constantly in touch with research and at the same time draw on the experiences of the corporate decision makers. This involves not only reading up on current research work and awareness of the best and latest practices in the diverse fields of management sciences but also preparing and publishing one's own work on the scholarly platform. To facilitate the pursuit of this ever continuing goal, the Business Research and Information Centre at NSHM Business School is launching the NSHM Journal of Management Research and Applications that aims at becoming the leading platform for the management academicians and practitioners interested and working in the areas of general management, corporate strategy, policy and governance; finance, corporate laws; public policy; IT and systems; marketing; technology and manufacturing and related areas like economics, sociology and other social sciences. The broad spectrum of interest is intended to reflect and capture the multi- and inter-disciplinary nature of management studies and to highlight the fact that management training is not only about efficient decision making but producing socially responsible decision makers as well.

The Journal will focus on scholarly articles based on primary research as well as best practices pursued in the industry. It will also consider and publish interesting and timely case studies that will reach out to a wide audience including students and practitioners.

I hope that we will keep receiving exciting submissions from you along the way as we grow from strength to strength.

Happy using of our grey cells!

Rajlakshmi Mallik

Porter's Generic Strategies and their Application in Supply Chain Management

Inder Jit Singh Mann*, Vinod Kumar,
Uma Kumar & Hanuv Mann

Abstract

Michael E. Porter started a new phase in strategy field by his writings on competitive forces. This paper examines his generic strategies and models. An attempt is made to understand whether these models can be applied to a supply chain, rather than a firm or an industry. It is seen that Porter's models need to be re-conceptualised or modified to make them more applicable in the field of supply chain management.

Keywords

Supply chain management, Porter, Generic strategies.

Introduction

Michael E. Porter can be said to have started a new phase in the strategy field in 1979 by his first Harvard Business Review article "How Competitive Forces Shape Strategy", followed up by his books in 1980, 1985 and 1990[1]. "Porter's five forces" have been a dominant paradigm in strategy for the last three decades. In Porter's analysis of industries, the inter-play of five forces make the attractiveness of industry, the main factor on which a firm's profitability depends. If the industry is good, the firm will perform well, that is Porter's basic paradigm. However, it is seen that even in the same industry not all firms do equally well, some do better than the others. As these differences cannot be explained only by industry structure, which is common to all the firms, Porter suggested that above average returns can be secured by a firm by following distinct generic strategies. Porter identified mainly three types of generic strategies: cost, differentiation and focus. Focus, the strategy to target a niche market, can rely on either cost focus or differentiation focus. Porter suggested that following a pure strategy is better than getting "stuck in the middle", where a mix of strategies leads a firm to an average or below average

[1] Porter, M.E. (1980) Competitive Strategy: Techniques for Analyzing Industries and Competitors, New York: Free Press.
Porter, M.E. (1985) Competitive Advantage: Creating and Sustaining Superior Performance, New York: Free Press.
Porter, M.E. (1990) The Competitive Advantage of Nations, New York: Free Press.

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results. Porter's paradigm caused firms to identify, chart out and implement specific pure strategies. This in due course brought attention to the pure versus hybrid strategy question. Porter also tried to find an answer to the question as to how value is added by a firm to create competitive advantage. Porter posited a value chain that creates value for the firm. Distinct from supply chain, all activities of the "value chain" remain within a firm, while the supply chain operates across firms, even though the aim of both the "chains" is to provide a service or product to the customer at a profit. With increasing emphasis on supply chains the questions arises whether Porter's industry analysis, using five forces model, his generic strategies and value chain concept can be adapted to "supply chain management" or whether the concepts have limited use in such a setting.

Porter's models have been popular and have been used by many academics to solve conceptual problems, and by many managers to solve real life problems. Porter's work mainly deals with the "what" of strategy, or the strategy content; this focus may be contrasted with "where" questions dealing with strategy context; and with the questions of "how", "who" and "when" that relate to the strategy process on which research has been conducted by academics such as Mintzberg and Waters (1985), Quinn (1989), Mintzberg & Lampel (1999) and Elbanna (2006). Interestingly the models put forth by Porter are concise and simple, which is far from the nature of strategy formulation process, as in practice the strategy formation process is rather complex (Quinn, 1989; Mintzberg and Lampel, 1999).

Supply chains are becoming increasingly important in today's business landscape (Gunasekaran et al., 2001). Well-integrated supply chains increasingly tend to behave as distinct strategic entities and oftentimes even as a new, evolving form of organizations (Mann, Kumar, Kumar and Mann, 2008). Since 1979, Porter has been a dominant force in the field of strategy and his theories have focussed on the firm as an industrial organization as well as on the comparative advantage of nations. It will be interesting to apply Porter's constructs to the emerging phenomenon of supply chains.

In this paper we revisit Porter's Five Forces Model, Porter's Generic Strategies, Porter's Value Chain Analysis and Porter's Diamond of National Advantage, while making an attempt to understand whether these models can be applied to a supply chain, rather than a firm or an industry. The issues faced in this attempt are analysed to identify the areas that need further research.

Porter's Models

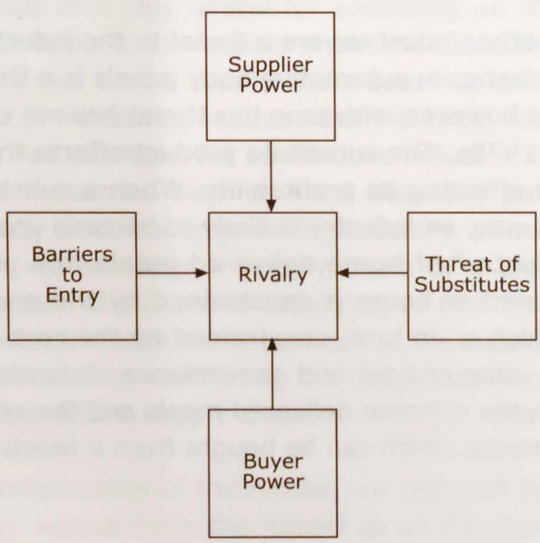
This section briefs the Porter's Five Forces Model, Porter's Generic Strategies, Porter's Value Chain Analysis and Porter's Diamond of National Advantage and discusses their possible applicability to supply chains.

Porter's Five Forces Model for Industry Analysis

When paying for gas at a gas station it is evident even to a layman that some industries are more attractive and profitable than others. But when one has to invest substantial sums of money for longer periods, a deeper analysis is needed. For taking strategic decisions at that level, Porter proposed a model for industry analysis generally known as "Five Forces Model". Overall this model is an useful tool for analysing whether an results. Porter's paradigm caused firms to identify, chart out and implement specific pure strategies. This in due course brought attention to the pure versus hybrid strategy question. Porter also tried to find an answer to the question as to how value is added by a firm to create competitive advantage. Porter posited a value chain that creates value industry is attractive enough invest in. However, once a decision is made to enter the industry, a more detailed firm-specific project analysis would be needed to take further action. For existing firms operating in an industry this model is useful to understand overall industry scenario and to formulate and implement an effective strategy.

The five forces Porter used to analyse an industry were identified as competitive rivalry within the industry, barriers to entry, threat of substitutes, the power of buyers and the power of suppliers (Figure 1).

Figure 1: Porter's Five Forces
(Source: Porter, 1980)



Competitive Rivalry

Inter-firm competitive rivalry may differ across industries. The rivalry may be weak, moderate or intense. Severe competitive rivalry tends to drive profits down and may result in disadvantage to all the players in the industry. To counter rivalry a firm strives to secure a competitive advantage vis-a-vis other firms in the industry in order to make above average returns. High industry concentration, measured by a concentration ratio (CR), indicates that a higher market share is held by the biggest firms, and in such a circumstance the industry may resemble an oligopoly. A low concentration ratio indicates that there are many rival firms in the fray, each holding a low market share, and the market is fragmented and competitive. As discussed above, higher levels of rivalry tend to drive profitability down and make the industry less attractive. On the other hand when inter-firm rivalry is low, the industry may look attractive. In low rivalry conditions the firms may follow an informal code of conduct or even enter into collusion. A new entrant may disturb such a "disciplined" market to establish a competitive advantage. Such a disturbance is likely to lead to a chain reaction of counter-responses which would drive the market into a higher rivalry state.

Barriers to Entry

In an industry if entry and exit were free, a large number of new firms would enter the industry when profitability is high, driving down the profitability. Once the profits are reduced to a nominal level some firms are likely to exit. In face of such a theoretical possibility, high levels of barriers to entry in an industry tend to protect the high profits of existing players making such an industry attractive. Additional rivals are inhibited from entry by such barriers. Such entry barriers are distinct from normal market reactions which attract new entrants to a booming industry and make them leave when profits are down. These barriers to entry are unique for each industry and they help existing players to maintain a high level of profit while they dissuade the new entrants. Firms in an industry can create and/or exploit such barriers to entry for their competitive advantage. Barriers to entry can arise from government regulations, patents, intellectual property rights, high asset specificity, high entry or exit costs, restricted distribution channels, high switching costs for customers and economies of scale.

Threat of Substitutes

Substitute products from other industries are a threat to the industry under consideration. For example, the use of plastics in automotive body panels is a threat to alloy steel sheet products in steel industry; however, with time this threat has not emerged to be as strong as it was feared in early 1970s. The substitute product affects the price elasticity of the original product, thereby affecting its profitability. When a substantial number of "cash cows" are affected in this way, an industry is likely to become unattractive. For example, consider the niche "industry" of home delivered meals, the price that Dominos can charge for a pizza delivered at home is constrained by the price of frozen pizza in a nearby grocery store, which is, in turn, constrained by the cost of a home baked pizza when one factors in the value of time and convenience. It is also constrained by price and availability of other types of home delivered meals and the cost of pre-cooked/semi-cooked frozen meals or snacks which can be bought from a nearby grocery store or even prepared at home.

Buyer Power

Buyers can have substantial power over the producers in some industries. This can affect the attractiveness of the industry adversely. In case of monopsony when there is only one buyer, for example in case of defence industry in a country when the government is the only buyer, the buyer can have immense power. Powerful buyers, for example General Motors, in an extreme case, may even try to take over the auto ancillary producer at an opportune time. However this asymmetry in power may be different across different firms, as some firm may have a first mover advantage and develop an insight into the needs and workings of the buyer from earlier experience and thereby it may gain a competitive advantage and be able to make above average profits.

Supplier Power

Suppliers of raw materials, parts, labour, and other inputs hold a power over the producer which may vary across industries. Powerful suppliers may render an industry unattractive by capturing more of the profit inherent in the industry. In addition to siphoning of profits, the power of suppliers may make the industry too risky over long periods of time and thus unattractive.

Five Forces: Static or Dynamic?

Though Porter depicts the five forces in seemingly static terms in his industrial organization model, he has acknowledged the dynamic nature of the forces by suggesting that these forces attain a "punctuated equilibrium". Thus these forces should be seen as continuously interacting dynamically, and may attain some level of equilibrium for varying periods of time. This equilibrium or a "snapshot" view of it, may help a strategist to analyse the industry in terms of Porter's Five Forces.

Porter's assumption of a perfect market, with relatively simple and stable structures, has drawn criticism for the five forces model from various academics. Also, there is a possibility that instead of competition, the firms in the industry may collude, strike strategic alliances, strategize for takeovers and/or mergers, or inter-connect for a common strategy, and in such scenarios the application of the five forces model becomes limited.

Porter's Five Forces Model and Supply Chains

Porter's five forces model is highly useful for analysing an industry's attractiveness. However when we try to apply it to a supply chain the issue becomes problematic. The initial problem lies in the fact that a supply chain does not consist of one industry; it is a composite of a number of industries, whereas the five forces model is based on industrial organization paradigm. For example, for automobile industry, the supply chain includes members from diverse industries such as steel industry, paint industry, rubber tire industry, plastics industry, electrical engineering industry, petro-chemicals industry, and so on. Similarly, when we envisage a supply chain of a big retail network, we are considering a large number of industries supplying to one retailer. Thus, even though Porter's view of an industry includes many portions of the supply chain (Cray, 2009), and we can analyse the retail industry itself using the five forces model, but arguably we may not be able to analyze the entire supply chain.

Looking at individual components of the model, we see that first the core of inter-firm competitive rivalry may vanish from the model as all the firms in a supply chain are member partners of the chain, especially so if there is only one supplier from one industry. Thus, instead of competitive rivalry the firms appear to be tied up with each other through contracts. However, because the level of competition in the global market has changed, as now the firms are no longer competing units, the competitive rivalry has now shifted to that between supply chains (Christopher, 1992), (Henkoff, 1994 quoted in Fawcett et al., 2006). Further, because the suppliers and the buyers are members of the supply chain, while the interplay of the power of suppliers and buyers operates to a greater degree at the time of negotiating long-term contracts typical of well integrated supply chains, once the long term contracts are in place a supply chain is expected, at least theoretically, to work relatively smoothly. Toyota is a good example of such a smooth working (Liker, 2004). Contrary to this, a dominant and aggressive member of supply chain may keep a constant and increasing pressure on its suppliers to reduce costs to unreasonable levels, which may lead to repeated disruption of different portions of the supply chain or bankruptcy of its individual members (Fishman, 2003), supporting Porter's viewpoint. Barriers to entry may be strong in a supply chain, and it may be difficult to get entry into a supply chain, as the members are strongly tied up through contracts. The threat of substitutes is ever present in the market and is not affected by the supply chain structure. However, a flexible supply chain may be more capable of addressing itself to such and other strategic threats (Kumar et al., 2006).

Thus, arguably, Porter's five forces model falls short of expectations when we attempt to use it to analyse a well integrated supply chain. Ideally suited to analyse an industrial organization, it fails to handle integrated supply chains, which span across not only organizations but also a number of industries.

Porter's Generic Strategies

For a firm already operating, or entering, in an industry, analysis of the industry using Porter's Five Forces Model provides a basic assessment of the attractiveness of the industry and the forces that affect it. The next big question is how to make profits that are above the industry average. As various firms in an industry make varying levels of profits, it is evident that the industry, and its attractiveness, is only a foundation for the firm, and using this foundation the firm has to operate in such a way that it attains and maintains a competitive advantage vis-a-vis other firms in the industry to attain higher than average profits.

One of the main objectives of business strategy is to achieve a sustainable competitive advantage over rival firms. A positional advantage, gained by positioning the firm as a cost leader or a product (differentiation) leader in the industry leads to sustainable competitive advantage by which the firm can create an above average value for its customers and above average profits for itself. Cost and differentiation advantages are known as "positional advantages" because they describe the firm's position in the industry as a leader in either cost or product differentiation.

As opposed to this view, the resource based view essentially holds that this sustainable competitive advantage arises from the creation of value for the customer, which a firm does by effectively using its resources and capabilities (Wernerfelt, 1984; Barney, 1986; Barney, 1991; Conner, 1991; Fiol, 1991; Black and Boal, 1994; Conner and Prahalad, 1996; Miller and Shamsie, 1996; and Oliver, 1997). In the resource based view the positional advantages are essentially a function of a firm's superior resources, and not purely a function of its superior strategy as posited by Porter.

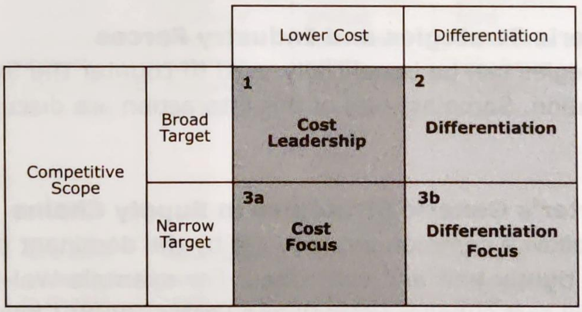
Porter assumes that strategy formulation is essentially a deliberate process, and he takes a strong positivist view during the entire discourse. This may be counterpoised to the view of Mintzberg and Waters (1985) who suggest that strategy formulation process can lie within a range, from deliberate to emergent. Though Porter does not indicate the relationship of strategy and organizational structure in the same way as Chandler (1962, 1990 and 1992), he does assume that strategizing is a function of top managers. Porter takes the industry as his unit of analysis, and while doing so he does emphasize the relationship of the structure of the industry as such, considering its five forces as the imperatives of required strategy.

Porter identifies three generic strategies for implementation by a firm, essentially at the business unit level, to attain higher than average profits in an industry. These generic strategies (cost leadership, differentiation, and focus), he posits, may be used effectively to leverage the firm's strengths to counter the five forces. However, Porter seems convinced that not following generic strategies in their pure form can open the firm to the risk of getting "stuck in the middle" (Porter, 1980) thereby endangering its profitability, though he altered this view somewhat in his later writings (Cray, 2009). There has been a lot of interest in academics in the "pure versus hybrid strategy" discourse that this viewpoint has triggered off (Miller, 1989; Miller & Dess, 1993; Chan & Wong, 1999; Gopalakrishna & Subramanian, 2001).

Porter suggests that a firm can leverage its strengths to pursue two pure strategies: "cost advantage" and "differentiation", when scope is broader. When applied to a narrow scope, these strategies can be used as two sub-varieties of an overall "focus strategy", to take advantage of a profitable niche. Thus a "focus strategy" may have a cost focus or a differentiation focus to address a niche market.

As they are "generic" strategies, it is inherent in the argument that when finalizing firm-specific strategies management will take into account the specific circumstances of a firm.

Figure 2: Porter's Generic Strategy
(Source: Porter, 1985)



Cost Leadership Strategy

Generally targeted at a broader market, this strategy focuses on being a low cost producer. The firm sells at average or below average prices and aims at a big market share. Being a low cost producer it can survive a price war better than its competitors. When the prices decline with the maturity of market/product, the firm can maintain its lead and profitability vis-à-vis other firms in the industry. Cost leadership may be attained by attaining economies of scale, improving operations, introducing a new technology, sourcing lower cost inputs, vertical integration and strategic outsourcing etc. The firm that focuses on this generic strategy may have strengths like better access to capital, better product design and process engineering capabilities, and more efficient operations. However, it is a strategy which can be imitated by competitors as the product itself does not lend any competitive advantage. Also niche players with focus strategy may be able to out-price the cost-leader for specific customers and eat into market share.

Differentiation Strategy

A firm following a differentiation strategy develops a unique product or service for which it can charge a premium price from the customer. This unique product or service may be viewed by the customer as a different product altogether or a better product than those offered by the competitors. Better research and development capabilities, creative product development team, better sales and marketing and better brand image are some of the factors which may help achieving the differentiation strategy. Change in customer preferences, imitation by competitors and eating away of market shares by niche players pursuing a focus strategy are the challenges faced by firms following differentiation strategy.

Focus Strategy

A firm with a focus strategy gives attention to a narrow segment, and within the segment aims to achieve either a cost advantage or differentiation. The firm focuses on the niche segment totally so it tends serve the segment better. Thus the firm generally enjoys better customer loyalty. This not only allows it to charge premium rates, but may also discourage other firms from preying upon its customers. On the downside, because of their narrow market and low volumes these firms may have lesser bargaining power with their suppliers, but maybe able to pass on higher costs to their customers. Imitation, pressure from other focusers and threat from cost leader are the challenges faced by a firm following focus strategy.

Interaction of Generic Strategies and Industry Forces

Porter's generic strategies can be beneficially used to counter the five forces that act on an industrial organization. Some aspects of this interaction are discussed in the following table (at page 9).

Applicability of Porter's Generic Strategies in Supply Chains

A supply chain may follow a common strategy set by the dominant partner of the supply chain, if the chain is tightly knit and controlled. For example Wal-Mart is strong in its strategy of being a low cost supplier (Parnell and Lester, 2008; Chiyu et al., 2007; Rigby and Haas, 2004). While supply chain efficiencies, and its distribution system help Wal-Mart to keep its prices very low (Parnell and Lester, 2008), it may be logical to argue that all the members of its supply chain have to follow low cost strategy without any option. For example, in 2003 Wal-Mart priced a Gallon of Vlasic Pickle at $2.97, a price for which other retailers were selling a quart of the same pickle, thus undercutting the supplier itself in the market. In this way Wal-Mart demolished Vlasic Pickle's "number one" reputation and standing in the market, which the firm had long nurtured using a differentiation strategy (Fishman, 2003). Similar debacle followed the sale of Levis jeans through Wal-Mart (Parnell and Lester, 2008). Thus, forcing of its strategies by the dominating member onto the entire supply chain may lead to strongly negative results for the other members. So much so that in extreme cases, the use of aggressive negotiations and coercive tactics may annihilate the manufacturing firms (Parnell & Lester, 2008) and suppliers, thus cannibalizing parts of the supply chain itself. On the other hand, in a supply chain that is not so aggressively dominated, it is possible to envisage that all the members of a supply chain follow their own generic strategies as suggested by Porter, so long as they meet the parameters of the supply chain. Toyota ensures that all members of its supply chain follow its "way" and values diligently (Liker, 2004), and has very strong, supportive and close relationships with its supply chain members. Taking a well integrated supply chain as a unit of analysis, it is logical to assume that a supply chain can adopt any of the Porter's generic strategies to create a sustained competitive advantage, vis-à-vis other supply chains, and satisfy its customers while generating above average profits for itself. However, in formulating and implementing such a strategy, the entire supply chain has to show a unity of purpose (Mann et al., 2008), and in this endeavour the supply chain may be led by its dominant partner.

Table 1: How Generic Strategies Can Help Counter Industry Forces (Source: Porter, 1980)

	Five Forces				
Generic Strategies	**Competitive Rivalry**	**Barriers to Entry**	**Threat of Substitutes**	**Buyer Power**	**Supplier Power**
Cost Leadership Strategy	The firm is able to compete on price front	Existing competitive prices and ability to reduce them further discourages new entrants	Low prices makes it difficult to create cost - effective substitutes	Firm is able to offer better prices to big buyers	Cost leadership translates into higher volumes and better ability to negotiate with powerful suppliers
Differentiation Strategy	Better and distinctive value to customers protects customer base from rivals	Customer loyalty because of value of products to customers discourages new entrants	Distinct differentiating product attributes satisfy customer requirements, making it difficult to create equivalent substitutes	Powerful buyers have fewer alternatives, so have lesser negotiating power	Firms have better capabilities to pass on the price increases by suppliers to its customers
Focus Strategy	Rival firms are less able to counter focus strategy as it needs more effort and capabilities to wean away focus customers	Focus develops close customer relationships and core competencies that inhibit new entrants	Specially developed products and core competencies make it difficult for rival firms to offer substitutes	Powerful buyers have fewer alternatives, so have lesser negotiating power for differentiated products and niche-targeted pricing offers	Firm can be pass on higher prices of suppliers to its customers because of differentiated niche products

Stuck in the Middle? Pure versus Hybrid Strategy

Michael Porter posited that for long-term success, a firm must select only one of the three generic strategies. He argues that when a firm tries to follow more than one generic strategy, there is a risk of getting "stuck in the middle" and of losing any competitive advantage that the firm may have, as the strategies may not be compatible with one other. Efforts to gain advantage on all fronts may result in a zero sum game. For example, if a firm is endeavouring to differentiate itself by manufacturing high quality products, trying to become a cost leader may jeopardize quality, resulting in loss of sales and the firm's brand equity. Therefore, for following different generic strategies Porter suggested creation of different strategic business units rather than getting "stuck in the middle".

This view has created a lot of discussion in academic circles. It is generally seen that a customer may be seeking satisfaction from a product across multiple attributes, in such cases following a single strategy may not be adequate.

Porter stresses that main objective of a firm is to follow a pure strategy and not get "stuck in the middle" and views his generic strategies to be non-complementary, even if not mutually exclusive (Miller & Friesen, 1986). According to Porter "the benefits optimizing the firm's strategy ... cannot be gained if a firm is simultaneously pursuing cost leadership and differentiation" (Porter, 1985 p.17). Though various studies find that Porter's generic strategies form part of the dominant paradigm (Dess & Davis, 1984; Hill, 1988; Miller & Dess, 1993; Lee & Miller, 1999; Pelham, 1999), it is not always demonstrable that the firms that follow a pure strategy always win or do not get "stuck in the middle". There have been reports that in a number of cases firms with hybrid strategies outperform the firms with a pure strategy.

In a study Gopalakrishna and Subramanian (2001) found that "organizations that followed a combination of cost leadership and differentiation strategies ("hybrids"), in general, had the best performance of all groups on a variety of performance measures" (p.61). Similar findings and views are reported by Miller (1989), Miller and Dess (1993), and Chan and Wong (1999). Allen et al. (2007) found in their study which was conducted in Japan that cost leadership strategy was the most frequently used strategy, and the differentiation strategy was used the least. Focus strategy was not used by any company in their study. In addition the Japanese firms used supply chain focus strategy and a training based strategy which are not described by Porter.

The situation becomes more complex in case of supply chains. The members of a supply chain maybe following different strategies not only vis-à-vis other members, but also with respect to the market that is not part of their supply chain. Also, at any given time a company may be part of more than one supply chains and may be trying following different generic strategies within different supply chains. In such a case does the company get "stuck in the middle", i.e. in the middle of two or more generic strategies and two or more supply chains? This important question calls for further research.

Resource Based View (RBV), Porter's Generic Strategies and Supply Chains

The resource-based view suggests that superior resources and capabilities of a firm help it in creating a sustainable competitive advantage, which cannot be replicated by the firms who lack these resources and capabilities. While the assets maybe in form of brand equity, customer base, know how, patents and trademarks, the ability to use them effectively is referred to as capability. These firm specific assets or resources, combined with capabilities, result in distinctive competencies, which are used to create cost leadership or differentiation advantage. These resources get pooled in a number of ways in a supply chain. Porter`s thinking has been criticized for lacking an adequate theory of the firm which has led to problems in incorporating firm side in his models (Foss, 1996). Amit and Schoemaker (1993), Barney (1991), de Man (1993), and Schoemaker (1990) identify complementarities by which the resource based view can add a theory of the firm to the Porter`s framework, focus on a longer run, better address corporate strategy issues and, based on resource analysis, may help ascertain the dangers of future imitation by the competitors (Foss, 1996) and can also be extended to supply chains. However, Porter does add an understanding of external environment to the RBV. Resource based view becomes more useful when we apply it to supply chains which have different level of resources. Arguably, giant sogo-soshas, representing supply chains of conglomerates of a large number of group companies, have substantially greater resources and strengths, which cannot be matched by smaller supply chains or networks. Similarly, for example, Wal-Mart has the resources to sustain its low performing store locations for long periods, and from the revenues of its large number of stores worldwide it is able to continually pay its global supply chain, while small family businesses are unable to do so (Parnell & Lester, 2008). At the same time, a dominant partner of a supply chain can use these resources to damage its suppliers, cannibalizing the market-share of suppliers' premium brands and also their profits (Fishman, 2003).

It is seen that Porter's constructs best serve when they are seen in terms of industry or when they view the firm as an industrial organization. The models need suitable adaptation to address the growing phenomenon of supply chains. On the other hand, the resource based view, learning approach and dynamic strategic positioning perspectives can be useful to understand competitive behaviour in the case of supply chains (Cray, 2009; Parnell and Lester, 2008).

Porter's Value Chain

In an effort to find the basis of sustainable competitive advantage Porter identified a series of activities, termed as the "value chain", by which a firm creates value for its customers. Considering this construct from a wider perspective, the firm may be viewed as a part of "value system" consisting of suppliers and distributors and retailers, which is now more commonly known as the supply chain. While Porter's "value chain" is composed of value creating activities within a firm, the term "supply chain" refers to series of firms, from supplier, to manufacturer, to distributor, to retailer, which form a chain to satisfy the end customer's needs. A firm's value chain must create value, which is superior to its rivals in the industry to achieve sustainable competitive advantage. This superior value can result from applying Porter's generic strategies, i.e. lower costs, differentiation and focus.

Porter identified five primary value-creating activities as inbound logistics, operations, outbound logistics, marketing & sales and service. The firm creates a profit margin by adding value, which is higher than the cost incurred in these primary value-creating activities. These are supported by four generic support activities, which Porter identified as procurement, technology development, human resource management and firm infrastructure. These support activities can also be a source of competitive advantage in their own right, e.g. an efficient technology / new product development department, as in the case of the company Hewlett Packard.

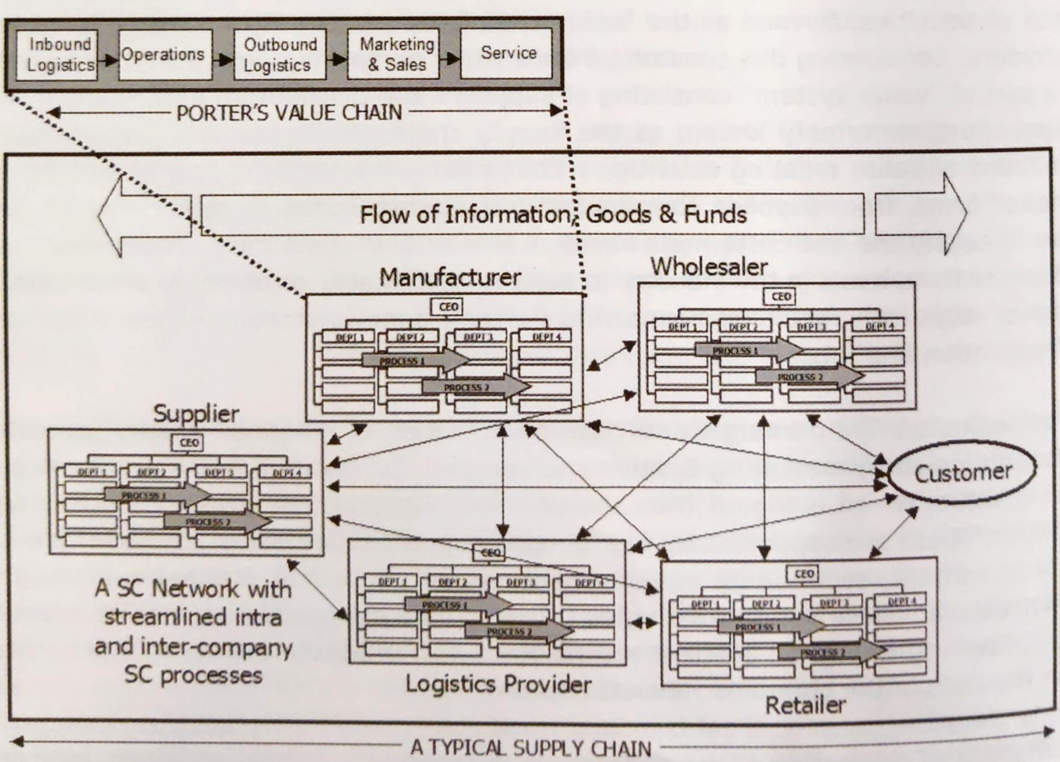
An analysis of generic and firm specific value creating activities and their interacting linkages can help in the optimization of activities that can create sustainable competitive advantage. Porter offered value chain analysis as a tool to help create competitive advantage (through the development of cost-leadership, differentiation or focus strategies) and to understand the role of different value creating activities and their inter-relationships.

It also aids identification of a firm's weaknesses and the strategies needed to challenge the position of industry's leaders.

Value Chains, Value systems and Supply Chains

Porter explains value chains as internal processes of a firm that add value. Porter's value chain includes the supply chain processes internal to the firm. Across the firms, a "value system" is seen to be composed of supplier, manufacturer, and distributors etc., which create value for the customer at various stages within their domain. This is akin to a supply chain, but the "value system" focuses on value creation, while supply chain management takes a comprehensive view including operational aspect. Accordingly, while Porter's value chain analysis can give valuable insights into the value added by each of the supply chain partners, it has a limited role to play in operational aspects of supply chain management. However, Porter's value chain analysis, and possibly quantification of value creation by individual supply chain members, may form a useful basis of negotiations for equitable profit distribution among the supply chain partners while drawing up long-term contracts (Cao and Mann, 2008). Figure 3 places Porter's value chain in the context of a typical supply chain structure.

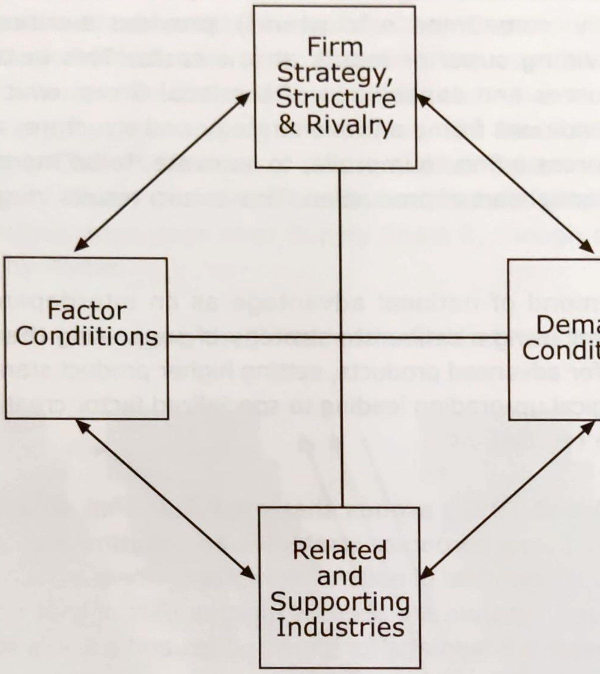
Figure 3: Porter's Value Chain in the Context of a Typical Supply Chain



Porter's Diamond of National Advantage

"Why do some nations succeed and others fail in international competition?" (Porter, 1990 p.1). To answer this question Porter presented his diamond of national advantage (Figure 4)

Figure 4: Porter's Diamond of National Advantage
(Source: Porter, 1990)



Porter posited that as opposed to the classical viewpoint, a nation can create comparative advantage by new factors such as skilled labour, research and technology, culture and government support. While it can be argued that Porter's "new" advanced factors like skilled labour, technology, culture are part and parcel of the factors "labour" and "local population" of the classical view of comparative advantage of a nation, Porter's Diamond provides an overarching view of national advantage. Evidently Porter sees that this national advantage arises out of a deliberate strategy formulated and implemented at a national level by government support, and that the structure (in form of firm structure) has a significant role to play (Chandler, 1962, 1990 and 1992), and that the resources (similar to resource based view) of a nation have a substantial role in creating the national advantage by which industries of a nation can compete with those from other countries. Here it can be argued that even while taking a "global" view, Porter seems to be essentially analysing the inter-play at the level of industries, viewing an industry based in one nation as having an advantage over an industry based in another nation, with firms playing their roles as industrial organizations. The new advanced factor endowments of a nation seem to flow from government support and culture. Skilled resources, technological base, their up-grading and deployment and innovation underpin the advancement of such factor conditions, which in turn coalesce into a resource that helps create the national advantage.

This view has strong similarities to the resource based view of competitive advantage. Local demand conditions change the actions of local firms, a more demanding and trend setting local market assists local firms to continuously upgrade their products and services, thereby making them capable of competing in international market, and to predict or even set the international trends. This demanding local market may be seen as a structure (a component of national economy) or a national resource (which leads to development and sustenance of higher capabilities of industry in a nation) based on which view one prefers to take. The existence of vigorous and competitive related and supporting industries, based locally (sometimes in "clusters"), provides a critical support to this whole process by providing superior inputs at low costs. This in turn extends and consolidates the resources and capabilities of the local firms, which are competing internationally. Local conditions frame a firm's strategy and structure, and the existence of strong local rivalry forces a firm to improve, to innovate, to be more competitive and even to export its substantial part of production. This in turn results in national advantage (Porter, 1990).

Porter posited the diamond of national advantage as an interdependent reinforcing system, with government using a deliberate strategy of supporting the industry through the creation of demand for advanced products, setting higher product standards, supporting education and technological up-grading leading to specialized factor creation and modifying competition by suitable regulations.

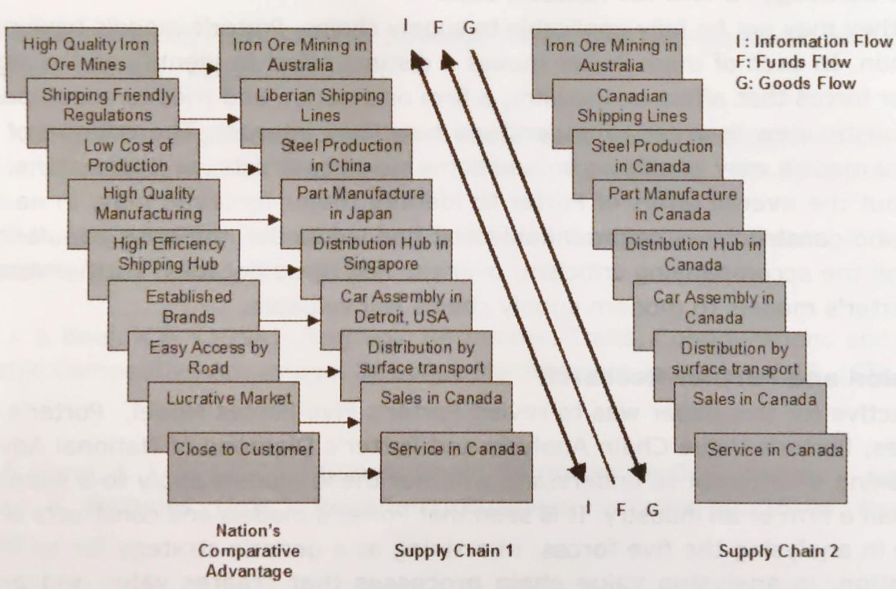
Chandler (1962, 1990 and 1992) argues that organizational structure and control mechanisms necessarily follow corporate strategies ad seriatim, a concept that finds a resonance in Porter's (1990) diamond of national advantage, where a national government's structural regulations and controls are seen as integral part of that nation's deliberate strategy to gain a competitive advantage for its industries and a firm's strategy, structure and rivalry lies at one apex of the diamond.

Porter's diamond has attracted criticism that it does not address role of multi-national corporations (MNCs), that it discredits inbound foreign direct investment and that it applies only to developed economies. It can be argued that these criticisms are attempts to lionize MNCs and the impact of their investments in developing countries, and none of these criticisms take away the overall significance of Porter's theory. Öz (2002) finds that while the diamond "works" in developing countries, some components like domestic rivalry and role of government may not. On the deliberate strategy formulation and implementation front, Wickham (2005) finds that despite the fact that Porter's Diamond Factor Model (DFM) has been adopted in Australian economic policy since 1990, Australia has not reaped its benefits. The author, and others (Rugman and D'Cruz, 1993; Dunning,1993; Cartwright, 1993; Oz, 2000; Clancy et al., 2001), propose its re-conceptualisation or modification to make it more effective.

Porter's Diamond of National Advantage and Supply Chains

Porter's diamond of national advantage uses "nation" as its unit of analysis. Supply chains maybe local to a nation or may operate trans-border or across a number of nations. In the case of global supply chains, Porter's diamond applies only to the extent that one member of supply chain may use its distinct position in a nation to supply its portion of supplies to make the entire chain productive. Thus, Porter's diamond may be used gainfully to analyse the strengths of individual components of a supply chain, in light of location of the components in a nation, to arrive at a composite picture for the entire integrated supply chain that operates across many nations. This composite picture would reflect the strength of the focal supply chain under analysis vis-à-vis the other competitive supply chains. For example, comparing two supply chains selling cars in Canada, in a hypothetical case (Figure, 5), Supply Chain 1, which leverages and integrates the national advantage available to each of its individual member firms into a composite whole, is likely to have a sustained competitive advantage over Supply Chain 2, if Porter's theory of national advantage holds in this case. Arguably, the cumulative value added by the members of such a composite trans-national supply chain has to exceed the transaction costs involved in supply chain management. Also, the financial advantages that may accrue to the Supply Chain 1 because of differential tax rates, currency exchange rates, low cost financing by export promotion banks, and transfer pricing also come into play, giving it a competitive advantage over Supply Chain 2, though these aspects have not been highlighted by Porter.

Figure 5: Leveraging the Porter's Diamond of National Advantage



It may be pertinent to note here, that for a multi-national supply chain, the key is to develop as well as derive the maximum benefit from the comparative advantage that a given nation may have over others. Thus, working across many countries, the multi-national supply chain may garner a significant part of value generated by such a comparative national advantage by using transfer pricing, leaving only a smaller part of value in the host nation. Therefore, even though the ostensible aim of the creation of such a comparative national advantage by the national government would be to benefit its citizens, the main beneficiary may very well turn out to be a multi-national supply chain which skims profits across a number of countries. A similar situation may occur in the target country where the supply chain wishes to market the finished products.

Here, the supply chain would focus on the attractiveness of the market, which represents "demand conditions" component of the Porter's Diamond. As a corollary, the other three components/vortices of Porter's Diamond would be significantly de-privileged. Therefore, the "factor conditions", and "related & supporting industries", are likely to be weakened, suppressed, or overpowered, simply so that the multi-national supply chain can take advantage of the said target market. Also, the member of supply chain which is responsible for marketing in the target country, say a giant retail chain, would adapt firm's "strategy and structure" to combat any "rivalry" from local retail stores. It would be possible to conjecture that with time, overall national advantage of such a country is likely to erode as it is essentially being tapped as a market. This would lead to lower wages for labour and a progressive decline of the nation's manufacturing base, leaving it only with one "advantage", that is the "demand conditions" or the market. The strategic benefit of this remaining "advantage" goes to the most competitive multi-national supply chain, which distributes its profits across various nations depending upon the most beneficial tax "incentives". This paradigm has serious implications for the target country's national policies. It would be interesting to study further the current predicament of the North American economies in this light.

Porter's Strategy: a win for holistic view

Though they may not be fully applicable to supply chains, Porter's models have one thing in common. In each of them Porter makes a distinct effort to identify all the significant factors or forces that affect an industry, a firm or a nation and tries to encompass them into a holistic view in order to understand how they interact. The critique of various individual models may enable us to add some new constructs, or interactions, to each model, but the overall effort of Porter to identify major forces in play, in each of his models and constructs, is commendable and had led to the immense popularity of his ideas, and the accompanying criticism, over the last three decades. Further research to adapt Porter's models to modern supply chains will valuable.

Conclusion and Further Research

The objective for this paper was to revisit Porter's Five Forces Model, Porter's Generic Strategies, Porter's Value Chain Analysis and Porter's Diamond of National Advantage, while making an attempt to understand whether these models apply to a supply chain, rather than a firm or an industry. It is seen that Porter's models and constructs are highly valuable in analysing the five forces, in arriving at a generic strategy for an industrial organization, in analysing value chain processes that creates value and provide a sustainable competitive advantage for the firm, and in understanding the comparative national advantage. However, adapting these models for use in modern supply chains, which are a growing phenomenon in today's global business, throws up important research questions. Though Porter's five forces model includes many portions of a supply chain and we can subsequently analyse any specific industry using the model; we may not be able to analyze the entire supply chain. It remains to be seen whether Porter's generic strategies can be uniformly applied to all components of a well integrated supply chain, and whether, by using multiple strategies, a supply chain member can get "stuck in the middle", especially when it belongs to more than one supply chain. This aspect needs further research. Though Porter's value chain analysis is acceptable for the analysis of value creation processes within a firm, it needs to be extrapolated to cover entire supply chain. However, it may serve as an important tool when negotiating long-term supply chain contracts. As we have discussed, Porter's Diamond of National Advantage throws up very interesting and important questions regarding the role of multi-national supply chains in national economies and requires further research, especially in the face of the evolving global economic scenario. While Porter's constructs best serve when they are seen in terms of industry or when one views the firm as an industrial organization, the models need suitable adaptation to address the growing phenomenon of supply chains. The resource based view, learning approach and dynamic strategic positioning perspectives can be usefully integrated into Porter's models to understand competitive behaviour in the case of supply chains. The paper is useful to managers as it briefly outlines the main models of Porter and their failings in the context of supply chains. The paper adds value for academics by identifying the problems in the application of Porter's models to supply chain management and throwing up some very interesting questions for further research.

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Some Aspects of Capital Budgeting Techniques of Interest-free Financial Institutions (IFIs) - A Theoretical Evaluation

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Abstract

This study mainly highlights the existing investment decision-making techniques of Interest-free Banks and Financial Institutions and limitations existed on those techniques. For probable solution of the aforesaid barriers, the study also analyzes the prospects and applicability of a recently developed model *'q' Theory of Investment* as a benchmark of capital budgeting in Interest-free Financial System (IFS), which will be compatible with the rules stated in Islamic Law and Principles (Appendix-2). The findings of this study prove some important prospects and strengths of the aforesaid model as: i) In Interest-free financial system, determination of prospective profitability and the rate of return on investment of the same risk class play a pivotal role in determining the relative cost of capital and *'q' Theory of Investment* suggests the use of information in asset markets, especially the stock market in knowing the profitability of investment; ii) The *'q' ratio* is an indication of how much this market value can increase by additional investment, which is also known as Marginal q. *Marginal q* - the ratio of market value of an additional unit of capital (shadow price of capital) to its replacement cost; cost of equity capital / fund and IRR in Islamic principles; iii) This model very much depends on actual situation (ex-post) of the investment projects or programs and relates investment to the ratio of market to replacement value; iv) When the stock market functions properly in a competitive market situation, the future profitability of investment will be solely summarized by *"q" ratio*; v) According to this theory, if the market valuation of capital held by a firm exceeds the cost of capital on the open market, then the firms / entrepreneurs can increase its value by investing, otherwise not.

Key Words

Interest-free Investment, Cost of Capital, LIBOR, and 'q' Theory.

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Introduction

Background

In modern competitive business world, Interest-free finance is developing at a remarkable pace. Since its inception three decades ago, the number of Interest-free financial institutions has risen in worldwide from one in 1975 to over 300 today in more than 75 countries. They are concentrated in the Middle East and Southeast Asia (with Bahrain and Malaysia the biggest hubs), but are also appearing in Europe and the United States (Qorchi, 2005). One of its major characteristics is that no interest rates can be charged - rather, the financier charges a mark-up, or shares in the borrower's profits. Several standard products have been developed to meet the financing needs of trade and projects. Some are based directly on structures described in the Quran, others are feats of financial engineering, combining various "permitted" financial instruments to arrive at a product that combines acceptable returns with acceptable risks (UNCTAD Secretariat, 2006).

Interest-free financial products are aimed at investors who want to comply with the Islamic laws (Shariah) that govern a Muslim's daily life. These laws forbid giving or receiving interest (because earning profit from an exchange of money for money is considered immoral); mandate that all financial transactions be based on real economic activity; and prohibit investment in sectors such as tobacco, alcohol, gambling, and armaments. Islamic financial institutions are providing an increasingly broad range of many financial services, such as fund mobilization, asset allocation, payment and exchange settlement services, and risk transformation and mitigation (Qorchi, 2005).

Designing Islamic instruments for monetary operations has proven conceptually difficult. In countries with a dual banking system, the lack of non interest-bearing securities has limited the scope of monetary management. The liquid nature of banks' liabilities, related to the predominance of deposits of short-term maturities, predisposes the system to hold substantial liquid assets and excess reserves. This, in turn, inhibits financial intermediation and market deepening. Difficulties in defining rates of return on these instruments have also constrained the development of money and interbank markets (Ibid).

Rationale of the Study

For evaluating investment projects / programs financial institutions as well as investors use some tools and techniques according to financial management theory. The most commonly prescribed capital budgeting techniques in the public finance literature include net present value (NPV), internal rate of return (IRR), benefit-cost ratio (BCR), payback period (PBP), and accounting rate of return (ARR) (Sekwat, 1999). Cost of capital or opportunity cost of capital is the main basis of these techniques in case of traditional financial system, which represents the fixed and predetermined interest rate. But Islamic Shariah fully disallows any fixed and predetermined interest rate that prevail in the economy, it rather allows PLS and Mark-up techniques in case of trade and business activities. An Islamic financial system requires elimination of any fixed and predetermined interest rate and thus encourage equity participation and direct sharing of risks and returns while financing in trade and businesses (Khan, 1995). In this way, it closes the door to any form of debt instruments in the said business as well as investment. Though the IFS prohibits a fixed and predetermined interest rate, it fully recognizes equity sharing basis (PLS) as well as rate of return on investment. As compared to a conventional debt-based system, where capital is rewarded on the basis of a rate fixed ex-ante or determined by the expectations of the future demand and supply of capital, an Islamic financial system calls for rewarding the capital on the basis of ex-post (actual income) return on capital (Ibid, 1995).

In a traditional system, market interest rate plays an equilibrium rate / benchmark for evaluating investment projects / programs. But, so far no equivalent substitute has been available for the IFIs to determine the expected rate of return (ERR) or the marginal efficiency of investments (Iqbal, 1997). In this case, they depend on interest rate based technique like **LIBOR - London Inter-Bank Offer Rate** (for details see appendix-1) borrowed from their counterparts in traditional financial system, to make lending as well as investment decisions. The technique has strong avenue using by the IFIs while evaluating their investment projects; yet, it is not acceptable as a full fledged technique according to Islamic Law. So, there is a controversy among the researchers (Khan and Mirakhor, 1988; Khan, 1995) about the technique using in IFS. In this context, this study is an attempt by the author to evaluate the capital budgeting techniques/tools of IFIs. The study mainly examines the existing investment decision-making techniques, their limitations of the said institutions and also analyzes the prospects of a model named as *'q' Theory of Investment* as a benchmark of capital budgeting in Islamic Financial System, which will be compatible with the rules stated in Islamic Law.

Objective of the Study

The primary focus of this study is to discuss and analyze the investment/ capital budgeting[2] decision-making tools of IFIs according to Islamic Shariah. To achieve this main objective, the study covers the following areas of the research problem:

1. To discuss various theoretical aspects of investment decision making tools and techniques of both Traditional and Islamic Financial System;

2. To examine the existing investment decision making techniques of IFIs with its shortcomings;

3. Finally to analyze the prospects and opportunities of newly developed model ('q' Theory) of investment.

Study Methodology

This research is mainly a desk-based research. Secondary data and information are used in this study. The main sources of data and information are: Text books and journals related to Islamic Economics and Finance, articles of Islamic Finance and Banking, discussion papers, working papers and website documents etc. As the study is a theoretical one, for getting a profound idea about the research problem, a full thorough literature survey has been made by the author to make the study a meaningful one.

[2] The term 'Investment' and 'capital Budgeting ' is synonimously used in this study.

This study mainly focuses on the theoretical aspects of investment decision-making tools of Conventional Financial Institutions (CFIs) in general and Islamic Financial Institutions (IFIs) in particular. In this context, this research basically evaluates the existing investment decision-making systems of Islamic Bank and Financial Institutions, limitations, and the study also examines the strength and opportunity of a newly developed technique ('q' theory of investment) which can be used as a benchmark while making investment decision according to Islamic Law. Some policy measures are also included for the applicability of the said technique both by the IFIs and the economy as a whole in any region like Bangladesh. It is hopeful that the findings of this study will mitigate the existing barriers of IFIs while performing investment activities in home and abroad.

2. **Findings of the Study**

Theoretical Aspects of Investment Decision

Islamic Investment

Islamic Investment can be defined as investment in financial services and investment products that adhere to principles established by the Shari'ah (Islamic law as revealed in the Qur'an and Sunnah). These principles require that:

- Investments must be in ethical sectors. In other words, profits cannot be made from prohibited activities such as alcohol production, gambling, pornography, etc. Also investing in the interest -(riba) based financial institutions are not allowed.

- All wealth creation should result from a partnership between the investor and the user of capital in which rewards and risks are shared. Returns on invested capital should be earned (i.e. tied to the profits generated by the capital) rather than be pre-determined (as in interest based returns provided by bank deposits).

- Interest based securities (e.g. bonds, bank deposits etc.) are not acceptable as Shari'ah-compliant investments, since these securities provide returns that are predetermined, and unrelated to the underlying performance of the asset that is generating the returns. By the same logic, equity securities (shares) are considered permissible by a consensus of contemporary scholars (e.g. the Islamic Fiqh Academy), because the profits an investor makes on equity securities are tied to returns of the underlying company and hence risk relate (www.investorwords.com).

Principles of Resource Allocation / Investment Decision in IFS:

As stated earlier, investment decision as well as resource allocation in IFS is different from the traditional one because of mainly fixed and predetermined interest rate on capital/ investment. Islamic finance's appeal is two-faced. As it is based on ethics as well as on efficiency (profitability) so, in IFS, resource allocation has not only economic objectives, but also social and moral objectives. That's why; the following principles are followed in case of resource allocation in Islam:

Permissibility: According to this principal, the allocation of resources for investment should be made in such a way that it is permissible in Islam.

Consistency: The allocation of resources should be made in such projects or sectors, which are consistent with the principles of the Holy Qur'an and Sunnah. The concept of consistency is very dynamic. A particular investment is ideologically consistent with the principles of Holy Qur'an and Sunnah, should be decided by the Ijtihad and Qiyas.

Desirability: According to this principle, the investment should be made in those projects that are desirable and beneficial for the welfare of the society as a whole and which satisfy the basic elements of Islamic value system. Besides, Equity Distribution of Income, Collective Good Welfare, Efficient Use of Resources, Priority of the immediate need, Productivity, Humane Consideration, Ethics and Morality etc. also considered while making investment decisions (Chowdhury, 1999, p. 45).

Components of Investment / Capital Budgeting

Cost of Capital**:** Traditional practice of capital budgeting or investment is mainly based on the principle of interest, which Islam categorically prohibits and thus closes the door to any form of debt instruments. Instead it promotes equity participation and directs sharing of risks and returns. Though the Islamic financial system prohibits a fixed and predetermined interest rate on capital (i.e. cost of capital), it fully recognizes profit and loss sharing basis as well as rate of return on investment. As compared to a conventional debt-based system, where capital is rewarded on the basis of interest (.i.e. cost capital - a rate fixed ex-ante or determined by the expectations of the future demand and supply of capital), an Islamic Financial System (IFS) calls for rewarding /pricing the capital on the basis of ex-post (i.e. actual income) return on capital. In an Islamic framework, the incentive for the firm/ enterprise to invest will solely depend on prospective profitability of the farm or project. A profit-maximizing farm / institution will continue investing until the marginal productivity of capital becomes equal to the opportunity cost of capital; therefore, cost of capital in the Islamic system can be represented by the rate of return on alternative opportunities for investment of comparable risks (Khan, 1995).

Time Value of Money and Discount Rate**:** Time value of money is one of the most important factors of evaluating investment projects. The concept of 'Time Value of Money' plays a vital role for determining future stream of cash flows in any financial system whether it is traditional or Islamic. In traditional system, Time Value of Money is determined ex-ante. Actual situation or final situation is not considered. But in Islamic framework, the time value of money cannot be determined ex-ante; some proxy for the expected time value of money will have to be used to make investment decisions. The time value of money can be approximated by the existing rate of return on capital (Khan, 1995). However, ex-post time value of money can be considered. But calculation of NPV using ex-post time value of money based on cost of fund cann't be accepted because discount rate can not be accepted as Shariah - compliant technique for making investment decisions. In this case the use if IRR becomes more acceptable. The author (Khan, 1995) concludes the time value of money in the following way:

- Islam does not have anything against realizing time value of money but it cannot be claimed as a predetermined value.

▪ There is also nothing against having a positive time preference. It is, however, more reasonable to think of it as a function time rather than treating it as fixed and independent of the time frame under consideration.

▪ Ex-post rate of return on capital is the only source for identifying the pure time frame of the project. It is justifiable to use this rate to approximate the rate of time preference.

▪ The expected rates of return on the deposits of Islamic banks of different maturities can be treated as close proxies for the rates of time preference for the purpose of discounting projects of different maturities. (Ibid, p. 169-170).

Capital/Investment Evaluation principles in Interest Based and Interest-Free Financial System

Capital should go where it is most productive. The profit rate therefore is the only price of capital that will allocate capital most efficiently. It is also recognized in modern economic theory that it is profit rate and not interest rate that allocates capital. Hence paying capital instead of interest cannot be assumed to disturb allocative efficiency. Also in efficiency context, both Islamic and interest-based banking follow the observation as follows: Islamic banking favors the economic feasibility of the projects where as interest-based banking favors the creditworthiness of the user capital. The principal as well as return on it is guaranteed irrespective of whether the capital earns a profit or a loss (Chowdhury, 1999). *Creditworthiness* becomes important so that the principal and return are recoverable in spite of the project's failure. So, *economic feasibility* of the project may be most important factor in the determination of the credit worthiness of the user of money / entrepreneur. But in Islamic financial system, the owner of capital will get back the principal along with the return only if capital earns a profit. The capital and the return cannot be recovered if the project goes into a loss even if the entrepreneur otherwise had the ability to pay. Therefore *economic feasibility and profitability* are the primary considerations (Ibid, p. 127) by the IFIs for evaluating Investment projects and programs.

Besides, ethical and unethical issues related to the project are also considered in Interest-free financial system. If a project's activities, mission and vision are not ethical from the view point of Islamic Shariah / Islamic Law, then, that project/ program won't be selected for investment by IFIs in spite of the project's economical and financial viability. On the other hand, it's not matter whatever project it is rather the only matter is whether the project is economically and financially viable.

Investment Techniques Practiced by IFIs

It is stated in earlier, that in the traditional financial system, where capital is rewarded on the basis of a fixed interest rate determined by the expectation of the future demand and supply of capital, an Islamic system calls for rewarding the capital on the basis of ex-post (actual income of the investible funds) return on capital. *Market interest* plays an equilibrium rate for decision in a traditional system. In this context, so far no equivalent substitute has been available in practice for the IFIs to determine the internal rate of return (IRR) or the marginal efficiency of investments (Iqbal, 1997). This is the main shortcoming of IFIs while performing their trading and business activities in the national and international arena. Islamic financial institutions recognizes that investment decision making will have to be based on the concept of rate of return on capital as it participates in real sector activities and not on the opportunity cost of capital represented by the interest rate. For making above calculations of investment decision, IFIs use risk-adjusted expected rate of return for discounting future stream of cash flows and which does not violate any Islamic principle, and standard technique for project evaluation. Yet, this technique is not free from controversy. The issue is how to determine the so-called *"risk adjusted rate of return"* or " cost of capital, in the absence of a system wide benchmark reference rate (Ibid, 1997). So far the literature on Islamic economics and finance has not developed techniques to determine a rate of return at the firm (micro) or economy (macro) level so that investment can be compared for efficient allocation of capital. In this situation, to solve the aforesaid problems, the IFIs use a reference rate or benchmark London Inter-Bank Offer Rate (LIBOR) borrowed from their counterparts in the conventional system.

Reasons of using LIBOR as Benchmark by the IFIs

For the following reasons the IFIs use LIBOR as a benchmark for evaluating their investment projects and program:

- IFIs require a common reference rate to integrate with international capital markets.

- As Western Banks entered into the Islamic financial markets they require a comparable benchmark against their cost of funding in the conventional system. These institutions treated the murabaha mode as synonymous with the conventional money market, which was based on the LIBOR (Thomas, 1995)

- Finally in those markets where Islamic financial institutions coexisted with the traditional banks the LIBOR became a benchmark for competition in attracting depositors.

Arguments of LIBOR technique treated as Islamic Principle

As opined by the Islamic thinkers/researchers that until developing a pure shariah based technique in pricing Islamic investment projects or programs, LIBOR may be treated as Islamic benchmark due to the following reasons:

- LIBOR based markup is part of sale agreement price between two parties and, in case of leasing funds, the LIBOR is used for pricing and performance measurement purposes only and does not influence the actual rate of return on the investment.

- The LIBOR provides price transparency and global real time accessibility, which facilitates ease of operations and integration of Islamic and international financial markets (Siddiqi, 1995).

- This technique is responsive to current economic conditions of the market. When inflation is low, short-term interest rates (LIBOR) remain low (www.investorwords.com).

Now, it has become a common practice to use the LIBOR as a reference rate for mark-up instruments or a benchmark to price trade financing instruments and Islamic leasing funds. Also to deal with the international trade and businesses, IFIs borrow this technique to evaluate their investment decisions/ projects. As Islamic financial markets are mostly dominated by short-term trade financing instruments like: traditional commercial financial institutions so LIBOR plays vital role to investment products. (Richard 1995)

According to the International Association of Islamic Banks, PLS covered less than 20 percent of investments made by Islamic banks world-wide (1996 figures). Likewise, the Islamic Development Bank (IDB) has so far not used PLS in its financial business except in a few small projects (Dar and Presley, n.d.) So, it is seen that, 80% of investment is being channeled through the "cost-plus" (Murabaha) mode of financing. In real situation, the common practice of the financial market as stated earlier is to use the LIBOR as the reference rate for valuation of mark-up instruments. Also LIBOR is used for pricing and measuring the performance of Islamic leasing funds and other trades. In the absence of LIBOR, the prevailing market interest rate would serve the same purpose (Iqbal, 1997).

Review of a Prospective Model ("q" Theory) for IFIs

It is stated earlier that for trading and investment decision making activities, the IFIs depend on LIBOR technique, borrowed from their international counterparts as discussed in the earlier part of this study. Still this technique has become a common practice for IFIs as a reference rate for mark-up instruments or a benchmark to price trade financing instruments and leasing funds. But without doubt, this practice of IFIs is questionable and raises several comments (Khan and Mirakhor, 1988; Khan, 1995). Practitioners claim that this arrangement is temporary until a better substitute and viable solution is developed. In this situation to mitigate the above stated problems, IFIs can consider the prospects of a model or determining the cost of capital of their investment and the economy as a whole, where debt instruments can be eliminated and a equity based financed is encouraged. This model is based on *Tobin's "q" Theory* of Investment and attempts to devise a benchmark compatible with the Islamic financial system (Iqbal, 1997).

In the Islamic financial system, determination of prospective profitability and the rate of return on investment of the same risk class play a pivotal role in determining the relative cost of capital. *'q' Theory of Investment* suggests the use of information in asset markets, especially the stock market in knowing the profitability of investment. This model very much depends on actual situation of the investment projects or programs. The model relates investment to the ratio of market to replacement value. It suggests that when the stock market functions properly in a competitive market the future profitability of investment will be solely summarized by *"q" ratio* It is a simple arbitrage argument. According to this theory, if the market valuation of capital held by a firm exceeds the cost of capital on the open market, then the firms can increase their value by investing otherwise not. Tobin argues that if q ratio exceeds unity, the value of capital investment would exceed its costs, and the firm would have incentive to invest. The model presented by Mirakhor utilizes this concept of 'q' in deriving the cost of equity capital of a firm in the Islamic financial system (Caballero and Leahy, 1996). The

$$P = (Y/V)(1 - d + dq)$$

Where,

P = Firm's cost of capital / shareholder's required rate of return

Y = Value of expected earnings for the next year

V = Present Market Value of the Firm's Stock of Capital / Equity Fund. Since there is no debt financing in the Islamic financial System

d = Sum of fraction of expected earnings retained by the firm and the expected rate of stock financing expressed as a ratio of firm's expected earnings.

q = Firm's 'q' ratio

The model implies that a firm's cost of capital (p) is a function of a firm's q -ratio and the firm's market value (V), stream of expected future earnings (Y), ratio of retained earnings, and new stock financing. The q ratio can simply be derived by dividing the value of the firm (V) determined by the market price of the firm's stock by the replacement costs of firm's assets such as equipment, land, receivables, and marketable securities etc. The cost of capital will fluctuate with the fluctuations in the q ratio, thus signaling the prospects of an investment project and vice versa. A firm's market value reflects the profitability of existing capital. The q ratio is an indication of how much this market value can increase by additional investment, also known as marginal q. Marginal q - the ratio of market value of an additional unit of capital (shadow price of capital) to its replacement cost- is the critical determination of the firm's decision making on investment but is not observable since the shadow price of capital is not observable. Instead, what is observable (in principle) is the average q - ratio market value of existing capital to its replacement costs (Iqbal, 1997).

Hayashi et al. (1990) rigorously proved a relationship of average q with the marginal q based information in stock valuation. A relationship of equality between average and marginal q will hold to provide conditions of perfect competition in product market and linear function of homogenous technology of production and adjustment costs are satisfied. For competitive firms, (price-takers) this relationship is strong because the unobservable shadow price is directly linked to the stock market valuation of existing capital. If one of these conditions is violated, then the average q is no longer equal to the marginal q; however, a relationship may still exist (Ibid, 1990). For example, in firms with monopolistic position (price-takers), average q is higher than marginal q by what is legitimately called the monopoly rent, and in this situation, marginal q that is relevant for making investment as well as capital budgeting decision.

Strength and Application of 'q' Theory

Deriving as firm's cost of capital without referring to a fixed and predetermined rate (interest rate) has immense implications for Islamic financial markets. Extensive research on q theory of investment suggests that it is possible to determine an industry-wide as well as economy wide q ratio. An industry-wide q ratio can very well serve the purpose of establishing the cost of capital for new firms entering the industry and as an indicator of efficiency relative to others in the same industry for existing firms (Ibid.). Existence of an economy wide benchmark has implications at both the micro and macro -level, such a benchmark can facilitate the pricing of assets, utilizing an equity-based reference rate. At the macro level, it will help to develop secondary markets, an Islamic money markets, and an inter bank market also can contribute toward financial innovations. All theses factors are known to be roadblocks to further development and growth of Islamic financial markets. Another promising arena of applying an economy wide q is in the way that governments in Islamic countries may formulate economic policies / reforms for ensuring a competitive market as well as stable market salutation and raising funds for social sector projects.

Besides, a firm's market value generally reflects the profitability of existing capital. The 'q' ratio is an indication of how much this market value can increase by additional investment. Pricing assets using q ratio has several advantages over other methods:

I. The market value of a firm is an indicator of future profitability as perceived by investors expectations rather than the past performance of the firm.

II. Since market value is subject to adjustment by variations in expected profits, 'q' incorporates an automatic adjustment for risk independent of any methodology employed by capital markets to determine risk premium. The value of 'q' should be equal to unity only if profits are high enough to compensate for shareholders risks.

III. Finally as compared to other asset pricing models (capital assets; arbitrage, or option pricing models), a model based on q theory is subject to have less measurement errors.

From the above analyses of the model, it can be said that the entrepreneurs as well as investors can evaluate their investment proposals or existing projects by using q ratio as such that when cost of capital will fluctuate with the fluctuation of q ratio, then it encourages the investors to invest in the project as there is a linear relationship between cost of capital and 'q' ratio.

Some Preconditions for Using 'q' Theory

Despite the considerable theoretical appeal of 'q' Theory, empirical evidence linking q to Investment decision-making of firms has received mixed reviews in the literature (Hayashi et.al, 1990). The said model suggests the use of information in asset market, especially the stock market, in knowing the profitability of investment. Moreover, the model very much depends on actual situation of the investment projects or programs. But when proper information of asset market is not available and the product market is not organized, then the said model cannot function properly according to its principle. Besides, since most Islamic countries are developing countries where capital and financial markets are not fully developed/organized and are not integrated with international financial markets, data are subject to noise and distortion, thus contamining the information content of q and investor's decision-making. (Ibid.). However, the above limitations are not necessarily barriers of calculating q as a benchmark the concept of q-based benchmark is a groundbreaking innovation that requires further refinement as well as research.

Conclusion and Policy Measures

Present research is an initiative to study and examine available investment decision-making techniques of IFIs and various shortcomings of the same. As it is stated in the earlier section that LIBOR is the main decision making tool of IFIs for trading and investment purposes in both national and international arena. As this technique is borrowed from CFS, and not free from interest, so criticisms are raised by the researchers (Khan and Mirakhor, 1988; Khan, 1995) for using this technique in Islamic finance. For probable solution of the said controversy, present research paper analyzes the prospects as well as strength of a technique as q theory of investment. The findings concludes the following opportunities of using the said technique by the IFIs as : i) In Islamic financial system, determination of prospective profitability and the rate of return on investment of the same risk class play a pivotal role in determining the relative cost of capital and 'q' Theory of Investment suggests the use of information in asset markets, especially the stock market in knowing the profitability of investment; ii) The q ratio is an indication of how much this market value can increase by additional investment, also known marginal q. Marginal q - the ratio of market value of an additional unit of capital (shadow price of capital) to its replacement cost ; cost of equity capital / fund and IRR in Islamic principles; iii) This model very much depends on actual situation (ex-post) of the investment projects or programs and relates investment to the ratio of market to replacement value; iv) When the stock market functions properly in a competitive market situation, the future profitability of investment will be solely summarized by "q" ratio.; v) According to this theory, if the market valuation of capital held by a firm exceeds the cost of capital on the open market, then the firms/entrepreneurs can increases its value by investing, otherwise not. If q ratio exceeds equity, the value of capital investment would exceed its costs, and the firm would have incentive to invest; and vi) Debt instruments prevailing in the economy may be rewarded in the current tax system by making interest a tax-deductible expense. Limitations of this model stated in the previous section can be removed by the government intervention for ensuring proper policy measures and sound competition in the market. In this regard, it is mentionable that debt is rewarded in the current tax system by making interest a tax-deductible expense and in this consequence; IBBL recently has been issued 'Mudaraba Bond' which is a close substitute of long-term debt. The study also evaluates another techniques as equity-based cost of capital and IRR as decision-making tools of IFIs, which are compatible in Islamic Shariah as stated in the previous section.

Some Policy Guidelines for Proper and Just Investment Decision Making System of IFIs.

According to the findings of the present study and other previous researches, the following policy guidelines are suggested to the IFIs as well as governments of Muslim countries to improve the existing barriers of IFIs, while performing trade and business activities as per Islamic laws and principles:

- For applying q theory as an Islamic financial tool by the IFIs, an organized market is very much needed and then proper and timely information about the market will be possible. Because the first and foremost condition of applying the said model is that - product/stock market must have to work properly. Moreover, if there is perfect competition in the market, then it is possible to know the real market situations for the investors. However, proper initiatives should be taken by the governments to develop and organize their capital / stock markets so that there is perfect competition in the market. As a result it will be possible for the investors or institutions to evaluate their investment proposals properly.

▪ Government Intervention is most important for enacting and implementing Shariah based laws and regulations to develop Islamic finance and market so that IFIs can extend their business not only in the national arena but also in the international level.

▪ Initiatives should be taken to form *'Accounting and Auditing Organization'* for Islamic Financial Institutions so that these organizations can cooperate to solve the obstacles in existing investment decisions of IFIs. A Bahrain-based AAOIFI seeks to support the faith of Islam by developing accounting standards for Islamic investment vehicles and by conducting related training and publicity. AAOIFI also expects to strengthen the effectiveness of Shariah committees by facilitating evaluation of emerging financing instruments and by aiding in the implementation of Islamic ethics.

▪ The integration of Islamic finance with international financial markets and institutions has demonstrated its viability, competitiveness, resilience and sustainability as a form of financial intermediation. This trend has contributed towards facilitating greater cross border flows in terms of increased trade and investment transactions thereby strengthening the global economic and financial linkages.

▪ The markets for Islamic instruments and government securities remain shallow and an organized international Islamic financial market is still nascent. So, initiatives must be taken to improve the range and sophistication of asset and liability classes and develop new instruments and financial techniques that would enable Islamic banks to diversify their balance sheets (Qorchi, 2005).

▪ The development of a sustainable Islamic financial system that is able to withstand the challenges of the uncertainties and instabilities inherent in the global financial system thus not only requires an effective global financial architecture but a system that is also supported by an appropriate, comprehensive and sound domestic financial infrastructure.

▪ Initiatives should be taken by the IFIs to arrange seminars and symposiums for their prospective clients and as well as to mass people so that they are conscious about their trade and businesses activities according to Islamic principles and its overall economic and social benefits. Besides, research and development centre should arrange scholarship for the contributors / researchers for their latest and modern innovation of various investment decision making tools and techniques

▪ To bring people around to Islamic banking and finance, in the first instance, we need to reinforce credibility, which has suffered in the recent past, both on account of politicians exploiting the idea for promoting their hidden agendas and unscrupulous profit seekers preying on people's gullibility and using religion as a tool to do so. Credibility requires visible operation within a framework of rules everyone can know and understand. Islamic finance has to be transparent, open to inspection by anyone and everyone (Siddiqi, 2001).

Islamic finance is a centuries-old practice that is gaining recognition throughout the world and whose ethical nature is even drawing the interest of non-Muslims (Ross, 2007).

In this regard, a Shariah -based investment technique will play paramount role to ensure a balanced economic activities and development in both Muslim and even Non-Muslim community of the world. Besides, the proper implementation and application of the aforesaid guidelines will contribute a lot on the issues and challenges stated above. Further research is needed to examine the strength and applicability of q theory in Interest-free Financial System.

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Appendix - 1

Concept and Application of LIBOR Technique

LIBOR - London Inter-bank Offer Rate is the most widely used benchmark for short-term interest rates. It is the rate of interest at which banks borrow funds from other banks in the London inter-bank market, or more technically, it is the rate on dollar-denominated deposits, or Eurodollars, traded between banks in London. It is a short-term interest rate or index. Fixed rates are based on the 10-year Treasury Note, which is a long-term instrument. This rate is an average of rates quoted by five major banks: Bank of America, Barclays, Bank of Tokyo, Deutsche Bank and Swiss Bank. The index is published daily in the Wall Street Journal (www.investorwords.com)

LIBOR is responsive to current economic conditions. When inflation is low which is the case in the U.S and Europe, short-term interest rates remain low. While its movements are more reactive to economic conditions month to month, on average, over the past 10 years, LIBOR has been lower than MTA, COFI, COSI and CODI. Due to the above strengths and opportunities of LIBOR, IFIs use this technique to evaluate /price their traded instruments (www.investorwords.com). In this context, the common practice in the Islamic financial market is to use the LIBOR as the reference rate for pricing mark-up instruments . Similarly, the LIBOR is used for pricing and measuring the performance of Islamic leasing funds. In the absence of LIBOR, the prevailing market interest rate would serve the same purpose.

Appendix - 2

Justification of Using Interest-based Investment Tools LIBOR in Interest-free Financial System

The literature on Islamic economics and finance has not developed techniques to determine a rate of return at the firm (micro) or economy (macro) level so that investments can be compared for efficient allocation of capital. In the absence of such a reference rate or benchmark, Islamic financial institutions have resorted to adopting a proxy rate borrowed from their counterparts in the conventional system.

Historically, several factors have contributed to the establishment of this practice are as follows:

- First, Islamic financial institutions required a common reference rate to integrate with international capital markets.

- Second, as Western banks entered into the Islamic financial markets, they required a comparable benchmark against their cost of funding in the conventional system, which happened to be the LIBOR. These institutions treated the murabaha mode as synonymous with the conventional money market, which was based on the LIBOR.

- Finally, in those markets where Islamic financial institutions coexisted with conventional banks, the LIBOR became a benchmark for competition in attracting depositors.

(i) The prevalent practice is defended by the arguments that, in the case of the murabaha mode of financing, a practice to charge the LIBOR-based "mark-up" is still Islamic because it is part of the sale agreement price between two parties; and, in case of leasing funds, the LIBOR is used for pricing and performance measurement purposes only and does not influence the actual rate of return on the investment.

(ii) Further, the LIBOR provides price transparency and global real-time accessibility, which facilitates ease of operation and integration of Islamic and international financial markets.

(iii) Irrespective of various justifications provided for the practice, obviously the use of any interest rate as part of a mark-up (pricing or performance) is not acceptable because interest rate does not represent real rate of return in the economy as intended by Islamic principles (Iqbal, 1997)

Appendix - 3

Abbreviations

AAOIFI	Accounting and Auditing Organization for
ARR	Accounting rate of Return
IFIs	Islamic Financial Institution
CFS	Conventional Financial System
IFS	Islamic Financial System
IFIs	Islamic Financial Institutions
LIBOR	London Inter-Bank Offer Rate
n.d	Date of publication is not mentioned in the text
IRR	Internal Rate of Return
NPV	Net Present Value
PI	Profitability Index

Emotional Labour - An Intruder to Human Mind?

Ms Piyashi Banik

Abstract

Unlike intellectual and manual labour, 'Emotional Labour' is that sort of effort functional in regulating the employees' emotion in conformity with their expected expressions in the business context. Display of certain emotions as parts of their jobs is crucial to promote organizational objectives, especially in reference to service industry; and the targeted people for intended display of desired emotions can be clients, customers, co-workers, students and anybody and everybody the employees need to interact with. Intentional modification of one's emotions and expressions, where the inconsistency is more and frequent, may cause psychological discomfort for the individual. Proper care may be extended to reduce the stress on individuals who attempt these crucial and urgent issues of exercising emotional labour as part of their job requirements. Emphasis should be more on regulating the factors so that the individual's emotional feeling is automatically aligned with the 'display rules' of the organization. In earlier times, the expression 'Emotional Labour' was frequently being considered as one of the attributes of women only, but the changing business environment is erasing away this reservation; studies are revealing the truth that it is becoming an essential attribute for all people and employees concerned engaged into any mode of interpersonal transaction. The present discussion strives to elaborate and explain the conceptual understanding of the term 'emotional labour' marginally focusing on the relevance and the increasing importance of the concept in the organizational as well as the business context as a whole.

Key words

Emotional labour, Display rules, Deep acting, Surface acting, Emotional dissonance, Stress, Burn out.

Introduction

Think about your journey from Kolkata to Heathrow accompanied by a cabin crew whom you have seen hardly once to have a luster in her face. How will be your journey like? Yes, it's true that we are social being, fun loving creature. We like and expect people to be smiling always even in the most uncertain and crisis moment. While traveling a long distance, or while in a hotel, hospital or even in the long queue in front of the teller counter of a bank, we want somebody with a smiling face to attend us. It makes our experiences pleasant and long lasting. But do we get this kind of people always around us? Probably, not. Sometimes we find a cabin crew with a faint professional facial

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expression lacking the real touch of true feeling of hospitality. Nurses in hospitals are often harsh, though may be, sincere to their duties.

These are some incidental examples where people at work are significantly lacking of emotions. By definition, emotions are overt reactions that express feelings about events (Greenberg and Baron, 2005). One gets angry when someone fails to keep promise. We are anxious if the Boss talks about the job losses around industries. We also feel happy to meet a childhood friend after long years of separation. All these events certainly have influences, either positive or negative, on our work behavior. A person having peace of mind is sure to provide a better customer satisfaction than a disturbed family-man striving hard to reconcile peace at home. Research has found that emotions play an important role on the job in so far as they influence job performance.

The role of 'emotion' is to a large extent critical when one is talking about personnel in a service sector especially the hospitality, tourism or health sector (Payne, 2006). People, who are good at 'reading' and understanding emotions in other and also who are able to regulate their own emotions, may have a better edge while dealing with people. Emotion, truly, is one of the unique qualities that make us human. Emotion is used to create, observe, and preserve social bonds.

Expression of positive feelings is one of the criteria for workers in their respective fields of employment. Service exchanges between worker and client require the worker to sense the right tone and medium for expressing a point and/or feeling and then to determine whether, when, and how to act for getting the right business. But it may not always be possible to display the right mode and level of expressions by employees who have their personal lives and emotions too, which often lay impact on their work behaviour. Employees bring in their personal experiences in their office. But this can be intolerable to an Airline-Guest-Relationships Manager if he finds any disappointed guest giving a negative feedback about the in-flight-service of that airlines company. So one, working with public, needs to be very careful about the expressions of emotions and ensure that it always follow the standard norm of his/her profession, or specifically said, matches the job requirement. It also shows the employee's concern for offering the best value service to their guests.

Emotion, hence, requires to be managed according to the demands of the job, profession, or business, in a wider sense. Flight attendants, hence, are required to be 'nicer than natural', while debt collectors or law man needs to be 'nastier than natural'. Studies reveal that to succeed and prosper, organizations need people who are not only skillful and highly motivated, but also emotionally balanced. Emotional Labour, in this regard, has a prime role to play to spice up the emotional state of an employee in conformity with the job/role requirement.

The concept and use of emotional labour has been a major area of discussion in recent days because of its increased necessity in any organizational context, especially the service sector.

Emotional Labour - Concepts

The term 'emotional labour' came into existence through the writing of Arlie Russell Hochschild, a sociologist, who defined the term in his famous publication: The Managed Heart: Commercialization of Feeling (1983). In his words, emotional labour refers to "the management of feeling to create a publicly observable facial and bodily display" intended to produce a particular state of mind in others; "emotional labor is sold for a wage and therefore has exchange value" (Hochschild, 1983). According to Hochschild, jobs involved in Emotional Labour:

- Require face-to-face or voice-to-voice contact with the public
- Require the worker to produce an emotional state in another person
- Allow the employees to exercise a degree of control over their emotional activities

The psychological effort involved in holding back one's true emotion in order to conform to the display rules of the organization or job is the basic understanding of the concept of emotional labour. So, whatever might be the actual status of mind of an employee, he/she requires to look cheerful, showing energy, vitality to its fullest, wearing a sticky smile always.

This outward expression of desired emotion is often conflicting when the occupant of the desired emotion is facing turmoil in his/her life actually. This inconsistency between the felt emotion and displayed emotion creates emotional dissonance in the person.

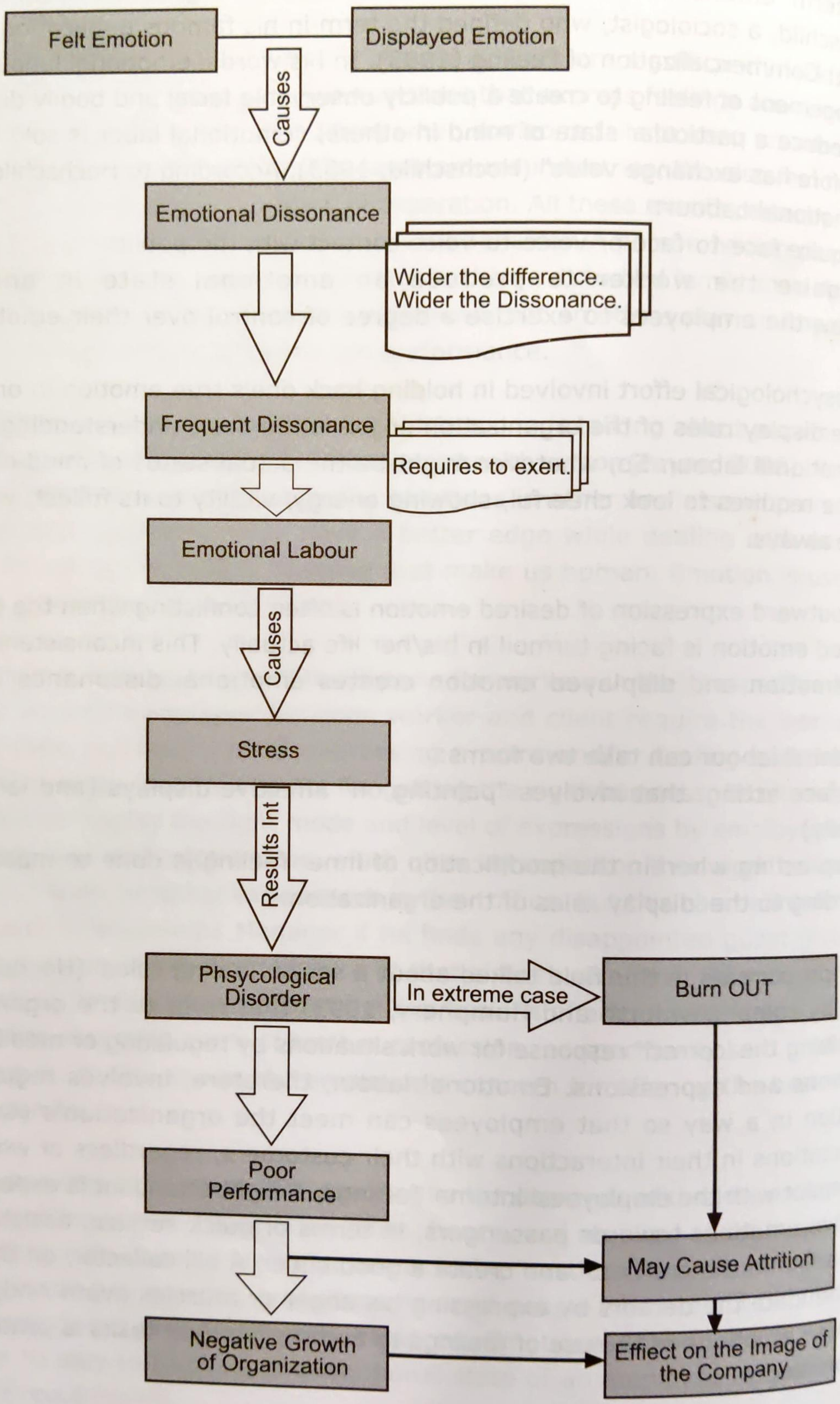
Emotional labour can take two forms:

- Surface acting, that involves "painting on" affective displays (and lack the real feel actually)
- Deep acting wherein the modification of inner feeling is done to match the emotion according to the 'display rules of the organization.

Early proponents ih this field talked about a set of 'feeling rules' (Hochschild, 1983) or 'Display rules' (Ashforth and Humphery, 1993) that refer to the organizational rules describing the 'correct' response for work situations by regulating or modifying one's own emotions and expressions. Emotional labour, therefore, involves regulation of one's emotion in a way so that employees can meet the organization's (or job's per se) expectations in their interactions with their customers, regardless of whether they are discrepant with the employees' internal feelings. A flight attendant is expected to express positive emotions towards passengers, in terms of quick service, assistance in finding their seats in the craft etc. and create a good cheer. A bill collector, on the other, needs to intimidate the debtors by expressing his anger or muscles even! And, the display of all these emotions or the use of feelings to accomplish their tasks is central to their role performance!

The following diagram summarizes the relationship among the above concepts and the subsequent probable consequences. (please refer the next page for the diagram)

Figure 1: Emotional Labour and its Consequences



Relevance of the Concept

In earlier times, emotional labour was frequently being considered as one of the attributes of women only. Social and business world today entails every human being in general to be passionate in the use of the emerging concept. Human being is a complex of many roles. The moment a baby is born, our expectations from (him or) her starts cropping up. As the baby socializes and grows up, the person becomes pre-occupied with diverse roles like daughter, sister, friend; and gradually assumes many other roles like wife, mother, and a professional. Most strikingly, each role has their distinct way of manifestation. Broadly speaking, roles can be classified into two distinct categories- organizational and individual roles with a number of sub-classes into it. Different roles envisage distinctively differentiated expectations from each of these roles.

Tension may creep into if the role incumbent is dwindled by any strife between the roles. If a person is frustrated at her personal life as wife, surely she carries some part of her frustration in her workplace too. But it's a different scenario here! Her job of 'sales assistant' demands her to be actively engaged when a buyer is looking for a comfort fit 'gown' to buy. Naturally, that pre-occupied frustration caused by domestic concerns need essentially and immediately be replaced by a forced smile asking 'may I help you ma'am?' Clearly, the inconsistency between these two contrasted feelings creates dissonance - more the inconsistency, more is the degree of dissonance; and subsequently more is the need for emotional labour to neutralize the negative feeling and to wear a smile in order to conform to the 'display rules' of the task.

Tension may also arise if the role is conflicting within itself or even if it is ambiguous, and lack clarity, ultimately affecting the outward expression of the person into a job and task function. But, how much conflicting the role is, an employee needs to 'enact' the behaviour to get the business done (i.e. satisfy the customer or client) - and she needs to exert that extra effort to put on a smile in her depressed face.

Dissonance or inconsistency among feelings may also be created because of organizational reasons. The sales girl selling products door to door in a hot, sunny day needs to put across her full energy and vigour when she is expecting a lady to open the door to whom she may sell her product.

Although this emotional labour is extremely useful for organization, the frequent and repetitive use of emotional labour may be detrimental to the employees using it. Prolonged exposure to dissonance and the subsequent action of exercising emotional labour cause stress in people. This stress, if not taken proper care of, can even cause burn out to employee adding continuously to the woe of psychological chain factors resulting into inverted production, lesser employee and customer satisfaction, poor inter and intra personal relationship, and most importantly, a poor organizational climate (Mann, 2004).

The strain of masking emotion can cause more serious stress when people tend to 'surface act' (i.e. managing observable expressions) (Persaud, 2004). If a person is 'deep acting'(i.e. managing feelings), the high level of emotional labour may be rewarding from the organization's viewpoint. But just think about the intelligence and effort she has shown to 'manage' her heart to conform to the demand of the job and organization! People at call centers providing support over the phone requires no facial expression as such, though the need for a supportive, calm and melodious voice can no way be ignored.

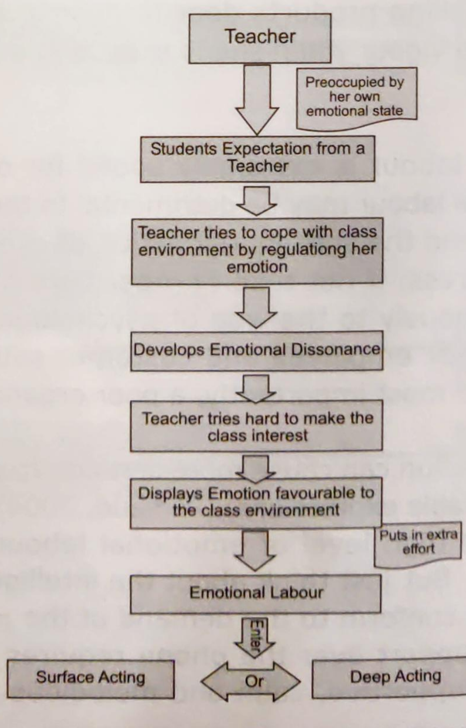
Requirement for the degree of emotional labour is less here and prominent only in voice of the employee. A nurse, on the contrary, needs to be continuously nice, caring and affectionate to a patient and his companions too.

Emotional Labour in Use

Nicky James defines emotional labour as 'the work involved in dealing with other people's feelings, a core component of which is the regulation of emotions' (Grandey, 2000). Other expressions used for this concept are: 'labour of love', 'sentimental labour', 'labour with a smile'. Some service industries, such as medical professionals, call center executives and airline attendants are subject to higher expectations than others. These industries spend a substantial amount of their work interacting with people and they must be cordial to their patient, customer, or client to 'manage' the latter's emotion and their own as well. Professionals in education industry, especially the teachers also need to exercise their emotional labour. Unless a teacher is intimate enough to a student while presenting the very interesting success story of Lakshmi Mittal, the India born business tycoon how he became billionaire, or even the myth of 'Ramayana'-the class lecture become a mere deliberation of few carefully arranged facts and figures without any feel or life into it. Learning, in such a situation, can doubtfully be effective. Earlier, emotional labour demands and display rules were viewed as characteristics of occupations like nurses airline attendants, restaurant workers, counselors, bill collectors. However, display rule are effective in interpersonal transactions also where various roles and jobs are shared by many kinds of job occupants in an organization. In simple sense, emotional labour is a component of the dynamic relationship between two people: employee and customer/client or employee and employee. When a service transaction goes wrong, the expecting party at the opposite perceptibly has considerable reason to become unsatisfied and unhappy.

The following diagram shows the possible flows in the generation of Emotional Labour in the context of teaching profession and shows how a teacher gets involved into it

Figure 2: Emotional Regulation at Work



Emotional Labour: A Cause for Stress?

Too much of repetitive emotional dissonance and lack of control over events can be a source of life stress and job stress. The definition of emotional labour also extends to involve the inner state of tension that occurs when a person is bound to display required state of emotion not by his will, but by compulsion. Although dissonance is a negative state of being, surface and deep acting are processes that may have negative or positive outcomes (Dijk and Brown, 2006). Nature of emotional labour used in work context can be an input for designing or adopting organizational training and stress management programmes. Effortful acting on this issue maps designing emotional regulation and mechanism of emotional labour.

Workplace autonomy, superior and co-worker support, higher team performance, positive feeling about the organizational environment may minimize the need for emotional labour and reason for 'acting' because the 'feel' will evolve from within. Studies have strong evidences that disclosure of emotional labour help individual cope with stress and buffer against health risk.

Emotional Labour and Emotional Intelligence - The Link

Contrasted with the earlier practice of measuring Intelligence Quotient (IQ) of an employee, organizations today are more keen on measuring their Emotional Quotient (EQ) with a conviction that instance of high EQ will make the person more attached and dedicated to her work and workplace. Following this evolved the concept of 'Emotional Intelligence' meaning a group of abilities that enable individual to recognize and understand their own and others' feelings and emotions and to use these insights to guide their own thinking and action (Hellriegel et al, 2005). The term Emotional Intelligence is surely an indication of a person's ability or maturity per se to handle his/her own emotions as per the demand of the situation (Shekaran, 2004).

Emotional Intelligence has four components:
Self awareness
Self control
Social concern
Social skill

Self-awareness is the ability to recognize and understand one's moods, emotions, drives etc. as well as their impacts on others. Self control, on the other, is the ability to regulate and redirect one's own impulses and moods.

Social awareness is the ability to understand the emotional makeup of other people, and the skill to treat people according to their emotional reactions. Social skill, lastly, is the ability to build social networks, manage relationships, and build rapport (Hellriegel et al, 2005).

Hence, the more a high degree of Emotional Intelligence a person is more will be his/her ability to 'manage' the emotions in workplace in conformity with the 'display rules'. This may help the employee to 'deep act' than to 'surface act' to avoid a 'feel-less' smile on the face.

Conclusion: Ending the Story

Emotional labour is an application-oriented concept to be highly practiced in organizations. Simply stated, emotions are to be managed at work in order to conform to the display rules stated by the organization and also the nature of job. The effort it entails to maintain the display rules, relates to the number of job stressed, and in extreme, cases of burn outs in an organization. One of the effective ways to reduce the amount of added effort requirement to minimize dissonance may be- the proper alignment of individual with his/her job context, point of satisfaction (for both client, customer or self), enforcement of positive work behaviour, peer relationships, Employee Assistance Programmes (EAP), employee counseling, refresher courses or employee re-training programmes wherever and whenever required - and above all, let percolate the feeling of 'one-ness' and self-identification of employees with the organization removing all discontent and non-alignment between various roles of a person in the context of family and organization so that an employee need not 'make' his/her expressions; and 'overt reaction' (i.e. emotion) is generated every time automatically without the enforcement of any external catalyst or effort.

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Market for Private Health Insurance In a Developing Economy: A cross-country analysis

Durba Chakrabarty[1]

Abstract

This paper attempts to find out the prospect of private health insurance market in developing economies like India treating the presence of that in the developed economies as benchmark. For any country the prospect of emergence of such a market depends on a number of push and pull factors. Here we have considered a list of macro variables representing indicators favourable for the growth of such market in an economy and tried to assess the changing importance of such forces over the stages of economic development Since, the development of safety net is essential in the present globalized context when medical poverty trap has become a regular phenomenon for the socio-economically vulnerable households of poorer regions hence, it is claimed that to bring the majority of households of the unorganized sector under the umbrella of health insurance the providers may tie up with the self-help groups (SHGs) at the grass-root level where the sheer group formation mechanism will take care of the adverse selection problem and the internal monitoring practice will handle the issues related to moral hazard.

Key Words

Market for private health insurance, Health policy, Health regulation

Introduction

It was the introduction of General Agreement on Trade in Services (GATS), a treaty of the World Trade Organization (WTO) in January 1995, which brought a massive change in the health insurance scenario. The treaty was created to extend the multilateral trading system to the services sector, in the same way the General Agreement on Tariffs and Trade (GATT) provides such a system for merchandise trade. Many services including that of health insurance, which have long been considered genuine domestic activities, have increasingly become internationally mobile with the opening up of services sector to domestic and foreign private companies (Lipson, 2001). A lot of importance has been given to the role of the health insurance market in both the developed and developing countries. In fact there has been a steady transition of healthcare from merit good to market good in the post globalization era.

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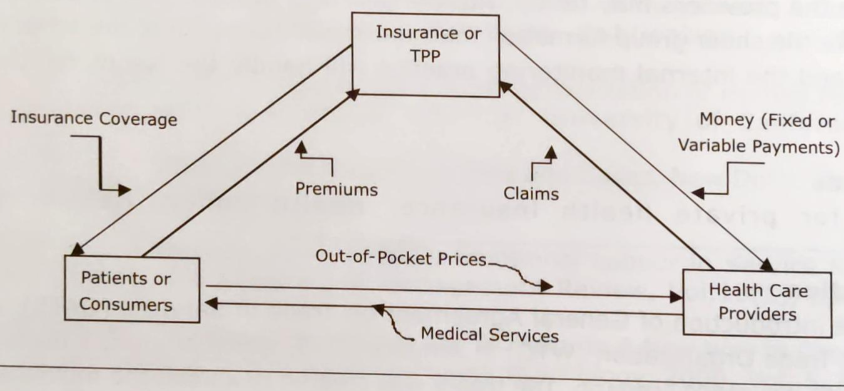
Thus, the market for medical care takes into account the efficiency aspect but may not be equitable. However, if the cost of treatment is lowered its access and reach will improve and there in comes the role of third party payment (TPP). The basic functioning of health insurance companies or third party payers is that they act as intermediaries between the two already existing agents in the health care market i.e., the patients and health care providers which is quite clear from the figure: 1. The TPP could be either a Private Health Insurance Company or the Government or the Non-Governmental Organizations (NGOs). Here, we want to concentrate on the role of private insurance company as the Third Party Payer in a globalized system under GATS. Further with the advancement of medical technology and increased awareness among common masses, a sound health insurance market would be a pre-condition for the development of an efficient and equitable market for medical care. If the market exists it would help the victims to get assured good quality treatment at low cost through either risk-pooling (Arrow, 1963) or income-pooling (Nyman, 2003).

The basic objective of this paper is to find out the prospect of private health insurance market in developing economies treating the presence of that in the developed economies as benchmark.

Figure 1: The Importance of Health Insurance or Third Party Payer
Source: Neun & Santerre, 2007



The private health insurance market is relatively well developed in OECD countries of United States, France, Netherlands, Germany, Canada etc and provides coverage to ancillary services. In addition, private health insurance of some countries reimburses hospitalization and doctor's charges. One unique thing of private health insurance (PHI) in Canada is the coverage of prescription drugs outside of hospitals that is not provided by public coverage (Glied, 2001; Colombo and Tapay, 2004). However, in Latin America and the Caribbean countries, the social health insurance (such as worker mutual funds known as obras socials in Argentina and ISSSTE, the state workers fund in Mexico) has emerged as an important financing instrument along with private health insurance (Sherlock, 2006). The less developed countries of Sub-Saharan Africa and South Asia are opting either for community or market care system due to lack of government provisioning. However, there is a feasibility of well-developed private health insurance market in the East Asian and the Pacific region due to huge proportion of out-of-pocket payments that could be reallocated to these private prepaid plans and also the existing social security schemes are facing high health care costs.

India presently spends about 6.5% to 7% of the GDP on healthcare with the private healthcare expenditure being 4.7% of GDP and nearly 1.3% is borne by the government (Sharan). Most of the private healthcare financing is out-of-pocket. A negligible part is covered by health insurance and that too in case of private health insurance (PHI), the coverage is just 0.6% of total health expenditure (Dreschler and Jutting, 2007; Ahuja 2004). Significant changes took place in the Indian Health Insurance sector with the introduction of GATS and the passage of the Insurance Regulatory and Development Authority (IRDA) Bill in 1999 which gave boost to the development of private health insurance market of India. The Government of India gave license to 24 new private insurance companies out of which 21 have foreign equity participation. (Purohit, 2001). Besides, there are Non Governmental Organizations (NGOs) or community based health insurance (CBHI) such as SEWA (Ahmedabad), ACCORD (Nilgris, Tamil Nadu), Seba Cooperative Health Society (Kolkata) etc. Such CBHI schemes have been strictly advocated by the international institutions like the World Bank, World Health Organization and International Labour Organization in developing countries like India due to voluntary participation of the people, not-for-profit objectives, some degree of risk-pooling and scheme management by the people in the community itself and also well suited to the needs of the poor. Though such schemes have greater accessibility to healthcare services but nothing can be said about the quality of healthcare available to the poor. An important development that took place in the health insurance sector in India was the establishment of the Third Party Administrators (TPAs) in 2001. These TPAs are intermediaries who bring all elements of healthcare together and ensure that policyholders get hassle-free treatment, insurance companies pay for efficient and cost-effective services and the healthcare providers or policyholders get their reimbursements on time (Bhat & Basu, 2004; USAID, 2008).

All these reforms are paving the road for development of a buoyant health insurance market in a developing country like India. Here we have considered Griffin and Shaw's analysis (1995) on the Sub-Saharan Africa to explore the potential of developing private health insurance market in that region. A bunch of macro variables are broadly identified to capture both the supply as well as the demand side of the insurance market. First of all, they concentrate on the role of supply side. The insurance schemes must be such that it should have low administrative costs, which is feasible where there is denser population and better developed infrastructure. Generally it is well recognized in the literature that the provisioning of health care services all over the developing world has an intrinsic urban bias (Banerjee and Nag, 1998). The most appropriate macroeconomic variables to capture these dimensions are population density (PD) and share of urban population in total population (URB). Another requirement for a viable health insurance scheme is the check over the problems of adverse selection and moral hazard , which is possible through risk / income pooling via group insurance. Group insurance practices are more pronounced among the organized sector employees. Since in developing countries the share of organized sector employment in total employment is negligible, hence as a crude proxy may be tried as the workforce participation rate (WPR). For example in India, the share of the unorganized worker consists of 93 percent of the total labour force and only 7 percent is that of organized sector workers (Oberai and Chadha, 2001). Since health care service is a merit good here the private initiatives are likely to follow the public sector involvements and there is a built-in public-private complementarity in this sector. The official aid flows in health (HAID) sector may be taken as an indicator of the overall status of the sector. Of course, for OECD countries this indicator should not work. This is especially relevant for the developing ones.

The demand for insurance depends on the ability to pay. There exists a positive income elasticity of demand for insurance and the best way to represent it at the macro level is through per capita income (PCY). Another important dimension that influences the spread of the health insurance market is the size and quality of private health sector. If the economy has a buoyant private health care system then treatment in private hospitals becomes a reality and to cover cost of such episodes risk-averse agents would be interested in buying private health insurance. The relative size of private healthcare system may be evaluated in terms of variables like the *share of private medical expenditure in the total healthcare expenditure*, while the quality of care will depend on health infrastructure like *availability of physicians, hospital beds* and other associated services and so on. The paper attempts to verify this connection with the help of appropriate cross-country data.

The rest of the paper is organized as follows: section II presents the data base, section III carries out the quantitative analyses, section IV presents an assessment in Indian context, section V concludes the paper and section VI presents the appendix.

Selection of Countries and Data Sources

Here we have undertaken an econometric exercise to assess the role of different contributing factors in determining the prospect of private health insurance market in different countries located at different stages of economic development. Information on different macro indicators (appropriately adjusted) is collected from the World Bank's interactive data CD on World Development Indicators (WDI), 2007 and different free websites like www.geographic.org, www.who.org, etc. The common year selected for the cross-section analysis in 2000-01 for which information is available on all required variables. If for some countries data are not available on any specific variable for this specific year then that has been proxied by the available year in the closest vicinity. Here the variables selected are reported in table-1. (please refer page no.49)

The dependent variable is the relative spread of private health insurance market which can be represented in different possible ways: (i) either by the percentage of population covered by health insurance, or (ii) by the amount of premium paid by the insured, or (iii) by the amount of coverage purchased by the insured or, (iv) by the actual claim amount paid by the insurance companies. Here we have (iv) calculated by deducting the out-pocket expenditure on healthcare from the total private healthcare expenditure and the difference has been designated as the support from private health insurance. Though this is definitely an underestimation (as it implicitly assumes equivalence between premium collected and claims paid) we did not find any better option to fall back on.

The entire data set has been divided into three subgroups of countries on the basis of Gross National Income (GNI) per capita (World Development Report, 2007), expressed in PPP$ at 2000-01 prices.

LIC (Low Income Country)	:	PPP$ 875 or less
MIC (Middle Income Country)	:	PPP$ 876-PPP$ 10,725
HIC (High Income Country)	:	PPP$ 10,726 & above

Table 1: Relevant Variables Selected to Assess the Prospect of Private Health Insurance

		Data Source
	Private prepaid plans as a percentage	WDI (2007), www.who.org
	Population density (people per square	WDI (2007)
	Share of urban population in total	WDI (2007) www.geographic.org
	Workforce	WDI (2007), www.geographic.org
	Official Development assistance and (Current US $)/GDP	WDI (2007) www.geographic.org
PCY	GDP (Gross Domestic Product) per capita (constant 2000 US $)	WDI (2007)
PHE	Private health expenditure as a percentage of GDP	WDI (2007)
DOC	Number of physicians per 1,00,000 people	WD I (2007)
BED	Hospital Beds per 1,00,000 people	WDI (2007)

Table 2: Selected Countries across Income-groups

Country - type	Country - Name	Total Number
High - income	US, UK, Australia, Canada, France, Ireland, Germany, Switzerland, Netherlands, Sweden, Portugal, Austria, Italy, Spain, New Zealand	15
Middle - income	Mexico, Malaysia, Romania, Hungary, Argentina, Chile, Venezuela, Brazil, China, Sri Lanka, Thailand, Indonesia, Philippines, Colombia	14
Low - income	Bangladesh, Ghana, India, Kenya, Malawi, Nepal, Vietnam, Ethiopia, Nigeria, Bhutan, Senegal, Cambodia, Mali	13

Table 3 presents the entire data set used for the subsequent statistical analysis.

Table 3: Relevant Macro-Indicators of Private Health Insurance

Countries	PHI	PD	URB	WPR	PCY	PHE	DOC	BED
				HIGH -INCOME COUNTRIES				
US	73.5	30.8	81.01	53.67	34599.5	7.4	220	350
UK	30.5	246.9	89.75	50.62	24150.9	1.4	190	420
Australia	36.3	2.5	87.13	49.76	20866.9	2.8	250	780
Canada	46.5	3.4	78.10	51.97	23219.5	2.6	210	380
France	56.6	107.1	75.25	44.10	22547.8	2.2	330	810
Ireland	49.5	55.2	59.23	46.32	25271	1.7	220	460
Germany	44.9	235.7	74.57	48.77	23114.2	2.1	330	910
Switzerland	25.9	179.6	72.31	55.23	34248.6	4.6	350	600
Netherlands	75.7	470	76.96	51.23	24270	2.9	220	510
Sweden	8.9	21.6	83.96	51.94	27286.5	1.3	310	360
Portugal	19.2	111.7	55.36	52.01	11016.2	2.4	320	380
Austria	30.5	97.2	64.87	47.67	24194.8	2.8	320	870
Italy	12.8	193.6	66.40	40.82	19269	2.3	420	470
Spain	16.9	80.7	76.81	46.18	14421.9	2	320	410
New Zealand	30.1	14.4	86.55	50.48	13653.9	1.7	220	610
				MIDDLE - INCOME COUNTRIES				
Mexico	4.7	51.3	72.93	39.30	5934.9	2.9	160	110
Malaysia	24.6	69.9	65.21	44.46	3927.4	1.6	70	190
Romania	0	97.7	54.68	51.88	1650.9	1.7	190	740
Hungary	10.2	113.9	65.06	41.74	4606.2	2	310	810
Argentina	36.7	13.5	89.06	43.92	7702.9	3.9	300	410
Chile	52.9	20.6	87.36	40.11	4880.2	3.3	110	260
Venezuela	13	27.6	94.07	44.52	4818.7	2.8	190	80
Brazil	35.1	20.5	81.67	48.27	3461.1	4.5	110	270
China	4.4	135.4	35.82	58.56	949.2	2.8	160	250
Sri Lanka	18.5	299.5	15.80	42.42	843.6	1.9	40	220
Thailand	23.1	120.2	31.21	54.86	1997.5	1.5	40	220
Indonesia	27.8	113.8	126.39	17.63	800	1.7	20	600
Philippines	22.8	254.1	54.61	37.91	995.1	1.8	60	100
Colombia	41	37.9	75.57	48.95	1989	1.5	150	110
				LOW- INCOME COUNTRIES				
Bangladesh	11.9	990.4	23.15	44.32	365.3	2.3	20	30
Ghana	20.1	87.3	44.75	44.30	250.3	4.3	10	150
India	7.9	341.7	27.75	39.07	452.9	3.4	50	90
Kenya	19.9	53.9	19.93	44.93	413.9	2.3	10	160
Malawi	57.6	122.4	16.74	51.83	151.4	3.4	1	130
Nepal	8.8	170.8	13.25	37.15	224.7	4	5	20
Vietnam	12.9	252.4	24.22	50.41	396.9	3.8	50	240
Ethiopia	20.9	64.3	14.94	44.13	122	2.5	2	20
Nigeria	7.3	129.1	41.86	34.50	390.9	2.8	30	170
Bhutan	0	12.8	2.89	10.69	739.9	1.5	5	160
Senegal	5.1	53.7	42.04	40.78	423.9	2.8	10	40
Cambodia	6.8	72.2	17.64	47.88	286.9	4.6	10	50
Mali	0.9	9.5	30.41	45.12	207.9	4.2	4	20

A Few Econometric Exercises

Using the data presented in Table 3 we have carried out some exploratory as well as confirmatory analyses on the observed relationship between PHI and the other explanatory factors. Tables A.1 and A.2 represents the mean, variance and the coefficient of variations of different characteristics within the countries located at any particular stage of development. For PHI, URB, WPR and DOC the low-income countries have the lowest mean and highest coefficient of variation indicating substantial heterogeneity among the selected developing countries. Except for PD and PHE the developed countries show high level of homogeneity. The variation in PHE is due to the different practices in provisioning of healthcare ranging between National Health Service in UK to dominantly private care in the USA. In terms of PCY the middle-income countries are most diverse among themselves with a CV equaling 68.80 as opposed to 28.98 for high-income developed and 47.68 for low-income developing countries.

To capture the variations across different types of countries over any particular characteristic the method adopted is as follows:

$$X_j = \frac{\bar{X}_j}{\sum_j \bar{X}_j} \times 100$$

where j= High, Middle, Low and X represents the relevant variable. Table A.2 presents these percentage break-ups. Figure 1 presents the situation graphically. It is apparent from the graph that the coverage of *private health insurance* increases over the stages of development; the same holds good about *urbanization*, though there is a clear sign of convergence. *Workforce participation rates* are not strikingly different, however, the quality of work and work conditions are not similar. The developing world is shouldering the burden of growing informalization whereas the developed world is very much under the shield of formal employment. The workforce participation rate can proxy the extent of group insurance provided the nature of employment is formal. However, for mixed employment the proxy would lose its strength. The *population density* is bi-modal in nature and the distribution of *per capita income* is extremely skewed. *Private health expenditure* does not reveal any distinctive pattern, as here the data quality is utterly doubtful. Another possible reason of this absence of pattern may lie in the different practices of health care financing followed in different high-income countries. The *health related manpower* (DOC) and *infrastructure* (BED) behave in the same manner and increase steadily over the stages of development.

Analysis of Correlation

Table 5 presents the pair-wise correlation for all those relevant macro-variables. The dependent variable PHI has statistically significant correlation with almost all the proposed explanatory variables except population density and private healthcare expenditure. The degree of urbanization has strong correlation with the per capita income and healthcare infrastructure (DOC, BED) indicating the dominance of urban-bias in the pattern of provisioning. The same claim is re-endorsed through the significant correlation between (URB, DOC), (WPR, DOC) and (PCY, DOC).

Workforce participation rate, per capita income and availability of physicians are all pair-wise strongly correlated. Again the two "quality of care" related variables DOC and BED are highly correlated among themselves. Hence, inclusion of both in the regression would cause multicollinearity. Therefore, the regression would drop PD, HAID, PHE, and BED as possible explanatory variables and would concentrate on URB, WPR, PCY and DOC only.

Figure 1: Indicator-based Relative Positions for Different Country-Groups

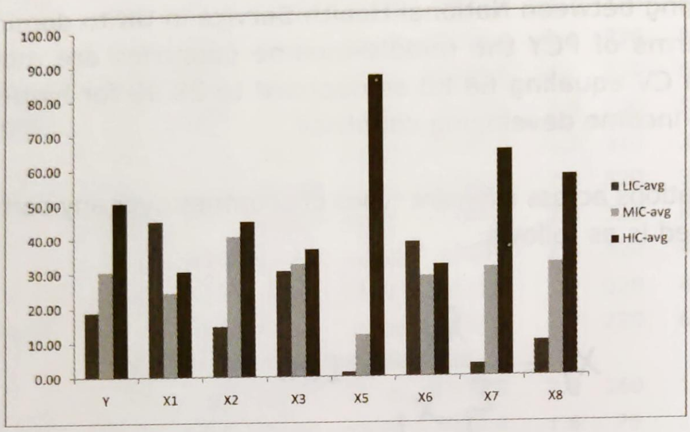


Table 4: Pair-wise Correlation Coefficients

	PHI	PD	URB	WPR	PCY	PHE	DOC	BED
PHI	1.00							
PD	-0.03	1.00						
URB	0.43*	-0.25	1.00					
WPR	0.29*	0.02	0.09	1.00				
PCY	0.55*	-0.0 7	0.54*	0.39*	1.00			
PHE	0.21	-0.09	-0.08	0.21	0.11	1.00		
DOC	0.29*	-0.13	0.61*	0.37*	0.77*	-0.09	1.00	
BED	0.35*	-0.10	0.55*	0.18	0.62*	-0.20	0.75*	1.00

* indicates correlation is significant at the 0.10 level (2-tailed).

Analysis of Regression

When PHI is regressed on URB, WPR, PCY and DOC except for the workforce participation rate the coefficients are statistically significant at less than 5% level with expected sign. As the degree of urbanization goes up the extent of private health insurance market grows (see table 6); again the same holds for per capita GDP. The workforce participation rate failed to influence the size of the private health insurance market because of its extreme heterogeneity in terms of both the nature of job and the conditions of work. Here the extent of difference is so enormous that the quantitative variable, WPR loses all of its significance. The statistically significant negative coefficient of DOC deserves some special attention. In the previously presented analysis of correlation rDOC, PHI = 0.29 (confer table 5), which is positive and statistically significant at 10% level indicating a complementarity between private and public market for medical care. As the provisioning expands a matching expansion of private market is observed (due to localization effect) and supply-induced demand enhancement leads to a buoyant market for private health insurance. However, this complementarity hypothesis gets questioned by the negative sign of DOC in regression analysis where one possible explanation for negative sign may be non-availability of trained man-power leading to greater perception of health risk and a consequent higher demand for health insurance. Another plausible hypothesis may be as follows: if good quality medical service is available in the public domain then the demand for private care would be low and this substitution relation between public and private care would dampen the spread of private health insurance market. This explanation, if correct, is more likely to hold for low-income countries. Whether the supply-push effect or the demand-pull effect would dominate may depend on the overall economic position of the country. To explore this possibility we have introduced country-dummy D1 and D2 for the LIC and MIC respectively, treating HIC (OECD countries) as the reference category. Though the countries were grouped into different stages of development following per capita income, the dummies so defined are expected to capture the influence of non-income dimensions like differences in infrastructure, life-style, etc. on the study variable. Both the dummy variable coefficients are negative in sign but statistically insignificant indicating the absence of any significant country-effect (see table 6).

For further exploration of the situation we decided to study the country-group-specific scenario. Is the nature of *pull* or *push* factor changes across the stages of development? The major bottleneck to carry out such analysis is the inadequacy of the group size under each category. So, we take recourse to step-wise regression. The step-wise regression across all country groups is reported in Table 6 whereas the regressions for each group separately and all possible pair of groups are presented in Table 7. It is apparent from the table that for LIC the influence is positive with statistical significance of 10% while for the combined group of HIC and MIC it is negative with same significance level. This indicates the presence of substitution relation in richer countries between private and public provisioning of healthcare related services; if quality of public service is not up to the mark relatively more affluent people may opt out (Sekhri, Savedoff and Tripathy, 2005). In the poorer countries the modern allopath treatment is gradually earning popularity and recognition. It is mostly the responsibility of the public sector to take initiative in this regard. Here the private health sector grows under the umbrella of public system and, hence, the complementary relation dominates.

Table 5: Alternative Regression Results (All Countries)
Dependent variable: PHI

Regressors	OLS Regression	Regression with Dummy	Step -wise Regression
Constant	-6.832 (-0.48)	24.678 (0.23)	
URB	0.248 (2.31)**	0.178 (1.27)	0.286 (2.99)***
WPR	0.415 (1.37)	0.358 (1.13)	0.560 (1.86)*
PCY	0.001 (3.48)***	0.001 (1.94)*	0.0004 (1.63)
DOC	-0.081 (-2.56)***	-0.095 (-2.53)**	-0.034 (-1.77)*
D1		-9.903 (-0.55)	
D2		-1.865 (-0.13)	
$\bar{R}^2$	0.380	0.357	
F	$F_{4, 37} = 7.27$***	$F_{4, 35} = 4.80$**	Significant at less than 10% at each step except for PCY
df	37	35	40 at each step

Note: *** Statistically significant at less than 1% level;
** Statistically significant at less than 5% level;
* Statistically significant at less than 10% level.

An Assessment in Indian Context

The foregoing analysis suggests a strong causal relation among the extent of private health insurance market with that of urbanization, per-capita income and medical infrastructure (including the availability of qualified medical personnel). The obvious implication of this finding is an expansion of the private health insurance market over the stages of development. Using the regression estimates when the PHI is predicted for India the projected value turned out to be 12.72% as against the actual value of 7.9%. i.e., even in terms of this conservative estimate what should be the spread of the private health insurance based financing the actual is lagging far behind that level. Hence, there is the need for regulation for effective functioning of the private health insurance market so as to provide equitable, affordable and accessible healthcare to all.

Among the different regulatory practices in India, one includes minimum capital requirements and surplus (over liabilities) requirements, known as the solvency margin. Further there should be a uniform minimum benefits package applicable to all of its clients so that the insurance companies may not indulge in underwriting. Also, the language of the insurance contracts needs to be defined in details; the terms used in the contract should be clear and easily understandable. To protect consumer's interest a number of laws are already in existence like the Insurance Act 1938, Consumer Protection Act (COPRA) 1986, Arbitration and Conciliation Act 1996, Ombudsman Rules 1998 issued by the IRDA. Additionally the regulations on Licensing of Insurance Agents in 2000 required among other things minimum standard education, number of hours of practical training, successful passing of the licensing examination and adherence to a set of code of conduct. A further set of regulations was enacted and enforced since 2001, viz., Advertisements and Disclosure, Third Party Administrators (TPAs), etc. Finally, we have the regulations on Protection of Policyholders Interests. This regulation needed well defined and informative materials regarding the future prospect of the insurance products at the time of sale, claims procedure, proper functioning of policyholders services and so on (USAID, 2008).

Concluding Observations

We have made some progress in the right direction, though we have still a long way to go. The insignificant effect of Work Force Participation Rate (WPR) on Private Health Insurance (PHI) clearly reflects the presence of a large informal sector which is a common feature of the developing country. Hence steps may be taken to popularize the concept of "group insurance" in developing countries, which is widely practiced in developed countries so as to avoid the problem of adverse selection.

Further to widen the reach of PHI especially for the relatively vulnerable groups of poorer regions, various institutions like SHGs involved in micro finance schemes should also provide health insurance facility. Here groups are formed following the principle of "assortative matching" whereby birds of same feather flock together. As all group members are held responsible for default on part of any single member so, motivated by their self-interest each one will monitor others action. Such internalization of monitoring would tackle the problem of moral hazard. In addition, the elected local bodies (such as Gram Panchayats, Panchayat Samitis or Zilla Parishads (in case of India) may act as coordinator and motivator on the behalf of a large number of SHGs in any particular region. As medical treatment is becoming very expensive in the new regime of Intellectual Property

Appendix

Table A.1 : Characteristics of Indicators over Country- groups

Country-groups	Measure	Variables							
		PHI	PD	URB	WPR	PCY	PHE	DOC	BED
LIC	Mean	13.85	181.58	24.58	41.16	340.53	3.22	15.92	98.46
	S.D.	14.81	260.86	12.51	10.39	162.36	0.94	17.02	73.81
	C.V.	106.90	143.66	50.89	25.24	47.68	29.16	106.89	74.96
MIC	Mean	22.49	98.28	67.82	43.89	3182.62	2.42	136.43	312.14
	S.D.	15.36	86.84	28.64	9.66	2189.52	0.96	91.03	239.27
	C.V.	68.31	88.36	42.23	22.01	68.80	39.69	66.72	76.65
HIC	Mean	37.19	123.36	75.22	49.38	22808.71	2.68	282.00	554.67
	S.D.	20.48	126.34	10.17	3.81	6610.10	1.53	67.55	197.26
	C.V.	55.07	102.42	13.52	7.72	28.98	57.09	23.95	35.56

Source: Calculated from Table 3

Table A.2: Relative Position of Average Indicators over Country Groups

Country - group	Y	X1	X2	X3	X5	X6	X7	X8
LIC -average	18.84	45.03	14.67	30.62	1.29	38.74	3.67	10.20
MIC -average	30.58	24.37	40.46	32.65	12.09	29.10	31.41	32.34
HIC -average	50.57	30.59	44.87	36.73	86.62	32.21	64.92	57.46

Source: Table A.1

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Knowledge Sharing in Specialized Fields - Study of Innovative Approaches Among Dietetics Professionals in Corporate Healthcare System

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Abstract

The corporate healthcare is an industry where experience and tacit knowledge plays an important role in delivering quality service. The valuable knowledge of Dietitians, gained through years of experience in nutrition analysis is an essential component of high quality service. This research study aims to present the Knowledge Sharing (KS) practices in the Dietetics Department of a leading healthcare organization in India to create and sustain reliable and critical services. In particular, the article assesses how Dietitians acquire and share the knowledge among them. KS among Dietitians is driven by two approaches, namely innovative Internship programme and Inter-Disciplinary Team Rounds (IDTR). These approaches focus on interaction, collaboration and increased sharing of knowledge, which led to successful knowledge-driven practices. Our study shows that a clear linkage of KM efforts with the business objectives, top management support and adoption of suitable governance help in achieving effective knowledge sharing in specialized fields such as healthcare. We conclude the paper with few guidelines to practitioners.

Keywords

Knowledge sharing, Specialized field, Dietitians, Healthcare, India

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Introduction

Successful companies are those which constantly create new knowledge, disseminate it throughout the organization, and rapidly embed it in their new products and services (Nonaka, 1991). Knowledge is fast becoming a strategic resource and organizations practice knowledge management (KM) to effectively transform knowledge into competitive advantage (Desouza, 2003; Liao, 2003). The purpose of (KM) in organizations is to recognize knowledge as a valuable resource and to deploy approaches for tapping the collective intelligence and skills of employees in order to bolster organizational knowledge. KM is enabled by people, organization, process, and system perspectives. Knowledge sharing not only enhances an organization's ability to compete but also increase the competency level of its employees. More precisely, KM is concerned with capturing an organization's know-how and know-what through creation, collection, storage, distribution, and application (Miller, 1998).

The field of knowledge management has tremendous application and value addition to the health care industry, particularly for hospitals and hospital systems. For many who have invested in a knowledge management infrastructure, it has transformed their standing in the industry. Nutrition plays a vital role in the overall management of any disease. It takes a committed and understanding Physician-Dietitian-Nursing care team to see that the basic diet objectives are pursued. Dietitians provide Medical Nutrition Therapy that can minimize healthcare costs, by preventing and treating diseases with appropriate diet. They also provide consultation and appropriate nutrition therapy to clients identified with malnutrition. Dietitians are trained to translate the science of nutrition in health and disease into a customized set of choices of food items.

KM in healthcare needs people's contribution regularly to build content. It also has to ensure that knowledge is accessible when a practitioner requires it and finally converts knowledge into a business benefit. The role of a dietitian is to promote good health by teaching the public and other health care professionals about diet and nutrition. The way dietitians acquire required level of knowledge and expertise is unique in the corporate healthcare system. This research aims at studying the knowledge sharing mechanism among the dietetic professionals with reference to a large healthcare provider in India. It also elaborates on how the dietitians extend the knowledge to other health care professionals like doctors, nurses and para-medical professionals. We use case study approach to encapsulate the process and organizational dimensions of two unique approaches adopted by the organization to maximize the knowledge potential. The paper is organized into three sections, wherein the first section deals with literature review and the second details on the objectives and research methodology of the study and the final section presents the findings of the paper covering the process and organizational dimensions of KM, and conclude the paper with key lessons for theory and practice.

Literature Review

The purpose of knowledge management (KM) in organizations is to recognize knowledge as a valuable resource and to deploy an approach for tapping the collective intelligence and skills of employees in order to create a greater organizational knowledge. Knowledge Management (KM) is widely regarded as the way an organization can leverage the 'know-how' of trading partners, and outside experts for the benefit of the organization

(Wei, 1998; Bellaver and Lusa, 2001; Ackerman et al., 2003). KM is regarded as the essential tool for success in a highly competitive world of the global economy (Lytras et al., 2002; Ackerman et al., 2003). An organization managing knowledge well has the potential to create significant strategic value. Therefore knowledge management is the latest strategic option in increasing organizational competitiveness (Synman and Kruger 2004). Knowledge management (KM) has emerged as a strategic imperative to improve organizational competitiveness. Aligning KM initiatives with business strategy through appropriate KM strategy is a vital beginning for the successful exploitation of knowledge for business success.

The twenty first century healthcare industry has seen a paradigm shift that replaced traditional process of care-one clinician looking after one patient with modern science-based medicine in which the patient is managed by multidisciplinary team of health care professionals (Ackerman et al., 2003), such as oncologists and cardiologists working with general practitioners and home-care nurses. The effectiveness of such shared care critically depends on the ability to share patient specific information and medical knowledge easily among professional (Johnston et al., 1994; Anderson and Ayding, 1997). Indeed it is widely recognized that the lack of sharing knowledge among professional and organizations represents one of the major impediments to quality care. Therefore, KM is increasingly pervasive in healthcare organization and KM strategy continuously defines their organizational characteristics. The more a healthcare provider requires sharing knowledge and good practices, the more it seemed a KM strategy would be required (Guah, 2004). It is a long-term, sustainable commitment to changing the culture of health care to become more collaborative, more transparent, and more proactive. A well implemented KM will transform the health care service into a more cost-effective, infallible and accountable. For many who have invested in knowledge management systems, it has become the measure of value of belonging to a hospital system.

The health care industry is increasingly becoming a knowledge-based community that is connected to hospitals, clinics, pharmacies, and customers for sharing knowledge, reducing administrative costs and improving the quality of care. Thus, the success of health care depends critically on the collection, analysis and seamless exchange of clinical, billing, and utilization information or knowledge within and across organizational boundaries. KM can be distinguished from information management in that is actionable and should result in changed behavior as a result of knowledge sharing.

Knowledge transfer should spark innovation, operational process improvement, and enhanced patient care. According to Healthcare Information & Management Systems Society (HIMSS), KM in health care is about aligning people, processes, data and technologies to optimize information, collaboration, expertise, and experience in order to drive organizational performance and growth.

Knowledge Management (KM) in healthcare can be regarded as the confluence of formal methodologies and techniques to facilitate the creation, identification, acquisition, development, preservation, dissemination and finally the utilization of the various facets of a healthcare enterprise's knowledge assets (Pardes et al., 1999). However, very little research is carried out in the specific domains within the healthcare systems.

Since workers in the healthcare sector use knowledge from multiple sources, there is a glaring need for knowledge management (KM) in the health management (Sharma et al., 2005; Wahle and Groothuis, 2005). In the sector there are different actors, such as patients and their families, physician, surgeons, epidemiologist, nurses, medical students, laboratory technologists, physiotherapists, researchers, educators, policy makers and administrators. The healthcare workers have acquired specialized unique knowledge and this knowledge has to be shared by the different actors to improve patient care. Moreover, the interaction between the actors also creates knowledge. Sharing of knowledge between the different actors in healthcare has been identified as being critical factor for creating a high quality healthcare system (Richardson et al., 2001). Wahle et al. (2005) emphasize that management of knowledge in health sector is essential as it can optimize the support and primary health processes, improve efficiencies and effectiveness, and improve the learning capacity of the organization.

The health care industry has evolved into an extended enterprise-an enterprise that is powered by sophisticated knowledge and information resources. In today's healthcare enterprises, knowledge is deemed as a 'high value form of information' which is central to the enterprise's 'capacity to act' (Sveiby, 1997; Davenport et al., 1998). The field of knowledge management provides the methodological and technological framework to: (a) pro-actively capture both the experiential knowledge intrinsic to what are we doing vis-à-vis healthcare practice and delivery, and the empirical knowledge derived from the outcomes of what have we done; and (b) operationalize healthcare knowledge to serve as a strategic decision-making resource, vis-à-vis an ensemble of business rules, trend predicting insights, workflow analysis, analytic outcomes, procedural guidelines and so on (Abidi and Cheah, 2000). Shin (2004) presents a framework for analyzing the barriers and cultivators of knowledge sharing using transaction cost theory, agency theory and resource based theory. This concept of internal transaction costs will be used to analyze the different knowledge sharing events that already exist in the healthcare domain. Our review of previous research shows that not much has been researched on KS in specialized fields, especially healthcare industry.

Research Questions and Methodology

Our research aims to investigate key approaches adopted for knowledge sharing in specialized group such as dietetic professionals in Apollo Hospitals, which is one of the Asia's largest healthcare providers. This general aim leads to the following specific research questions: (1) What are the key approaches adopted for effective KS and (2) What are the factors that determine the effectiveness of KS. This is an area which has not been widely researched we found case research as the most suitable one for our exploratory study (Yin, 2003). Practitioners also welcome such qualitative case-oriented research as it is more useful to communicate the practical usefulness of the research (Benbasat and Zmud, 1999). We used a single case site and collected all relevant information with respect to the two unique approaches adopted by the organization. The organization that was chosen for the case study had been involved in promoting knowledge sharing and had formal process for KS. Semi-structured interviews were conducted with the Department head and heads of the interfacing business functions, and key stakeholders on various aspects relating to effective KS. Wherever available, data obtained through 'key informants' were supplemented with archival data such as KM strategic plans, and related documentations. Use of multiple-informants and use of archival data helped us crosscheck pertinent information and verify the reliability of data obtained. The data collected from the organization is analyzed and presented in the following section.

The Case Analysis

Corporate Healthcare System and the Organization

India's rapid growth has brought significant changes in people's lifestyle in many facets. Some of the factors that led to people demanding quality healthcare are increasing income levels, fast track lifestyle and stressful work environments. Healthcare, which is a US$ 35 billion industry in India currently, is expected to reach over US$ 75 billion by 2012 (India Healthcare Trends, 2008). The healthcare industry in India is perfectly poised to emerge as a global hub due to the distinct advantages it enjoys in clinical excellence and cost effectiveness. The industry, which was once the exclusive domain of the government, has seen a steady participation of major corporate houses setting up premium hospitals and medical facilities across the country. Private participation in healthcare sector is inevitable owing to large investments required to extend and establish hospitals across a vast country like India. The healthcare sector offers immense potential to its players as the country is witnessing a rise in lifestyle-related and other diseases. The ageing population supported by rising income levels also drives for better facilities in the country.

The industry, which was once the exclusive domain of the government, has seen a steady participation of major corporate houses which have helped in setting up of premium hospitals and medical facilities across the country. The healthcare sector in India has been attracting huge investments from domestic players as well as financial investors and private equity (PE) firms. Funds such as ICICI Ventures, IFC, Ashmore and Apax Partners have increased their investments by many folds in the recent past. The sector's perceived 'recession-proof' nature, the demand-supply gap and the possibility of attractive financial returns makes it attractive for PE investors. The economic slowdown does not seem to have had a major impact on corporate hospitals, which continue to remain upbeat about their performance. Many hospital majors have planned major growth strategies and expect good outcomes this fiscal.

As a major business strategy, most of the hospitals in India have turned towards a new concept called 'medical tourism' to provide cost-effective service combined with opportunities of tourism. The cost differential is huge which is only a tenth and sometimes even a sixteenth of the cost in the West. While clinical trials cost approximately US$ 300 million to US$ 350 million in US, they cost only about US$ 25 million in India. However, the Indian healthcare success is not about cost advantage only but also a high success rate and a growing credibility. The quality of service is one of the best in the world as India has the 2nd highest number of qualified doctors in the world. For example, the success rate of cardiac bypass surgeries in India is higher than the US. Wellness tourism, comprising spa, Yoga and Ayurveda, have a very bright future in India as foreigners are increasingly flocking to India to seek physical and mental healing.

Apollo Hospitals is Asia's largest healthcare conglomerate that has touched more than

20 million lives in its remarkable 25 years of service to mankind. Pioneering the concept of professionally-run corporate hospitals in the country, Apollo Hospitals has grown from a 150-bed hospital at Chennai, India, to over 10,000 beds across 44 hospitals around India and overseas. The group has trail blazed an integrated healthcare system, with specialized services that address the entire range of the medical spectrum. Apollo's growth, in fact, has been synonymous with India emerging as a major hub in global healthcare. Pharmacies, preventive healthcare, clinics, consulting TPA, education, research, telemedicine - the many initiatives synergize Apollo's superior healthcare expertise with the best of modern technology.

Apollo's vision for the next phase of development is to 'Touch a Billion Lives'. Path-breaking projects have been initiated for the purpose. Apollo Reach Hospitals will take international health care to semi urban and rural India. Apollo's Knowledge Health City will redefine the way skills enhancement, medical education and research is crafted and delivered. Apollo Heath HiWay aims to revolutionize national healthcare delivery using an e-information superstructure that gives doctors across the length and breadth of the country, incredible knowledge and systems support. Today, Apollo Hospitals is regarded not just as the country's premier healthcare provider, but the driving force behind India becoming a global healthcare destination According to the Chairman of Apollo Hospitals, the group will be setting up 20 super-specialty hospitals in smaller towns with an investment of more about US$ 206.27 million 2011.

The Critical Role of Dietetic Professionals

Nutrition plays a vital role in the overall management of any disease. It takes a committed and understanding Physician-Dietitian-Nursing care team to see that the basic diet objectives are pursued. Dietitians provide Medical Nutrition Therapy that can minimize health care costs, by preventing, fore stalling and treating diseases and their complications. They also provide consultation and appropriate Nutrition therapy to clients identified with existing malnutrition.

Dietitians are expected to maintain their competence and expertise through both continuing education and active involvement in a range of professional activities. They also work in close co-ordination with the Food services department starting from menu planning to the feedback on the delivered diet. Dietitian's job description includes the following:

Nutritional support: This means feeding patients who are unable to feed themselves. Examples of this type of patient include patients who had a stroke, or a patient who is very weak following an operation at the hospital. If we ensure a patient is fed properly, it can improve recovery rates, reduce the chance of further difficulties and reduce the time the patient needs to stay in hospital. Plan and implement patient diet therapy, educating and counseling patients and their families on specific problems prior to their discharge from the hospital and also to the out-patients who require the same.

Therapeutic diets: Patients receiving medical or surgical help will also benefit from special diets. Eating more of certain foods, and/or avoiding certain things can help to control a patient's symptoms. In some cases, by carefully monitoring what a sick patient eats and drinks, the dietitian can reduce the risk of long-term problems and can establish and/or help maintain the patient's quality of life. Dietitians educate the patient and the family about drug nutrient interaction and ensure maintenance of a good nutritional status of the patients and correct the deficiencies, if any.

Education: Dietitians educate the patients about the various diet prescriptions. Dietitians impart knowledge to nurses, medical and paramedical staff on the principles of nutrition and diet therapy.

The Dietetic department is split into specialist teams, in order to promote clinical development and attain highest quality clinical standards:

- Renal - Involved in conservative management of kidney disease.
- Pediatrics - To manage diabetic, weight management and metabolic disorders among children
- Gastro-enterology / Hepatology
- Nutritional Support in critically ill patients
- Cardiology - To manage cardiac patients
- Diabetes - To manage patients from diabetes and endocrinology

Knowledge sharing among dietitians is critical as it helps in disease management and better Patient care. Unless Health Care professionals interact and share their knowledge, health care delivery system will not be successful. Dietitians work as members of a multidisciplinary team to look after patients. They visit patients who are receiving hospital care to check on their health and ensure that their diet requirements are met. They can also be involved in treating the disease by appropriate diet, for example people who have diabetes or coeliac disease. Knowledge gained by Dietetic professionals, if disseminated widely, becomes is a valuable insight to common man. Knowledge contributes to the policies, activities, and performance of health systems, and to the improvement of individuals' health.

Acquisition of Core Knowledge Through Innovative Internship Programme
The newly recruited employees have to undergo the internship training programme. To get enrolled in the Internship programme the candidate must be post-graduate in Nutrition and Food Science. Short-listed candidates undergo a selection process which includes interview and also a written test. Criterion for applicant selection includes qualification, communication skills, insight and interest in therapeutic diets. Applicants should possess initiative, compassion and good inter personal skills. The mentioned skills are assessed during the interview and written test. The candidates short-listed for the Internship programme undergo six months internship programme.

The Dietetic internship programme at the Department of Dietetics is designed to enhance learning by providing opportunities and apply theory into real-life situations. The programme emphasizes the development of critical thinking and creative problem solving skills. The goals of the programme are to enable the young dietetic intern to:

- Acquire knowledge and skills in nutrition, management, communication, needed to meet the core requirements to practice as a dietitian;

- Apply knowledge to practical opportunities in a variety of settings;
- Develop self-confidence and expertise in the performance of professional responsibilities;
- Promote continuing and on-going professional development through knowledge acquisition.

A dietetic Intern is asked to go for rounds to meet patients along with a Senior Dietitian. The Intern observes how the Senior Dietitian handles a case and decides on planning a diet for a patient. The Senior Dietitian teaches the Interns about diet planning with practical examples. Further the Intern is asked to plan the diet and the Senior Dietitian guides her in correcting it.

The internship programme is unique since it is structured and detailed when compared to other hospitals. Moreover Apollo Hospitals being a multi specialty hospital the rare medical cases attended by the Dietitians improve the learning process. According to the chief dietitian, the critical context of the knowledge sharing involves detailing the condition of the patient in case of specific needs. "Knowledge sharing between the Dietitian and Doctors about the recent development in field of medicine with respect to nutrition is also vital" said a senior physician.The successful internship and the knowledge gained through it has made the department an integral part of the high quality service provisioning. "That they have learnt to deal with patients from different strata and with different mood swings. We are happy for being recognized as a part of medical care team based on the importance knowledge-based service" said a senior dietitians.

According to a General Surgeon, the knowledge sharing between the surgeons and dietitians will improve the patient's health condition especially during the postoperative period and the same is critical in health care services. Such a high-level knowledge sharing happens through a well established communication approach and a culture that enables sharing of knowledge and eventually delivers quality service. Table-1 illustrates the objectives and the specific knowledge areas addressed through the internship programme. On successful completion of the programme, an assessment report and a certificate is issued to the employees. This certification also enables the employees to become a registered dietitian in India and therefore provides an opportunity for mobility in career.

The special features of the program are its gradual promotion of the internee from an observant to participant by the end of the course. The initial learning of the internee apart from theoretical concepts occurs by their observation of the seniors and experts in the field during their patient visit. This is later followed by sessions which focus on sharing the experiences of the visit with the peers and senior professionals as well as conducting daily and weekly meetings emphasizing and nurturing the culture of knowledge sharing within the groups and the seniors. The practice of knowledge sharing is inculcated in the internees from the initial stage itself to suit the organization's culture. The high level of tutelage from the senior professionals, reporting mechanism and knowledge sharing culture had made the internship program and its result as the best in the industry.

Table 1: Knowledge Domain and Tactical Approach

Knowledge domains	Objectives	Tactical approaches undertaken
Basics of Dietary	Knowledge of department functioning & and the diet service to patients	Ø General orientation Ø Visiting various areas of the department Ø Getting familiarized with records maintained in the department. Ø Observing the food -setting Ø Observing the patient food service
Liquid Section	Knowledge of nutrition formulary	Ø Observation of inhouse formula preparation Ø Observation of feeding techniques Ø Learn nutritive values of various tube feed formulas
Understanding Patient	Knowledge of interacting with patients, plan therapeutic diets	Ø Learn to interact with patient by accompanying dietitian on rounds to visit the patients. Ø Learn to plan therapeutic diets for individual patients
Diet counseling	Knowledge of counseling patients about therapeutic diets	Ø Learn to take down diet history of patients Ø Learn to calculate & plan diets according to nutritive needs of patient Ø Learn the art of counseling patients on the therapeutic restrictions.
Chosen fields such as Cardiology, Gastroenterology, Nephrology	Knowledge of diet management for specific disorders, pre and post operative considerations, and diet counseling for healthy life	Ø Interaction with specialist doctors and staff in the field Ø Observe the Diet Counseling classes held for patients and their attendants. Ø Ac quiring knowledge of commercial formulas available Ø Subjective Global Assessment techniques & plan nutrition care as needed
Diet during critical care	Knowledge of nutrition Support for critically ill patients	Ø Learn nutritional planning for critically ill patients. Ø Acquire knowledge about total parenteral nutrition. Ø Learn to calculate tube feed formulas according to patient's nutrient needs. Ø Learn to monitor biochemical parameters and change nutrition care accordingly. Ø Interact with physician and nurse to provide competent health care support.

Sharing Advanced Knowledge Through Inter-Disciplinary Team Rounds (IDTR)

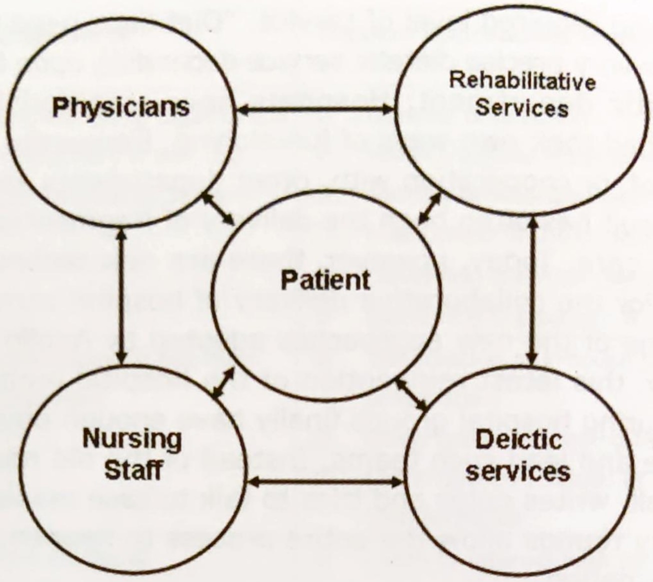
The internship programme gives the comprehensive core knowledge and skills and forms the basis for achieving required level of service. "Dietitians need to posses the advanced knowledge to deliver very precise dietetic service depending upon the clinical complexities" said Head of dietetic department. Hospitals have traditionally been places where professionals have had their own ways of functioning, frequently in isolation and without the understanding of, or cooperation with, other departments and without the presence of the team. The result has often been the delivery of fragmented, inefficient, costly and potentially harmful care. Today, however, there are new technologies, new tools, and new opportunities for the collaborative delivery of hospital care. Interdisciplinary care team rounds are one of the new approaches adopted by Apollo hospitals. But perhaps just as importantly, this latest reinvention of the hospital medicine model is possible because many maturing hospital groups finally have enough physicians available during the day to organize and lead such teams. Instead of the old rounding paradigm where the doctor does it all, writes notes and tries to talk to case managers and nurses on the fly, multidisciplinary rounds allow the entire process to happen at one time by pooling schedules and information.

The scope encompasses education related to the health needs of all the patients at Apollo Hospitals. The purpose of IDTR is to assess patients and family's learning needs and to educate them, hence help them to participate in their care process and make informed care decisions, primarily involving deictic components. IDTR is also model of care management is to build a caring community between the patient, family and palliative care team. This team approach is able to meet the physical, psychosocial, spiritual and bereavement needs of patient and families because these needs are inseparable. This approach is different than the traditional multidisciplinary approach where a member representing each discipline visits the patient and formulates goals depending on his/her own area of expertise. Patient and family's goals are not always considered in a holistic nature when this approach is applied. The ITDR improves upon the multidisciplinary approach by:

1. Involving the patient and family in the decision making process
2. Determining the patient and family's values that direct care plan goals
3. Allowing collaboration of expertise by varied disciplines
4. Identifying appropriate interventions that take into account the holistic nature of care
5. Blending of expertise among disciplines

The IDTR happens in patient care units where each specialty team member (Doctor, Nurse and Dietitian) share their input and finalize patient care plan. For example a patient who had undergone a major GI surgery was getting TPN through peripheral line where not enough calories of protein could be provided and the line was there for more than five days that could lead to infection. Patient was also started on clear Naso jejunal feeds which do not provide any protein and provides only a few calories. "Interaction among the Doctors, Nurses and Dietitians happens in following a structured protocol for diet planning, in calculating the nutritional aspects of the Ryles Tube feeding formulas, in planning appropriate parental nutrition and education on the drug nutrient interaction", said one Dietitian at the Hospital. The interaction among the professionals and patient is presented in figure 1.

Figure 1: Interaction among Professionals and Patients



Inter Disciplinary Team Rounds (ITDR) enable all members of the team caring for critically ill patients to come together and offer expertise in patient care. Often physicians alone care for patients without the input of other providers such as nursing, pharmacy, respiratory therapy, dietitian, physical therapy, occupational therapy, and doctors. Even the most efficient physicians stand to benefit from the counsel of these providers to provide the best care for critically ill individuals. This intervention has proven successful in medical and surgical settings. Efficient patient care depends on close communication between the physicians, nursing, physical therapy, and discharge planners. Many times, the number of services involved and the workload of each service slows down communication in patient care. In trauma care, multidisciplinary rounds have been demonstrated to have a dramatic effect on patient flow. The IDTR has been recognized by Joint Commission International Accredited (JCIA) Hospitals as one of the best practices followed in Apollo Hospitals. The factors that contribute towards the success of IDTR are team work, commitment from the management and the initiative from the IDR Team members. The factors are critical and keep the process continuous and make them happen religiously. More team discussions happen if required after the IDTR.

Patient assessment shall include identification of literacy levels, learning abilities, readiness to learn, financial implications of care choices, cultural and religious practices, emotional barriers, motivation to learn, physical and/or cognitive limitations and language barriers. Assessment findings shall be recorded in the patient's record in the interdisciplinary team rounds form for In-Patients and for Out-patients it will be recorded in the Initial Patient record.

Once educational levels are assessed, the health professionals caring for the patient shall collaborate in providing education to help them give informed consent, participate in care process, and understand any financial implications of care choices. Some or more of the following departments participate in the IDTR: Physicians, Nursing Services, Laboratory Services, Dietitian Services, Rehabilitative Services, Guest Relations Services, and

Pharmacy Services. Patient and family education shall be provided by qualified personnel and include topics as appropriate to patient's care like potential interactions between medicines and food, nutritional guidance and rehabilitation techniques. Education shall include information to meet patient's ongoing health needs like discharge instructions, future appointments and community resources that support health promotion and disease prevention. IDTR has proved to be an effective approach for sharing advanced knowledge among the deictic professionals as well as with related professionals of healthcare delivery.

Discussion

Dietitians are uniquely qualified to translate scientific information about food into practical dietary advice. As well as providing impartial advice about nutrition and health, Dietitians also advise about food related problems and treat disease and ill health. While KS is important in the healthcare industry, the Dietitians who are key part of the health care team provide their expertise in the treatment. The present paper provides useful insights on knowledge sharing among Dietetics professionals. Dietitian work demands high level of skill and expertise and unless the team share knowledge effective outcome is not possible.

Our analysis shows that how knowledge sharing among deictic professionals in the corporate healthcare system and the enabling benefits of two unique approaches adopted by Apollo hospitals. Apollo hospital strongly believed that diet plays a central role in facilitating treatment and in some cases complete cure of the disease can be done with the help of appropriate diet, therefore the Nutrition and Dietetics department doesn't operate as a standalone system but it is well integrated and aligned with the business objectives. Thus the department enjoys the status of being a core activity rather than a support activity for treatment as in the case of other hospitals. All the departments of the hospital are well organized and interconnected to facilitate the process of a structured approach for the treatment and quality service which includes scheduling, sequencing and interfacing other departments (patients and professionals). This realization and alignment is a result of the senior management's support which in turn has led to the establishment of a well-formulated and structured internship programs to produce the required manpower in-house who will cater to the specific needs of the hospital.

Governance is one of the determinants of the successful knowledge sharing in Apollo hospitals. Both initiatives have been structured and integrated with service delivery frameworks with clear leadership roles and responsibilities. The IDTRs were deployed systematically through scheduling, documentation and follow-up meetings. The governance was also in place to transfer the best practices to other hospitals of the group. The Group Chief Dietitian of Apollo Hospitals is based at the Corporate and Dietitians of other Apollo Hospitals report to the Group Chief Dietitian. Group Chief Dietitian is responsible for transferring and institutionalizing the knowledge sharing and best practices sharing initiative. Some of these areas include Apollo Hospital Diet Manual (in the lines of American Dietetic Association Manual), Critical Care Nutrition, Dietitian Competence Evaluation Test, Dietetic Internship Programme, Uniform Diet Charts, Organize Apollo Hospitals Dietetic Department updates and involve the key Dietitians of the Group Hospitals.

Conclusion

In this exploratory case study, we have attempted to capture the various dimensions process of Knowledge sharing. The paper will be of great value to KM practitioners and Dietitians who want to promote knowledge sharing approaches. However additional research may be undertaken to validate the approach based on experiences of other corporate hospitals in India and abroad. Research may also be directed to study and compare the approaches of healthcare with other specialized fields.

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Business Intelligence - A New Vision for HR

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Abstract
Now a days intense competition is leading to growing attrition. This is where HR can play an important role in 'Talent Management'. Rather than doing only administrative work and 'reactive' hiring or firing of employees, the HR professional needs to 'proactively' start solving people issues. IT executives will not be able to address this on their own. Like it or not, they will have to collaborate with the HR department in producing solutions to strategic 'people' issues facing the organization. With the advances in Business Intelligence (BI) tools, HR department can utilize all the data related to their existing employees to analyze their human capital and provide decisions around staffing and retention.

Key words
Business intelligence in HR, Talent management, New HR vision

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Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining.

Business intelligence applications can be:

- Mission-critical and integral to an enterprise's operations or occasional to meet a special requirement
- Enterprise-wide or local to one division, department, or project
- Centrally initiated or driven by user demand

Business Intelligence contributes to the business in the following way:

- BI moves customers to improve your market share. By identifying the messages that speak to customers' needs, wants and preferences, BI gives you the best chance of succeeding in a message-a-minute marketplace. We move your customers closer to your brand.

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▪ BI moves your sales channel so they can move the needle. The objectives are universal: increase sales and profits. BI tackles these challenges using creative ideas, powerful technology, proven methodology and market adeptness to help you deliver results.

▪ BI moves people to create a competitive advantage. Your employees are at their workstations, with your customers, in the field or factory and at job sites worldwide. Are they focused on what's important to achieve your vision? BI helps translate that vision into action.

Business intelligence can also help HR Department to mine out information regarding:

- Motivation of individuals and departments within organizations.
- Incentives and benefits reward smart contribution.
- To encourage innovation from individuals and departments.
- The individuals work their best in collaborative environment.
- The best technique to train employees.
- To incorporate feedback from individuals.
- Employees leaving the company and where do they go.
- The individual employees think of work environment.

Currently HR is not empowered to answer these questions in a systematic way. With the BI tools, the HR can tailor the benefits and incentives to custom fit every employee. The era of providing generic benefits is over. 'Mass Customization' of benefits to suite individual employee is where the future is. BI tools will help HR get there. This will be very critical to be competitive in attracting and retaining talent.

To retain key talent - and even theit own jobs - HR needs to dramatically change the way it works. Rather than be a provider of answers, the HR professional will need to proactively produce solutions to strategic business issues facing the organization.

Most HR Departments Not Prepared

Most HR departments aren't prepared for the new reality. A recent poll by the International Public Management Association for Human Resources found that only one-third of its members had a formal workplace planning process in place. And a recent Conference Board survey of more than 100 HR executives found that only 12 percent make use of people measures to meet their strategic performance targets.

But the tides are turning. Over the next three years, 84 percent of the executives polled expect to increase the application of workforce measures.

A New Vision for HR

This shift will require HR professionals to learn a number of new skills. First among them, writes Lesser, is a strong analytic orientation that starts with hypothesis development and ends with the ability to use data to influence stakeholders and more importantly, generate action. This includes accessing data from data warehouses and other information sources, structuring analyses to identify gaps and opportunities, and communicating the results in a way that is convincing to others.

The Time is Right for Business Intelligence in HR

Luckily for HR, these are precisely the capabilities enabled by Business Intelligence (BI). And it's why more and more departments are relying on it to analyze human capital and provide strategic guidance to the executive office.

Business intelligence can help HR departments become a strategic asset within their respective organizations in two ways: by generating efficiencies within the department itself; and by using the insight that BI delivers to help their organizations make strategic decisions around staffing, planning, and budgeting to support key goals.

Business intelligence can help HR provide answers to the questions that have a direct bearing on their organization's strategy. For example:

- Do our recruitment programs attract our future managers?
- Which employees are ready for management positions?
- What will our staffing needs be five years down the road?
- Who are the most productive employees across the company?
- Which employees are at risk of leaving? What can we do to keep them?
- Do we have the right skills mix to achieve our goals? Where are the gaps?

With answers to these questions, HR can identify trends in their workforce that lead to a better understanding of how to maximize human capital. Positive trends can be leveraged for greater value; negative trends can serve as an early warning system to spur corrective action before problems become acute.

"Hiring, retaining, and deploying employees with the right skill sets can be challenging and has strategic implications to firms across industries, says Brian McDonough, research manager at IDC. "With workforce analytics software, the decisions that determine the composition of the workforce can be done with greater insight and accuracy than ever before."

How Business Intelligence Supports Strategic HR Decision-Making

- Provides accurate, meaningful and actionable information
- Introduces modeling capabilities based on real data to make projections about the changing dynamics of a company's workforce in advance of, during and after policy, regulatory and other changes
- Delivers the methodologies, tools and analyses to understand the business impact of workplace trends, decisions and policies
- Identifies and links performance drivers and critical workforce trends that better inform the strategy for end-to-end business solutions
- Gain Daily Business Intelligence: Leverage predefined KPIs to set management goals. Consolidate all key information on a single homepage, with one-click access to automated out-of-tolerance notifications, KPIs, reports and more.
- Manage Workforce Development and Learning: Analyze competence gaps by person and job. Analyze skills gaps for groups and individuals. Manage training attendance, resource use, costs and success rates.

- Optimize Compensation: Analyze salary trends. Compare average salaries by group. Look at salary distributions and skews by grade, performance, and service test. Evaluate benefits plans for maximum value.
- Manage Recruitment: Analyze time and costs by recruitment method. Review recruitment success rates. Analyze applicant statistics and dropout reasons.
- Analyze Workforce Composition: Understand workforce trends by job, geography, user-defined categories, minority groups, and business areas.
- Manage Utilization and Productivity: Analyze planned and unplanned hours by cost band over time. Analyze absenteeism by reason over time.

The following figure is an example how BI (tool) helps HR Managers.

Business Intelligence (BI) Software Tools

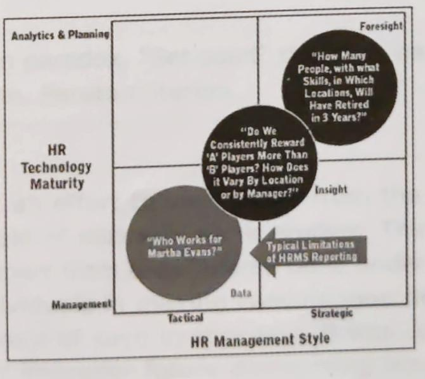
There are a number of BI Tools which will aid the HR managers to take decisions-like IBM Cognos, SPSS Clementine, Informatica etc. With BI tool, HR department can utilize all the data related to their existing employees to analyze their human capital and provide decisions around staffing and retention.

With the BI tools, the HR can tailor the benefits and incentives. The era of providing generic benefits is over. BI tools help get 'Mass Customization' of benefits to suit individual employee. This will be very critical to be competitive in attracting and retaining talent.

Popular Business Intelligence Software Vendors

Accela Communications, Apriso Corporation, Bitpipe, BlackBerry, Cognos, an IBM Company, Data Domain, Dell, Inc., Double-Take Software, Exact Software, GoldenGate Software, Inc., Hewlett Packard Company and Intel, Information Builders, Kofax, Inc.

Figure 1: How B1 helps HR Manager



Conclusion

It's not enough for HR to simply manage administrative issues. Rather, value will lie in using a fact-based analytic approach to solve business problems and providing a longer-term viewpoint about how the organization should adjust to environmental changes. It's a tremendous opportunity for HR to earn a seat at the table and a tremendous opportunity for HR to earn a seat at the table, and a tremendous opportunity for business intelligence.

Hiring, retaining, and deploying employees with the right skill sets can be challenging and has strategic implications to firms across industries. With Business Intelligence Reporting and Analytics software, the decisions that determine the composition of the workforce can be done with greater insight and accuracy than ever before.

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Economics of Happiness - Some Insights

Asis Kumar Pain

Abstract

The subject of happiness despite being the subject of discussion of the psychologists for a long time was examined from an economic standpoint to clear out certain grey areas whose roots are believed to be better unearthed through economic analyses. Treading this line of thought, economic analysis of happiness tried at assessment of welfare by utilizing the techniques typically used by economists with those that were commonly used by psychologists. Amongst the first to use economics in understanding happiness is Richard Easterlin during the early 1970s. Thereafter, upon a brief thaw, interest in the subject got rejuvenated in the late 1990s. The basic theme of the economics of happiness centred upon supplementation rather than replacement of income-based measures of welfare with broader measures of well-being. However, in that study the presence of a paradox, termed the "Easterlin Paradox" held the centre-stage. It brought forth the popular finding that wealthier people within countries are happier than poor ones though the notion does not hold across countries and over time. Besides, it is through understanding of the economics of happiness, the gaps existing between standard measures of poverty and inequality as well as reported assessments of welfare in countries in the process of integrating into the global economy is given a look. The present effort maps these aspects that form the basic outline of "happiness economics" to make the readers align their mindset with the mainstream economic theory.

Keywords

Human Satisfaction, Easterlin paradox, "Set point" theory of happiness, Income and non-income factors, Marketization, Pareto criterion.

Introduction

Since the last few decades, an effort to view utility from the perspective of happiness was given impetus in the field of microeconomic studies. The notion had its base from the experiences of real life apart from experiments done under strict conditions wherein, the rational behavior of individuals in making consumption decisions were found to be under stress. Tracking the root of such irrationality, it was concluded that asymmetry of information in real life or improper future discounting lead to such deviation.Apart from these, contextual influences (manifested in the comparison of individual income with others under similar category) led to substantial degree of skewed choice leading to different utility of outcomes. Thus, taking these aberrations into consideration, attention was focused on construction of relevant framework for inclusion of subjective factors

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within the ambit of subjective well-being that enable the individuals to reorient their choice towards a rational one. The essential ingredient for such an analysis is to understand as well as to devise appropriate framework for measuring happiness. The following sections are an effort towards that objective as well as to acquaint the readers with the research advances in that field.

Measuring Happiness: Understanding the Domain

Human satisfaction is a complex outcome, the riddle of which was analyzed for decades by psychologists. Based upon their findings, the general conclusion reached upon is individualistic viewing of life that might be, from an overall perspective or from a specific aspect. At the same time, psychologists believed that a concept like subjective well-being needs to be analyzed on a phase-basis by taking into account the reaction of the people. Thus, in the assessment of the subjective well-being, the importances of surveys (through questionnaire methods) become paramount. Through single and multi-questionnaire methods, the extent of happiness, as perceived by a typical individual is assessed. However, the entire effort of measuring happiness was confined within the domain of psychologists. Not long ago, the economists tried to make dent into assessing happiness. Regarding their "so far" aversion, the problem of non-sampling bias had been found to be instrumental in dealing with the assessment. Besides, such factors as the natural human tendency of overstating their happiness levels towards maintaining their self-esteem in front of the investigator and improper self-assessment of happiness of a typical individual happening due to variation in their mood or on account of the weather condition were against the basic notions of economic analysis. Thus when economics made inroads into the happiness analysis, their objective was focused on such actual aspects of human activities like their participation rate in the labour force, consumption activities as well as their savings. Analyzing this information, economists make their choices towards optimizing their utility. However, still there remains some ambiguity with respect of measuring utility by observable choices. To tide over the deficiency, the concept of bounded rationality was introduced. The concept allows consumers to make choices under constraint of information by following heuristic rules and such preferences might not tally completely with the observed behaviour. The central point that is thus gathered from the aforesaid discussion is that, solely on the basis of observations; it is difficult to assign the level of utility accruing to a typical commodity as was being done by the psychologists. Rather, with the help of economic theory of choice, it becomes easier to understand the well-being of individuals.

The Economics of Happiness

A browse through the happiness literature from the economic perspective as revealed in the advanced economies showed a wide gap between the measures of well-being and income. Taking cue of the fact, Richard Easterlin during mid-seventies delved upon the ways, people usually expend their time across different countries and within different cultures. He found that almost everybody spend their time in a similar fashion mainly working towards meeting the needs of their family. Also, he came to the conclusion that on an intra country basis, wealthy people tend to be happier than the poor though the same notion does not hold well for inter-country happiness study or across time. Such an anomaly backed thereafter by numerous studies (for example, the one by Stefano Pettinato et al. concerning 17 South American nations) came to be known as "Easterlin Paradox". Revelation in "Easterlin Paradox" as well as other aspects of "happiness literature" opened up new avenues of approaches for assessing happiness though opening up challenges when it comes to their translation into policy recommendations. The fact can be validated from the fact that increase in wealth usually leads to substantial observable improvement in such socio-economic indicators as literacy rates, mortality rates, etc. causing increase in the extent of happiness, given the fact that appropriate policies are in place. However, from the perspective of "Easterlin Paradox", increase of wealth amongst countries lead to unhappiness of the people despite advancement made in literacy rate or health status. A possible explanation of the apparent anomaly can be that people's expectations rise in line with the advancement in education and health leading to reduction in their fixed well-being standard and so in their happiness. The "set point" theory of happiness in psychology is based on that dictum. It further confines the rise in happiness to certain external limit beyond which there remains almost no scope of raising it further. However, such a point is the extreme one within which adaptability plays a major role in determining the level of subjective well-being though objective conditions and its change also are of importance.

However, comparative aggregate surveys in countries across individuals taking into account the unobservable traits emanating across country over time showed that like the wealthy people being happy over the poorer ones, those with higher level of education or with employment and even married persons are happier than others. Again, people in a society with economic insecurity are found to be less happy. Thus, it can be opined non-income factors (job-security, good health, etc.) are pivotal ones for transforming people to happy ones. On the basis of cross-country analysis, by John Halliwell, it was recently observed that people in wealthy states are not necessarily happy, rather people in those countries which provide an effective social and effective institutions that in-turn provide requisite mutual trust and low level of corruption are. Again, it was revealed through cross-section analysis over time that after a minimum point in the per-capita income level, health and literacy standards are achieved; further increase does not lead to increase in well-being of the people. Besides, at a specific point of time, in individual countries, wealthier and healthier are happy than their counterparts. In 2004, from the General Social Survey of U.S. data, Blanchflower and Oswald opined that rise in relative income is directly proportional to happiness under fixed absolute income. Thus, from these discrete analyses, it can be said that welfare of individuals are highly correlated with distributional outcomes. Also, wellbeing matter relatively with the macroeconomic conditions as could be seen from the lower degree of happiness associated with higher inflation as well as unemployment rate in developed economies. Another research proved the same hypothesis for Latin American countries. However, in Russia, an aberration occurred from the usual norm as could be gauged from the fact that despite higher unemployment rate persisting in the economy, the happiness of the people was comparatively lower than other regions of the world. Delving further into the aberration, it was found that the inherent impediments of the Russian economy that led to its uneven transition to its marketization were considered prime behind such behaviour. Thus, on a more general footing, the existence of a relationship between developmental factors and subjective wellbeing factors comes to the light though; these in no way disregard the existence of the age-old income based measures of happiness. Such understanding enables the economists to explain better, the aforesaid paradoxes of differential adaptation level of societies with regard to inequalities besides, better understanding of social and political instability.

Evolution of Happiness Economics Research

The subject of happiness had long been the study of the psychologists although, measuring it by means of subjective well-being came under the domain of economists, not long ago. Earlier approach in that direction by Jeremy Benthem, thus, focused on individual well-being. Thereupon, with rising intricacies of the subject, the notion of well-being from an individual perspective became further focused upon. In that goal, economists tried to base their perception of happiness from the revealed preference of consumers regarding their consumption level, savings level and their participation rate in the labor market. The basis for such a stance was due to the biasness associated with surveyed results wherein consumers' preferences are mostly influenced by their moods as well as on the framing of the survey questions. However, in recent times, these rational stances had received some jolt on account of some assumptions. A prominent such assumption is regarding the hypothesis of bounded rationality wherein, individuals' accessibility to information and choices are practically found to follow heuristic rules than complicated optimization processes. Lately, with the evolution of behavioral economics, the ways of dealing with the qualitative aspects of well-being suffered substantial improvements and largely made-up the deficits of the psychologists. Behavioral economics uses questionnaire methods in ascertaining the perception of happiness of individuals. These questions deal with psychological, socio-demographic factors which obviously remain quite imprecise. Behavioral economists believed that from the answers received from these questions, they become better equipped to make comparisons amongst cohorts of people. The comparisons showed that there occurred consistency in the response pattern, both for intra and inter country surveys among individuals. Also, these emanating trends suggest that skewed behavior of individuals (that arises due to the personal idiosyncrasies) fail to sustain its tempo in an aggregative form. However, improvements in living conditions, reflected in plummeting level of infant mortality rate is said to be behind the "better off" state of the people by all standards.

Happiness and Welfare Economics

In economics, welfare analysis comprises of several forms though amongst them, a standardized as well as integrated approach could be segregated and is recognized as mainstream welfare economics. Thus, mainstream welfare economics encompasses such features as the welfare theorems, consumer surplus as well as producer surplus compensation principles, cost-benefit analysis, Pareto criterion besides social welfare functions. Hence, it is obvious that mainstream welfare economics is quite an abstract concept and so is its notion of utility. Further, in mainstream welfare economics, utility function is devoid of psychological meaning, since, it is assumed that choice behaviour is the only essential element. It is thus natural that happiness finds little scope of getting represented in it. However, recent research focusing on measuring welfare from the perspective of happiness provided a new dimension to the existing domain of welfare economics literature thus enriching it in its scope as well as enhancing its power of analysis. Recent researches showed that there exists different axiomatic and philosophic foundation that binds the mainstream welfare economic literature with the happiness literature. Analyzing these, it can be concluded that the concept of happiness can be treated within mainstream welfare economics as a separate entity with a specific set of assumptions, techniques and policy statements.

Economics of Happiness in Developing Countries

As specified above, happiness studies in economics, more so for developing countries are quite scanty in nature. The little that is focused upon seems to be on individual specific countries like Latin America and the former Soviet block. A salient common feature of these countries is their increasing level of integration with the global economy. For two countries Peru and Russia, research studies on happiness were conducted through estimation of the factors of income mobility so as to mimic the availability of opportunity for their population. In that objective, one's perception regarding past mobility as well as that of the future is estimated. In doing that, ensuring a connection with data on subjective well-being was made. This type of perception survey (as well as other socio-demographic survey) was conducted in these two countries for consecutive three years to determine the connection existing between policy reforms, (as a result of increased integration with the global economy) and with poverty, subjective well-being as well as income mobility. Though it is very difficult to understand the connection in its entirety, but the fact that globalization seriously affects poverty and inequality gets bared. Again, taking into account, this reality, the importance of not only income but also other non-income factors in the well-being of individuals in these countries gets established. As these factors have previously been established for developed countries too, hence, it was experimentally verified that factors affecting happiness in developing countries are in no way different from the developed ones.

Conclusions

From the above analysis, the importance of economics in delving deeper into the abstract realm of happiness is proved beyond doubt. Furthermore, since economic well-being and people's perception of happiness had a bearing on economic outcome, the need to understand happiness from an economic perspective assumes much significance. As specified above in economics, well-being is used as an analytical tool to better understand the relative as well as absolute differences in happiness across time besides across cohorts within countries. Thus, data on well-being needs to be more precise and accurate than they are at present available. It is through such precise data; proper accounting of unobservable personality trait apart from the direction of causality existing gets established. Also, the way happiness affects the work-efforts, consumption, savings and investment can provide more thrust to the subject.

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Interorganizational Project Management in XYZ Ltd - A Case Study

Satish Krishnan

Abstract
The case highlights the interorganizational project management in XYZ Ltd (a pseudonym). The researcher argues that the top management's commitment, appropriate package section, efficient implementation team, key users participation, predefined and well-managed communication protocol among the stakeholders would contribute to the success of ERP implementation without delays. The researcher also justifies that vendor mergers and alliances may result in less-integrated solutions and less-knowledgeable support staff. It is also noticed that either the support form vendor or the retention of key personals in the project plays a crucial role in ERP success.

Introduction

XYZ is a Singapore based organization with significant operations in Singapore and overseas. The Group provides a comprehensive portfolio of services that include voice and data services over fixed, wireless and Internet platforms. Its ability to support multi-national corporations (MNCs) on a cross-border basis is anchored by its extensive network of Global Offices (SGOs). Found in 37 cities in 19 countries and territories across Asia Pacific, Europe and the United States, the SGOs provide MNCs with a single point of contact. XYZ has total staff strength of more than 19,000 worldwide.

Pre-Implementation

The Need for an ERP System

The earlier system used at XYZ was an in-house PPMS system (Personnel and Payroll Management System), which was a mainframes system. The limitations of this system include high operating costs and centralized data entry system. The purpose of implementing the new system was to replace the existing mainframes in-house PPMS system to meet XYZ's existing and new requirements and also to align with year 2000 compliance requirement. Moreover, XYZ was required to implement some major business and policy changes, so they were seeking some new system instead of enhancing the mainframes system. They found that ERP system was more productive because of its decentralized data entry system and the embedded best business practices, which could help streamline XYZ's existing business processes.

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Project Background and Scope
The objective of the project was to design, supply, customize, deliver, install, test and commission a Personnel and Payroll Management System for XYZ by Jan 1999. The proposed new system would replace the current in-house PPMS system, meeting XYZ's current and future requirements. Specifically, the proposed Personnel and Payroll Management System was designed to provide services for the following operational requirements : (1) Payroll Administration in the area of salary administration, processing and bank service, earnings, deductions, commissions and statutory requirement; (2) Human Resource Management in the areas of management planning, recruitment, organization planning, personnel administration, career development, benefits, compensation, leave, history, training, staff experience system, staff suggestion scheme, quality control circle, security, and external file interface.

ERP Package Selection
After deciding to adopt ERP system, XYZ went ahead with the task of package evaluation and selection. An evaluation team was formed to evaluate the ERP packages available in the market. The personnel involved were mainly from XYZ user group and technical team, including HR benefits, employment division managers, key users, and IS team manager. The team mainly looked into two ERP systems, namely, SAP and PeopleSoft. They attended the presentations and demonstrations to evaluate which system met best with their business requirements. The users also visited the some of the vendor's previous implementation sites to collect user feedback in order to better evaluate the vendor. After several rounds of discussion with vendors, they preferred the PeopleSoft, because it was more suitable to XYZ business needs and was less expensive compared with others.

Therefore, the evaluation team recommended PeopleSoft HR package and gave their feedback to Steering Committee for final decision. After vetting the evolution report as well as considering the implementation cost, the management decided to adopt PeopleSoft.

Selection of Implementation Team and Project Organization
After selecting the package, the project was awarded to Singapore Solution Consultants (SSC, pseudonym), an International Organization for Standardization (ISO) 9001 and Capability Maturity Model Integration (CMMI) level 3 certified company, the main business of which was to design, supply, provide customization, deliver, install, test and commission a Personnel and Payroll Management System for XYZ.

In order to ensure smooth implementation, a cross-functional project team was formed after the ERP package was purchased. The project team consisted of 4 groups: Steering Committee, XYZ project working group, SSC Project working group and Quality Assurance group. The project managers in each working group were the contact points for the communication among these groups. The SSC directors were also in the Steering Committee and they had their own project managers as well.

The team members from XYZ IS team were not responsible for defining the processes; instead, they helped other members of the XYZ project-working group with technical issues of the ERP system implementation. The project was organized as groups shown in Fig 1, and members in each group are shown in Table 1. The roles and responsibilities of each group were as follows:

Figure 1: Organization of Project Team

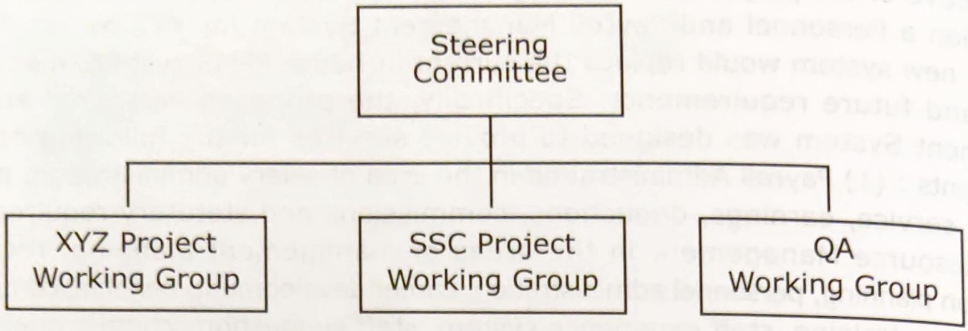


Table 1: Members of Each Group

Group	**Members**
Steering Committee	CIO, VP, DIR, Managers form XYZ user & IS groups, and DIR & Manager from SS C.
XYZ Project working Group	Manager, key users from user group, and Manager & technical team from IS group.
SSC Project Working Group	Project Managers, SSC Technical team and Implementation partner team from another company.
Quality Assurance Group	Audit Group Dir and Manager

Steering Committee

During the implementation of the new system, a steering committee was formed by XYZ CIO, Information Systems Group (IS) VP, Human Resources Group (HR) VP, IS director, HR director, IS project manager, HR project manager, SSC director and SSC project manager., Steering Committee members met weekly at the very beginning of the project, later monthly to review the project progress and cost. They were also involved in managing and providing support to the project. They provided strategic control of project and approved all major project plans concerning staffing, financing, milestones and results presented to them by the project managers. They were also actively involved in the implementation and provided quarterly reports on project progress to top management. Once they foresaw or faced any escalated issues impacting the completion of the project, they gave guidance for resolution. In the whole progress of the implementation, Steering Committee acted in quite an effective and professional way. They could always provide advice on critical issues related to various political and practical discussions, which the project team could not resolve.

A Business Manager said, "*If any problem arises, we used to try resolving it within our team. But if we cannot resolve or make a decision at our level, we escalated the problem to Steering Committee. They were highly committed to the project and helped us to resolve the problem in time*".

XYZ Project Working Group
A project team of XYZ was formed to work on the project in coordination with SSC project group. They helped with re-engineering HR operations and processes and ensured that actions were taken by the respective customer departments or external organizations. During the implementation, they were also responsible for monitoring and reviewing the progress and reporting the progress to Steering Committee. In order to make the project successful, the team members actively participated in ensuring the functional specification and technical design met requirements. In the user acceptance phase, they developed the testing plan and provided support during user acceptance on the completed system to ensure requirements were met. The team provided workstation, network technical support, database administration and operations support. The team also participated in the planning and implementation of the system, application security, change control and operations software. Reviewed and signed-off functional specification.

SSC Project Working Group
They were responsible for reviewing and analyzing gap between XYZ's current personnel and payroll management system requirement and procedures and the PeopleSoft HRMS and Payroll system. From the discussions with XYZ, SSC made clear the project scope; they defined and documented the project based on the approved scope; they identified and resolved implementation issues including policy, standards, security and legal concerns and recommended solutions to them; they developed test strategy and system test plan, conducted system testing and reviewed deliverables; they also provided support to user acceptance testing; they develop data conversion strategy, implement conversion plan. After implementation, in order to make user get familiar with the new system easier and faster, they organized end user training and provided documentation for all respective deliverables.

Before this project, SSC did not have any ERP implementation experience. So they asked technical consultants from PeopleSoft to join SSC technical staff. Upon formation, the technical team including the SSC team members and IS team members were sent for training on PeopleSoft before starting the work. XYZ maintained good partnership with SSC. They rarely met with problems in communication and knowledge transfer.

A key user said,*"The SSC implementation team was efficient and hard working. They are very friendly. We enjoyed working as a team and celebrated festivals like Christmas at workplace and exchanged the gifts."*

Quality Assurance (QA) Working Group
Project Manager involved the QA working group in providing consultancy pertaining to SSC QMS and any other related QA activities requested. It conducted internal quality audits to ensure compliance to SSC QMS and participated in phase end reviews.

Project Control Mechanism
XYZ had good knowledge of project control mechanisms and it acknowledged that a good control mechanism is a key element for project success. It laid the steps for internal control, customer control, sub-contactor control, PeopleSoft customization control, change control, change control management, change approval process and assessment of impact as follows:

Internal control: A project manager monitored and reviewed the project progress, tracked and reported the project progress to the steering committee on a monthly basis; weekly progress review meeting was conducted to track and resolve all outstanding project issues. Necessary review was carried out for major deliverables.

Customer control: Weekly meeting was held with user project manager and XYZ IS Project manager to review progress and to solve outstanding issues; the monthly progress report review was carried out with respective project managers before submitting to steering committee.

Sub-contractor control: Personnel were stationed on site as part of the SSC project team; they worked closely to meet the approved project schedule, and complied with standards and procedures as defined by the project management; SSC ensured the deliverables met completion criteria defined for the task.

PeopleSoft customization control: The basis for control was that the total customizations should not exceed 20% of vanilla version of PeopleSoft.

Change control**:** All the changes should be submitted via 'Change Request Form' and appointed a Core Team, which maintained the Change Log to track change request.

Change approval process: All the changes should be subject to the approval matrix as described in their annexure. In the event of issues, approval was escalated to PSC; approved changes were documented in Change History Form.

Assessment of impact: Assessing the efforts and resources required to effect the change documented in 'Impact Analysis Form'; the core team and PM had setup some adaptive actions, which shall be tracked through change request review by core team during team meeting.

Implementation

Implementation Strategy and Schedule

Implementation, systems interface, data conversion and testing strategies were defined for the implementation.The SSC Project Manager said, *"Our strategy to implementation was formed on the basis of the detailed project plan and in accordance with the requirement specifications. The implementation approach provided a timely and complete service, increased service levels, improved business strategy functions."*

The Lead Technical Consultant said, *"We recognize that in all implementations, no system stands completely alone. As such, identifying other systems, both internal and external to XYZ is critically important to ensure the successful implementation. We recommended adopting the systems interface strategy to identify internal and external systems required to be interfaced, ensure data integrity and connectivity and provide a contingency plan."*

In order to ensure the ultimate success in the implementation of the project, XYZ adopted the testing strategy that systematically integrates their testing methods into a well-planned series of steps. The testing strategy consists of Functional Testing, Conversion

Control, Integration/ System Testing, User Acceptance Testing, Stress Test, and Parallel Testing.

Project Management Procedure

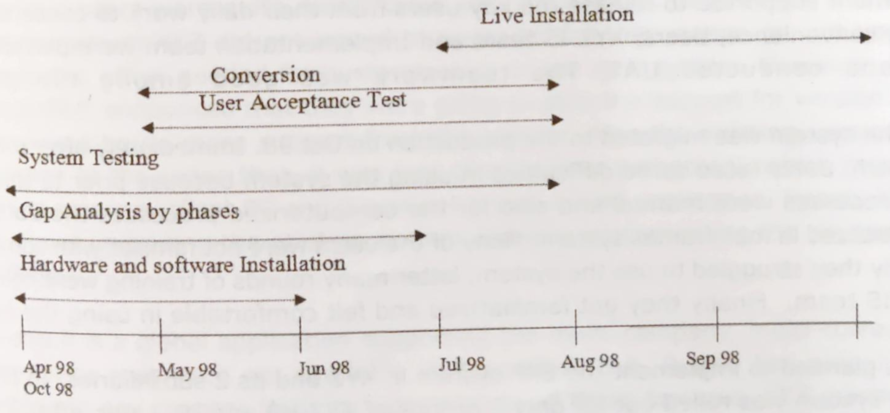
The implementation team followed the Project Management Procedure, which defined the project lifecycle as Project Startup, Project Execution, Project tracking & Management and Project completion. They also adopted the particular application development & maintenance methodology (ADMM), in which the implementation was divided into 8 phases namely Project Definition phase, Process Analysis and Design Phase, Technical Design Phase, Technical Construction Phase, System Testing Phase, Acceptance Testing Phase, Implementation Phase and Maintenance Phase.

The project was broken down into modules or application systems, which could be delivered incrementally or in parallel. System testing was included in the integration testing for the modules build incrementally. Most of the phases were carried out in parallel. The criteria of start a phase was based on the availability of information required for the phase. However, in the case of Technical Design phase, it was started when the functional baseline had been established.

Implementation Schedule

The implementation schedule consisted of Hardware and Software Installation, Gap Analysis by phases, System testing, User acceptance testing, Data conversion and Live Installation (see Figure 2). The project was started in Apr 1998 and completed in Jan 1999.

Figure 2: Implementation Schedule



Interaction between Stakeholders

The implementation team was a combination of consultants from PeopleSoft, SSC and XYZ IS team who maintained the existing legacy system and also joined as a part of the implementation team.

Total 7 modules, which are Personal Admin, Leave and Benefits, Payroll, Non-payroll related benefits, Recruit and Manpower planning, Training and career plan were planned to implement. One lead consultant and a small team of 2 to 3 persons headed each module.

All the consultants were located in the XYZ office. Although SSC had its own office in Singapore, it accepted the offer for its consultants to be hosed at XYZ for the duration of the project as that made it easier to get information, requirements, and clarifications fisofrom users. XYZ IS team acted like a bridge between the user and implementation team to transform the requirements.

One of the key user commented, *"Since IS team was from XYZ and supporting the existing mainframes system, it became easy for us to specify the requirements because they were familiar with policies and business processes. They acted like a bridge between the users community and implementation team to transform the user requirements to implementation team."*

After the project was started, at the beginning the steering committee and project management committee used to meet weekly. After kickoff of the project they used to meet once for every 3 months but if any problem arose, they used to meet daily to monitor the progress of the project.

All the time the project was on schedule but at the later stage of development some issue arose between the Central Provident Fund (CPF) board and XYZ on calculations of CPF contribution because of the PeopleSoft software. After detailed discussion with CPF board, technical team suggested a solution to solve this issue, which delayed the project by 3 months.

The Business Project Manager said, *"We escalated the issue to the Steering committee and they were actively involved to resolve this issue with CPF board."*

Management supported to release the key users from their daily work to concentrate on UAT. For convenience, Users, XYZ IS team and Implementation team were placed at one place and conducted UAT. The teamwork was good among the parties.

Finally the system was migrated to the production on Oct 98. Immediately after migrating the system, users faced some difficulties in using the system because prior to this many of the processes were manual and also for the computerized processes the data entry was centralized in mainframes system. Many of the users were not familiar with computers, so initially they struggled to use the system, latter many rounds of training were conducted by XYZ IS team. Finally they got familiarized and felt comfortable in using the system.

XYZ was planned to implement the ERP system in XYZ and its 2 subsidiaries. In the pilot run first system was rolled out for only 2 groups of XYZ HR and IS. Later, after 3 weeks it was implemented for all the groups in XYZ and its subsidiaries.

Post Implementation

From the beginning of the project, key users were involved in the project. The key end-users played a significant role in choosing the vendor and specifying the user requirements. Initially the key users and IS technical team were trained by the consultants on how to use the system, later they were assigned to train all the remaining business end-users. XYZ conducted a total of around 15 training sessions including subsidiaries to train all the HR and departmental line users who needed to use the system in their daily work.

Before implementing the PPMS, certain processes were quite manual, all the manual processes were made computerized and some of the existing computerized processes were streamlined. After computerization some of the job positions became redundant, so those positions were closed and the staff was transferred to other departments based on their current job roles. Initially some of the users were reluctant to use the system, later they got convinced after appropriate intervention mechanisms such as training and communication.

One of the end-users said, *"In the beginning I was afraid of using the computer. Later I was convinced to use it after many rounds of training sessions done by IS team."*

Critical Success Factors

Through the whole process of implementation, several critical factors interacted and ensured the big success of the implementation. Top management played a key role in the implementation as a continuous champion; with clear goals and objectives during the implementation, all the participants worked towards a correct direction; choosing a suitable ERP package which was aligned with the business needs made the implementation easier and smoother; an efficient and knowledgeable implementation team well carried out the implementation according to the schedule; a dedicated user involvement guaranteed the system met the requirements; moreover, user training sessions after the implementation helped them to understand the new system and facilitated a smooth transition to the new system.

Upgrade from PeopleSoft Ver5.8 to Ver8.8

Need for Upgrading

After the PeopleSoft Ver5.8 client/server implementation, the system was fine, running smoothly and users were quite comfortable with the system. Considering the financial cost and manpower XYZ did not intend to upgrade. Another reason for not upgrading was due to the effort needed for customization of the new system. However, 4 years later PeopleSoft announced that they were going to stop the support for version Ver5.8. As there would be no more support from the vendor. Also the existing version had a disadvantage in the sense that, it was just client/server technology which required to be installed on every client PC and it was not a web-based application. Hence, XYZ was thinking about upgrading the existing system and also implementing the HR system for global offices.

PeopleSoft8.8 is a global application supporting the multi-company, multi-currency and multi-language that were not available in PeopleSoft 5.8. It also has global payroll configurable to any country. With consideration to all these features, XYZ management decided to upgrade the system from Ver5.8 to Ver8.8.

Evaluations of Different Options (Upgrade or Re-implement)

After deciding to upgrade to Ver8.8, XYZ approached the PeopleSoft consultants for suggestions on how to upgrade. Two alternatives were suggested: one is to upgrade the software in sequence beginning from Ver6.x and second is to re-implement the system with the latest version. By that time PeopleSoft had already released versions 6.x, 7.x and 8.x. So XYZ was in dilemma: whether to upgrade step by step or to re-implement the system with Ver8.8.

Upgrading the system to 8.8 required the original system 5.8 to be first upgraded to 6.x, then to 7.x and then finally to 8.x. It was not an easy procedure and required lots of time, effort and financial investment. On the other hand, XYZ kept very good documentation of the requirements collected in the first implementation of the ERP system which was useful for re-implementing and would make re-implementation simple. Based on these, SSC suggested the reimplementation of system with PeopleSoft8.8, as it would incur less resources compared to up gradation.

The SSC implementation Team Lead commented that: *"Upgrades were normally available for tools and applications. Since no scripts were available to upgrade from 5.8 to 8.8 it was required to re-implement the system."*

Implementation Plan

Considering the factors like how long it would take to implement the hardware, how much customization was required and what new modules XYZ were needed to implement, SSC estimated the re-implementation as 1-year project and expected it to be cutover in Jan 2005.

The project was awarded to SSC, since it had prior implementation experience of vVer5.8. Once again Steering committee, Project Committee and Implementation Team were formed to perform the implementation. Based on the specific roles, the implementation team was divided into sub-teams like PeopleSoft Admin Team, Core Development Team, Database Admin Team and Functional Team. Besides, PeopleSoft consultants were periodically engaged to help with issues the SSC team was not able to solve as well as to verify the installation process. The project-working group was also formed with a Project Director reporting to the Project Management Office, Project Manager, and key lead consultants. The interactions between all stakeholders were well defined, organized and managed.

The Project Manager commented, *"After identifying all the stakeholders we framed the communication plan, including the frequency of meeting at various levels like the steering committee level and the project management level, the frequency of the status report and the kind of status reports. Everything had been planned and shared with the client and everybody was kept in the loop."*

Implementation Issues

The project progress was scheduled to rollout by Jan 2005 but the schedule was actually slipped by 9 months and got rolled out in Sep 2005. Delay of the implementation was caused by two incidents. One is that core functionalities delivered by PeopleSoft were delayed because of PeopleSoft's merging with Oracle. The other is that lots of employee turnovers during the course of the project.

As for the core functionalities delay, the Project Manager commented, *"From the product side there was a merger that oracle purchased PeopleSoft. So there were heavy turnovers and the moral became extremely low. As a result, it became difficult for us to get vendor support in time."*

The implementation team turnovers were due to insufficient manpower, *as one of the key user commented, "The main reason for the team member turnovers could be shortage of manpower in implementation team. The key person who was coordinating the project was over loaded with too many projects. As a result he resigned, project manager resigned and also some of the key developers resigned. Except one or two personnel the entire team was changed".*

Such kind of turnovers largely effected the project schedule, Firstly, once the turnover happened, the replacement was not always done immediately; secondly, it also took some time for the newcomer to settle down in the project and become productive, because the new bees had to first understand the project according to current system and the documentation.

As the Project manager recalled, *"When a person leaves, we might have a new person next day, but getting him to work on the project takes some time. The person needs to understand the project and we need to have some kind of team building to make him blended into the team. These were the problem we faced. Some time it was difficult to make the delay totally not transparent."*

"Our main business is system integration. Since our company is ISO 9000 certified and CMM level 3, we have strong methodology of documentation and version control. Knowledge loss was less, because everything (developer's tacit knowledge) is documented and we even keep individual persons emails into central repository when the project gets initiated. When a person leaves, the complete knowledge doesn't go with the person; but the challenge is that the new person must spend some time understanding the project by reading the documentation before taking the role of the previous developer in the project."

SSC Management's Commitment

Reaction to Implementation Team Personal Turnover

Once they found there was no sufficient manpower assigned for the implementation team, the management regarded the turnover as a serious issue and started adding more personnel in order to avoid the further delays. Considering the Brook's law, which states that, "Adding more people to a late project makes it later", was proved correct in XYZ's case. This can be verified from the project manager's comments which are stated above.

Moreover, since the turnovers happened at both the project management and the project team member level, SSC management realized that they should have taken some time to enhance the moral and paid attention to team building.

One of the project committee members commented, *"Perhaps we should have more team building from time to time and we should have encouraged more interactions within the project members to provide right motivation and to extract the right commitment. But still it (the turnover) is very subjective and could happen to any team, any project and any organization."*

So later the management did make efforts to bring all the members together, helping them get the correct commitment, sharing the objective of the project and making them feel they were important to the project.

The Project Manager said, *"We, team leads worked together to bring everyone closer, get everyone accountable and made them feel their share was valuable to the project. We went a couple of times for lunch together and held some bowling sessions to bring all the members together."*

Reaction to the Production Delay
Initially, delivery of the software was delayed by the vendor and product support was also inefficient. Later, the management of SSC communicated with the vendor's senior management and got the commitment from the product group that they would deliver what they had promised. After that vendor was dedicated and assigned two persons to work with implementation team for this project.

The Project Manager said, *"Sometimes things can not be done at the operational level so we escalated them to the senior management; they then spoke to the director, and senior director in US got all the commitment and assurance from the vendor saying that their acquisition would not affect any of the customers of PeopleSoft. Based on this consensus we worked closely with vendor operation team."*

XYZ Management Support
Because of the implementation delay, XYZ management put pressure on SSC in order to complete the project in time. Besides, they were still committed to support the implementation team to overcome the difficulties. And during the implementation the relationship among the Steering Committee, Project Committee and SSC Working Group remained quite good. They cooperated and strived for resolving the problems and moving forward.

One of the implementation team members mentioned, *"Due to the delay the client management was not happy and there were some kind of resistance; of course no customer would accept this. By rationalizing and sharing the situations, later they acknowledged that and supported us. And they really played a crucial role. They assigned some dedicated key users to work with us, making implementation faster. They also involved themselves in and always motivated the users to help."*

In order to offset the delay and make the implementation faster, the implementation team came up with different work around solutions to minimize the customization. Project Committee made decisions by evaluating these solutions. Once the project committee was not in position to make a decision, they would report it to Steering Committee to take an action.

Initially, project management committee (PMC) meeting was held monthly and Project steering committee (PSC) meeting was quarterly. After the delay, the meeting was more often, weekly once to review project status more closely.

One of the project members said, "During the UAT and trial run, PSC and PMC meet weekly once and in last 2 weeks of implementation, there were 3 meetings every 3 days. More check points were included and at every check point the steering committee reviewed the status."

Users' Support and Coordination

When the implementation team was more or less stabilized, SSC coordination team passed the user requirements to the implementation team for developing. At the beginning there was a communication gap between the SSC coordination team and the development team, so the function of the system was often different from what the users expected. Fortunately, later the mutual communication was improved.

One of the key users recalled, "Initially when we were testing the system, sometimes we found the system was functioning differently from what we expected. Over the period they managed to minimize such differences."

The pressure due to the delay also influenced the users. One of the users said that, *"The delay made every body get hiccup. When coming to UAT, SSC pushed us to rush up in order to avoid the further project delays. If the program worked, it was fine, otherwise we had to retest and retest until it was rectified."*

During the implementation, users in XYZ were involved in clarifying the requirement and dedicated to user acceptance tests. They internally do the unit testing, SIT, test specs, specification test cases, expected results, actual results, deviation, and analyzed the causes for deviation until they get the desire results. Timely feedbacks from the users facilitated the implementation.

An implementation team lead said, *"In this particular project, UAT was done at one go for all the modules. In order to successfully conduct the UAT, we need a strong commitment from user side. What we did was to test them either at client site or at development site. We totally brought the client and SSC under one roof, prepared all the test cases and had a period of 3 to 4 weeks to conduct the UAT. During this process, there were frequent status reports: how the UAT so for is going; is there any deviation; is there any result not satisfactory to the user; how much time we need to rework to get this done. All these were brought to management committee and even to steering committee. "*

"We had a trial run with actual data for 3 months before migrating to the production, comparing with the results on 5.8. We met some problems during this trial period, but with the assistance of cooperative users, we managed to get the results and verified the results immediately. Satisfied with the results, we moved to the production."

Customization and Business Process Redesign

Since the application was running on Ver5.8, any changes to this system will affect the requirements in 8.8. User requested some changes to the system because some policy had changed, so ultimately it was required to incorporate these in Ver8.8. In order to make the implementation faster, the implementation team tried to minimize the customization, with the consideration of both the importance and feasibility of the changes.

The Project Manager said, *"To certain changes which would largely affect the schedule, we said no. We considered the importance and criticality of the requirement. For some changes we accepted to incorporate; and for certain changes we suggested enhancing the system after implementation."*

Some customizations were done to the package, such as the payroll and leave module. Besides, XYZ had also changed some business process according to the PeopleSoft package. For example, XYZ had inter-company transfers frequently during the month, but in the package inter-company transfers should be only done at the beginning of the month, XYZ initially wanted to change the embedded practice to fit the business process since they had more inter-company transfers in the middle of the month. However, the vendor said that if XYZ insisted on that, the payroll modules needed to be further customized. On this, Project Committee was not able to make a decision, so it was brought to Steering Committee. At the end, XYZ management decided not to customize payroll and followed the package to do all the inter-company transfers at the beginning of the month. Still, for any exceptional cases required to transfer in the middle of the month, they would made that by adjusting the payroll manually.

User Training and System Support

SSC conducted 8 training sessions. For each session around 60 to 70 staff was invited, covering around 500 line users' daily operations of entering claims, leave approvals and other operational works.

After migrating to the production, most of the modules were smooth. There was one major problem with the payroll module but it was resolved within three days. The system was well supported by the implementation team as well as the infrastructure team.

The team lead commented on their relationship with infrastructure team, *"The infrastructure team was very supportive. We met with some performance issues and the DBA expert came on board suggesting some solutions. XYZ DBA tried that without resistance; actually it worked. Hardware and infrastructure had been handed over to the client; still in many occasions we went to resolve the issues."*

XYZ is further planning to optimize the system without compromising the response time and data load. The system was rolled out for 14 global offices. However, currently its repository was mainly used for information store. In future XYZ is going to improve that to get SGO staff self-service.

Besides, the existing employee self-service leave module is very basic. It allows only 3 types of leave for staff to apply online, but actually there are 15 to 20 leave types. For the remaining leave types, the HR leave clerks have to perform the administrative work offline upon staff request.

The technical lead said, *"Since the idea of enterprise system is to reduce the administrative work, by which people can focus on the core processes. From that prospective, now we are seeking to minimize the administrative work conducted by HR and the department clerks. Currently the enhancement is under development, and the new system is expected* *to go on live in March 2007, which could reduce at least 60% of administrative work."*

Lessons Learned

Vendor mergers and alliances may result in less-integrated solutions and less-knowledgeable support staff

PeopleSoft's mergers and acquisition initially resulted in less-integrated solutions and less-knowledgeable support staff, which caused the implementation delay. Admittedly, vendors' mergers and acquisitions are beyond the organization's control, but organizations involved in enterprise systems implementation should try to reduce the possibility of such kind of negative effect. They are recommended to make a more thorough investigation of the vendor's strength, especially the vendor's financial position, before signing on the dotted line. Due diligence to evaluate its financial status includes taking some time to investigate the vendor's background and its management team, thoroughly checking its financial stability, searching for early warning signs of financial distress, such as the resignation of the chief executive, massive layoffs and restructuring announcements.

Personal recruitment and retention is important to project success

One of the greatest challenges organizations encounter these days in an ERP project might be related to the recruitment and retention of key personnel (Dave Swartz and Ken Orgill, 2001). XYZ's re-implementation of PeopleSoft Ver8.8 in this case was one example. Following are some recommendations for retaining personnel:

- Additional Compensation for "life of project" Efforts - A bonus program will help keep key personal throughout project and drive key objectives such as CRP.

- Finding and Nurturing People early - Start early to identify and recruit key personnel and bringing them into the team. Besides, partnership with a large consulting group helps, since they can provide ample resources when needed.

- Back-filling Staff - Make sure there is enough depth on the operational side, since it can really take the steam out of a project to lose key functional staff.

- Staffing Matrix - Set some goals for staffing over time and tracking progress.

- Knowledge transfer and mentoring - Develop a plan to transfer knowledge from consultants to key personnel

- Stress Management - Manage stress levels through various means and keep an eye out for employees on the edge as their stress can cause ripple effects throughout the project.

- Team Building - Focus some energy on building teams from the start of the project, so that they can work together even when the going gets difficult.

- Morale of the Team - Provide periodic downtimes and events to boost and maintain moral, because the extreme perseverance and dedication required by ERP implementation over a long period of time would take its toll.

Concluding Remarks

The top management's commitment, appropriate package selection, efficient implementation team, key users participation, predefined and well-managed communication protocol among the stakeholders would contribute to the success of ERP implementation without delays. It is particularly noted that either the support form vendor or the retention of key personals in the project plays a crucial role in ERP success. In XYZ's case, the takeover of PeopleSoft by Oracle delayed the software delivery and affected their support, and the key personnel turnovers in implementation team also delayed the project process by 9 months.

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