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2.1. Introduction

The Business Environment has changed fundamentally from a straight competitive model based on price and economies of scale, to the one based on knowledge, joint ventures, fast technological developments and rapid change. Thus, the competitiveness of nations lies in their ability to create, store and disseminate knowledge in as economical a manner as possible. Business continues to face other transformations triggered by widespread computerization. The number of distribution channels is growing, forcing most companies to increase their mix of products and services, and making the task of keeping track of revenues, expenses and other financial information far more complicated. At the same time, many companies are realizing that, to stay competitive, they must update their fundamental business model to adapt to the ever-changing marketplace. What has emerged is a trend of shifting the management orientation from one of accounting of financial assets to that of measuring and monitoring the intangible assets relevant in the knowledge economy. Gone are the days when companies were seen only as physical entities that converted raw materials into tangible products. Today, physical capital is of less relative importance for creating and sustaining competitive advantage than intellectual capital. For many companies, the market value of intellectual capital is now too large to be categorized as goodwill.

The Management Accounting professional is expected to keep pace with these changes, and provide accurate and timely financial information that can be accessed and analyzed quickly and easily. While digital technology may make it easier to collect information and move it from one place to another, it has also led
to an incredible proliferation of data. Filtering, sorting, compiling, analyzing and disseminating financial data in ways that add real value to the corporations have become daunting tasks by converting data to information to knowledge. The corporate landscape and the way it operates is changing. We are entering the New Economy - a period of increased global activity marked by sustained deflationary pressures and technology-driven interactivity. The result is higher rates of consumption and investment. It is an environment where utilizing the Internet, in both the front and back office, powerful competitors can emerge overnight. Technology is the enabler, and the people and their intellectual property create the competitive edge. Combined with this phenomenon is the rise of the service industry. It has surpassed manufacturing and with it, company assets are migrating from tangible to intangible. Consumables have become inconsumable and structural has become intellectual. Even manufacturing itself is reliant on knowledge. Product cycle times are shorter and margins are slimmer. Captured and shared knowledge can cut lead times and costs significantly as the wheel ceases to be reinvented.

Against this background, the importance of Knowledge Management is being recognized by the mainstream. Enterprises are starting to look at new business models to create, retain, manage and share knowledge. This is a very different model to the hierarchical and departmental structures of the old regime. However, despite the buzz, many enterprises are still far from implementing a business model or working system that enables more efficient use of knowledge within the organization. There are only a few leaders who have taken the first steps toward creating an enterprise-wide Knowledge Management solution. A harder focus on the bottom line impact is what is required. Companies create value from the efficient and innovative use of corporate resources, both tangible and intangible. Better management of the intangible knowledge resources within a company (including best practices, customer and product knowledge,
information flows, values, behaviours, and team work) will significantly increase the ability of an enterprise to out-perform its competitors. This approach enables Knowledge Management to capture and share knowledge efficiently into Intellectual Capital and thus ensures efficient use of corporate knowledge to create competitive advantage. It is a central theme that economic value must be the basic driver behind all the activities of enterprises. If a diversification, organizational restructure or even just a software upgrade is not going to positively influence the bottom line, then resources should not be spent on the implementation. As a result, businesses have developed a distinct perspective on the tangible economic value of knowledge. Using insights acquired from client engagements and accepted financial principles, businesses have developed a methodology that clearly substantiates the linkage between Knowledge Management, rapid innovation, and measurable economic value. There has been a growing acceptance by industry and financial analysts of the concept of market-to-book value as an indicator of intellectual capital. Significant premiums in market valuation, over-and-above accounting book value, are deemed to be a reflection of how well a firm manages intangible assets including knowledge. One of the generally accepted manners in which this market-to-book premium has been expressed as an indicator is the Market Value Added.

2.2. Need for, and Importance of, the Study

In the new digital environment, the way business is done is changing dramatically. One can observe paradox everywhere. For example, small businesses will be under increased pressure. However, they will also be in a stronger position to compete with larger organizations than ever before provided that they learn how to apply technology quickly to their natural competitive advantage of being able to rapidly adapt to change. The recurring themes of the future would center on globalization, technology impacts (and specifically, the convergence of information and communication technologies), knowledge and
knowledge bases, networks, virtual communities, virtual currencies, global
taxation regimes, virtual organizations, intellectual capital, critical competencies,
connectivity, real time intelligence and expert systems. In particular, as enabling
applications technology becomes more of a commodity and bandwidth issues are
resolved. It will be knowledge content and process innovation that become the
key to business survival and growth in this millennium. The rate of change will
mandate a much higher level of management skill among business people and
they will increasingly rely on more relevant, focused and experientially enriched
management information system. Economic power will shift from organizations
that possess large chunks of tangible assets to those that are able to best utilize
intellectual assets. When individual consumer information is added to the
equation as an asset, the competitive battleground shifts to a totally new plane.
Using individualized information, one can achieve economies of scope which can
make the competitors' economies of scale relatively less decisive.

Another way to think about this is that, whereas in the past, value was
created closer to the point of production, today and in the future, it is (will be)
created closer to the point of consumption. Increasingly, experience has shown
that the growth and long-term prosperity of the firms are found when the focus
of business strategy is on building customer loyalty rather than continually
seeking new customers. Convergent technologies will reduce the cost of
information, while the volume will increase, in both cases, dramatically. In other
words, information will become less expensive and more expansive. Further, the
time span between an event and feedback about it, will shorten to the point
where it is close to, if not actually, real time. However, if a business person does
not know how to interpret and act on information that is provided on a monthly
or yearly basis, it is unlikely that person will be better equipped if the same
information is available by the minute. Timeliness is said to be a critical
determinant of information value, but knowing what to do with the information is the necessary condition for its ultimate utility.

In the past decade, we have observed a dramatic improvement in the functionality and availability of powerful, cheap and user-friendly accounting software. It is reasonable to assume that this would lead to an improvement in business performance and a reduction in failure rates. But this has not been the case. This, again, lends support to the proposition that it is not simply a question of information availability, timeliness or cost. The real and urgent issue is fundamentally concerned with how information can be usefully applied to improve performance, and that is something Management Accountants have not been good at helping their clients with in the past. This issue is fundamentally about process viz., how can the enabling technology be incorporated in management processes to improve business unit performance, and the role Accountants play in that process. No matter what industry we choose, or the state of the economy, there are always some firms within those industries that out-perform the rest by an order of magnitude. The interesting thing about this observation is that top-performing firms use the same purchased inputs, employ the same type of people and serve the same markets. So what explains their performance excellence? We believe the management processes which, in turn, define and focus the business processes they employ, explain it. These firms are able to make much more productive use of their people and assets than their competitors. The vast majority of people who are running their own business started (or purchased) it for all the wrong reasons. They believed, they would be independent and would reap the financial rewards that they thought people in business achieve. But, in reality, they simply ended up with a job and a lot of problems too. As the business environment undergoes even more change as a result of the impact of technology, the difficulties faced by businesses in future will become more acute.
2.3. Statement of the Problem

In the next few years, one can witness a continuation of new technology innovation in such a way which we have never seen before. We are coming into the Golden Age of Communications. Fifty years from now, people will look back and say, this is where it all began. Communications technology has led to a leveling of the market place. One of the indicative examples is that downloadable content distribution allows the public, for the first time, to take control of its own music. This move towards empowerment is amplified by the ability to gain real-time information for every area of our lives. In finances, network technology is making intangible valuation more possible, getting out good information that enables people to make better decisions on capital allocation.

Further, the Internet dramatically reduces costs along the supply chain, making organizations more efficient while creating the conditions for instantaneous global reach simultaneously. This benefits both the existing and the new organizations. Old Economy organizations can reduce their expenses and compete globally. And, new organizations can explode from nothing to become significant businesses in a short period of time. Operating in the New Economy, therefore, requires living with both its opportunities and its contradictions.

The role of intangibles is a metaphor for the era we are in. They are the phenomena that drive the New Economy. Yet they are the most difficult to define and value. To navigate in this environment is to understand the drivers of these values, the role that agility plays in creating and executing strategy, and that it is business models rather than technologies that are disruptive. These guiding stars contribute to a set of principles that are as applicable for entrepreneurial individuals as they are for global corporations. In today's highly
connected economy, the Management Accounting systems are growing ever more inadequate. The time lapse from when an action is taken to when its result can be measured is decreasing so that relying on lagged measures is insufficient. The amount, type and sheer pace of information about the effect is increasing, and can be tracked continuously over any time period so that using discrete measures is misleading. The availability of this information permits people to make better decisions and (by changing the way decisions can and should be made) has a profound effect on the reach these decisions have. In simple, the old systems cannot keep up. Because, a company's value is not captured on ledger sheets; it is ideas, not things that account for much of the value the capital markets assign to companies. Traditional measurement systems miss the sources of true value creation.

2.4. An Overview of Literature

The details about the earlier works were collected from different sources such as Internet, business magazines, books, etc. During the review of these works, several cases were also gone through and the same gave a deep insight into the conceptual framework of Knowledge Management. However, two important surveys conducted recently in New Zealand and UK by KPMG, one of the big five global consultants, are reviewed in the following pages followed by the review of some of the relevant articles, research papers, white papers, etc.

2.4.1. Global Surveys in Knowledge Management (KM)

First survey sampled firms in five sub-sectors viz., Forestry and Logging; Chemical Manufacturing; Transportation Equipment Manufacturing; Machinery, Equipment and Supplies Wholesaler-distributors; and Management, Scientific and Technical Consulting Services. According to the survey, majority of the firms were managing some aspects of their knowledge. Service industries had the highest average number of practices in use. These industries depend greatly
on marketing the application of their workers’ knowledge. Findings suggest that firms are employing knowledge management (KM) practices strategically to improve their competitive performance and productivity. About 30% of the firms said that they used such practices to increase efficiency by using knowledge to improve production processes. About 23% reported that their aim was to train workers to meet strategic objectives of the firm to integrate knowledge within the firm. Knowledge sharing, creation, generation and maintenance are perceived as important to a firm’s productivity. And 9 firms, out of 10, reported that the most effective result of using KM practices was improving worker skills and knowledge. The second most effective result was increased worker efficiency and/or productivity.

Firms viewed the loss of key personnel as the main trigger for implementing more KM practices, followed by loss of market share. The challenge of KM has always been the same viz., getting the right information to the right people at the right time and in the right way. But the survey of 419 top IT executives shows, KM systems - at least by that title - aren't yet a major focus for many companies. The good news is that for many of those installing KM systems, goals such as improving communications and enhancing customer and employee satisfaction were routinely met. The bad news is that more RoI-focused goals, such as increasing profit margins and reducing costs, were rarely achieved. Just a quarter of respondents have installed or are implementing a KM system, and about the same percentage say they're planning such an initiative. But more than half report no intention of installing a KM capability. 70% of CIOs who have no plans for a KM system concede that they have never even considered one. Top reasons are: 40% were unsure of the benefits, while 34% had no budget for a KM system. Widely cited reasons for deciding against installing KM are:

- Prohibitive cost (32%),
- Perception that KM doesn't match corporate strategy (30%),
o No system could be found that met corporate needs (26%), and
o Lack of resources (29%).

Collaboration, information access and expertise location, along with e-learning, are the most common types of KM initiatives. KM has a different look at different companies. For example, in the case of Energy Companies, KM might involve pricing trends and for Customer-focused, brand-based sales organizations, it is the customer. In the consulting world, KM is understanding and sharing the information consultants have about an industry, and the tools and techniques they have used. Other important conclusions of the survey are presented below.

a. Conclusion - 1: Initiators: IT executives were by far the most frequent initiators of KM systems, and the IT department was the group most frequently cited as managing KM projects.

b. Conclusion - 2: Components: There are no clear winners in the KM component popularity poll. Project management, Intranet infrastructure, Internet infrastructure, Collaboration tools and groupware, Web publishing, and Portal technologies are the most regularly cited technologies to have already been implemented or are in the process of being installed.

c. Conclusion - 3: Acceptance: KM systems seem to gain reasonable levels of acceptance among employees and only 12% reported either somewhat or extremely negative responses.

d. Conclusion - 4: Results: The good news is that KM systems came reasonably close to meeting expectations for the most frequently stated business goals for KM projects.

e. Conclusion - 5: Time and Cost: KM systems seemed to come in relatively close to respondents' original time projections, with a track record on staying within budget was more spotty, with less than half reporting they met budget expectations. Meanwhile, respondents cited "lack of necessary resources" and "scope creep" as the important reasons for falling behind schedule.
Second Survey:² Five important key benefits listed by over 80% of the respondents are:

- Increased responsiveness to customers (83%);
- Innovation: more consistent success in designing new products/services and processes (83%);
- Efficiency: increased productivity of knowledge workers (83%);
- Improved decision making (83%); and
- Flexibility: ability to change and adapt to change more rapidly (82%).

The pharmaceutical industry sees more benefits from actively managing knowledge than any others. More than 90 per cent of its respondents saw benefits for innovation, efficiency, flexibility and quality. Of the media respondents, though a smaller group, 100 per cent cited innovation and improved decision making as benefits. Other 100 per cent responses included innovation in the health care industry, efficiency in the computer industry and responsiveness in the paper/forestry products industry. When asked to select one benefit as the most important, a clear ranking emerges as evident from the following:

- Innovation (23.2 per cent),
- Flexibility (16.0 per cent),
- Customer responsiveness (10.2 per cent), and
- The levers

Respondents were asked to rate their performance in eight KM practices on a scale from very poor to excellent. Measuring the value of knowledge assets and/or their impact proved to be the area of most disappointing performance, with nearly 70 per cent of the respondents rating their organisation's performance as worse than average.
Challenges and Barriers: Culture was cited as the single biggest obstacle to knowledge transfer with 29 per cent of all respondents placed it first among a list of ten obstacles, well ahead of the next factor, top management's failure to signal its importance (13 per cent). 41 per cent of human resource managers listed culture as the top obstacle. Culture was repeatedly mentioned as the single largest obstacle, and the importance of top management support was also stressed. This suggests that those actively involved in KM activities see their importance in a different light to those of executives at large. Irrespective of the factor that respondents rated first, 66 per cent were optimistic that effective management could overcome their most important impediment. Anticipating the importance of measurement, respondents were asked to rank a total of five from 15 listed measures. Altogether, six measures scored significantly, as follows (again applying weights to the ranked responses):

- Revenue generated by new ideas (34);
- Collaboration levels in key initiatives (31);
- Productivity in knowledge workers (27);
- Quality of decisions (25);
- Percentage of revenues from new products (23); and
- Employee awareness of knowledge sources (21).

Examination of these indicates that in most companies, they would be difficult to measure in practice. Some of the factors easiest to measure, such as employee attrition rates, submission to knowledge bases, expenditure on training and R&D, came at the bottom of the list! The gap between desired measures and ease of measuring suggests that justifying KM will be very subjective for some time to come.
A very significant functional bias was recorded for the measure of collaboration levels in key initiatives. Over 80 per cent of R&D managers and planners, and 70 per cent of IT managers ranked it first or second (compared to 24 per cent overall). Clearly, these managers see their success as highly dependent on collaboration levels. Creating a bureaucracy was considered to be the major risk to managing knowledge. In an unprompted question, 14 per cent of the respondents cited this as a major risk. Other relatively high scoring factors were capturing the wrong information including obsolete information (10 per cent), measuring return on investment (9 per cent) and security leaks (8 per cent).

Third Survey: The survey confirmed beyond doubt (89%) that knowledge is seen as the key to business power. Gaining competitive advantage is ranked as the most important application of knowledge from a range of eleven possibilities in terms of its contribution to business objectives. Second comes increasing profits. This suggests that businesses see knowledge as a key component of identifying and developing higher margin products and services in profitable niche market sectors. The future role of information technologies is nevertheless important to integrate, span cross-functional boundaries, avoid fragmentation, and provide global networks for knowledge sharing backed up by a strong desire to create customer databases to improve customer understanding. Online information systems, document management and groupware are the three key technologies now being used extensively in business for KM. Other important findings of the survey are as follows.

- KM is a slippery concept. In practical terms that means businesses must do three things effectively viz., find and capture the knowledge they’ve got, share it, and exploit it to some commercial benefit.

- People and their attitude to sharing knowledge are central to creating it and using it for competitive advantage and increasing profit.
Much of the knowledge which they require for competition is already resident in their organisations (i.e., in the heads of key employees).

The challenge is to identify this knowledge and to share it with benefit in the wider organisation.

But people are reluctant to share their knowledge or to depend on someone else's for fear of losing influence or control.

Report of New Zealand Knowledge Management Survey, 2002 - Barriers and Drivers of KM by David Pauleen and David Mason analyses the responses to the three important questions viz., (a) What are the greatest barriers to successful implementation of KM ? (b) What are the main drivers encouraging organisations to adopt KM ? and (c) What is the single most important factor in successful KM ?

According to the Report, 45% of respondents had opined that the Organisational Culture as the most important barrier followed by Leadership with 22% of the respondents. Further, breakdown of the most important barrier viz., Organizational Culture into its sub-categories depicts that the majority of the respondents refer to internal organisational aspects. The four most important categories are under the direct control of the organisation's management and they are culture (41%), trust (17%), organizational culture (17%) and communication (10%). As regards the nature of the respondents' concerns on the barriers to KM, the same appear to revolve around the ability of organization and people to change their thinking and processes and the perception of employees that they may lose something, e.g., their job, if they trust others with what they know. Leadership and a lack of understanding also figured highly in respondents' minds as barriers to KM in their organizations. 22% of the respondents opined that the leadership was an issue while other 16% of the respondents found that organizations lack awareness, understanding and vision concerning KM. In summary, the main barriers to successful KM
implementation are culture hostility to KM, a lack of leadership by top management, and a general lack of awareness of KM.

While the most significant barriers to KM reside within the organization, the single most significant driver of KM, competition, comes from without. Competition includes securing a competitive advantage (46%) and increasing productivity (38%). It is also seen as a reaction to peer pressure (16%). It was observed that the respondents are feeling pressured to implement KM practice to improve their own organizations' productivity and remain competitive in the market place. Organizations often feel a need to follow fashion as KM is seen as the next 'big thing' after BPR and TQM. Intellectual capital is another significant driver according to respondents. Indeed, high staff turnover can also be seen as a barrier to a successful KM program. The findings seem to point to a clear dichotomy in the factors that drive and impede the uptake of KM programme. Those factors that are proving to be barriers are primarily internal to the organization including organizational culture, leadership and management practices as well as a general lack of awareness and vision about KM. The drivers of KM, on the other hand, seem to be external to the organization and they include competition, peer pressure and the perception that KM can boost productivity and prevent information loss.

The Knowledge Management Research Survey Report, 2000 by David Parlby is a very comprehensive Report dealing with various dimensions of KM. The summary of the Report is presented below.

a. KM is an Accepted Part of the Business Agenda: 423 organisations in the UK were asked whether they had a KM programme. Over four-fifths (81%) said they had, or were considering, a KM programme. 38% had a KM programme in place, 30% were currently setting one up and 13% were
examining the need. The great majority of leading organisations are now actively pursuing KM.

b. The Benefits of KM are being Realized: Respondents understood the potential role that KM could play. Companies were looking to KM to play an “extremely significant” or a “significant” role in improving competitive advantage.

c. Organisations with a KM Programme are Better off than Those Without: Companies with a KM programme are better placed than those without. For instance, under half with a KM programme complained about reinventing the wheel (45%), compared to nearly two-thirds (63%) of those without a KM programme; 61% could access data profiling the buying habits of a particular customer within half a day as opposed to 38% without; and 72% could access an agreed methodology for a business process within half a day as opposed to 55% without.

d. There are even greater Benefits to be Gained: Organisations may be missing fundamental opportunities. Three-quarters of respondents whose organisations had a KM programme in place expected it to lead to new ways of working, increased market share or additional business opportunities. They may also be missing the long-term financial benefits. Three times as many respondents expected their KM programme to lead to increased profits (76%) and reduced costs (73%) as expected it to lead to an increase in their company’s share price (28%). They see the immediate, internal cost gains but fail to equate these to any external, long-term benefit such as intellectual capital growth. Although it is useful to concentrate on profits and costs of other internal factors, companies should also understand the fact that they can benefit in other ways such as growth in share price.
e. Organisations are Failing to Tackle KM’s Real Challenges: This may be because organisations do not understand (and are not supporting) the full implications of KM implementation. The 36% of respondents who said that the benefits had failed to meet expectations were asked why. The most often cited reasons included lack of user uptake owing to insufficient communication (20%); failure to integrate KM into everyday working practices (19%); lack of time to learn how to use the system or a sense that the system was too complicated (18%); a lack of training (15%); and a sense that there was little personal benefit in it for the user (13%). In short, KM brings its own challenges which organisations are failing to address. Even those companies with KM programmes complained about problems such as lack of time to share knowledge (62%); failure to use knowledge effectively (57%); and the difficulty of capturing tacit knowledge (50%).

f. Organisations are Blind to the Employee Considerations: These problems reflect organisations’ failure to grasp the cultural implications of KM. A KM programme should remove the frustrations that employees face in gathering and accessing knowledge. Yet, only a third (33%) of all respondents had knowledge policies. This lack of organisational commitment was evidenced by the finding that only 16% of the respondents whose organisations had or were considering a KM programme measured intellectual capital – that part of an organisation’s value that is based on intangible assets such as knowledge, innovation and relationships. This mirrors organisations’ failure to see KM in terms of creating shareholder value. Organisations that grasp the cultural implications can achieve what was defined as the High Performance Employee – an individual that uses KM procedures and technologies to fulfil their own potential and deliver real business benefits to the organisation, its customers and its stakeholders.
g. Companies still see KM as a Purely Technological Solution: Organisations have adopted a number of relevant technologies for KM purposes. 93% of respondents used the Internet to access external knowledge, 78% used an intranet, 63% used data warehousing or mining technologies, 61% document management systems, 49% decision support, 43% groupware and 38% extranets.

h. Companies have a Long Way to go on the Knowledge Journey: Most organisations do not have a fully integrated KM system. Half (53%) of respondents whose companies have a KM programme in place considered KM to be an integral part of organisational and individual processes. The issues have less to do with implementing the necessary technology than with running a complete KM programme.

i. There are Few Sector and Geographical Differences: Although the research was carried out amongst organisations in the UK, mainland Europe and the US and across a number of sectors, there were no significant differences between respondents’ views on a sector or geographic basis. It is surprising given the perception of the US being more technologically advanced than Europe.

j. Current KM Problems: Respondents were also asked to specify the knowledge problems from which they suffered. Again, those whose organisations had a KM programme in place were less hampered than those without. Under half with a KM programme complained of “reinventing the wheel”, against two-thirds of respondents without. Half complained of the difficulty of capturing tacit knowledge, against two-thirds without a KM programme. But a significant number of those with a KM programme complained about information overload and the lack of time to share knowledge. This indicates
that while organisations with a KM programme are better off than those without, there is still much to be done to progress in the knowledge journey.

k. Speed of Access to Information: Respondents were asked how long it would take them to access certain types of information. Those whose organisations had a KM programme in place were able to demonstrate appreciably faster response times.

l. The Potential Role of KM: Respondents were also asked for their views of the potential role that KM can play in achieving specific organisational objectives. For this, respondents viewed KM as having a key role to play in achieving many of their organisations' objectives. Implementing enterprise resource planning systems, creating a KM strategy and benchmarking the current situation scored more highly than establishing knowledge policies, creating a knowledge map and measuring intellectual capital. This confirms that less attention had been paid to the non-IT aspects.

m. The Future: The findings of this Report confirm that KM is an accepted part of the business agenda. The benefits of KM are acknowledged and organisations with a KM programme are demonstrably better off than those without. However, the full benefits of KM are being missed and organisations are failing to tackle KM's real challenges. In particular, they are blind to the employee considerations and many still see KM in purely technological terms. Organisations are failing to grasp the fundamental changes to their day-to-day operations and culture that successful KM implementation requires. Increasing awareness in the business community of the 'dot.com' revolution will focus attention on KM assets of the companies and how they are managed. Those companies that have grasped KM and implemented policies to encourage it will be rewarded with enhanced market ratings. This, in turn, will drive a more sophisticated understanding of the HR and internal
communications aspects as organisations take a more holistic view of knowledge and its value.

2.4.2. Articles, White Papers, Working Papers, etc

In their article entitled Knowledge Management, Knowledge Organizations and Knowledge Workers, Mr. Nonaka and Mr. Takeuchi portrayed the characteristics of the 'new world of business' where high levels of uncertainty and inability to predict the future exists. The authors contend that use of the information and control systems and compliance with pre-defined goals, objectives and best practices may not necessarily achieve long-term organizational competence. This world needs the capability to understand the problems afresh given the changing environmental conditions. The focus is not only on finding the right answers but on finding the right questions.

Mr. Thomas Davenport in his working paper on Knowledge Management for the New World of Business emphasises that the new world of business imposes the need for variety and complexity of interpretations of information generated by computer systems. Strategies for surviving in the new world of business cannot be 'predicted' based on a 'static' picture of information residing in the company's databases or individual mindsets. Rather, such strategies will depend upon developing interpretive flexibility based upon diverse and multiple interpretations of the future. In this perspective, the objective of business strategy is not to indulge in long-term planning of the future, at least in the traditional sense.

Mr. Carol Hilder Brand in his interesting article viz., Three Myths that can Derail Your KM Investments cautions that KM is in danger of being perceived as so seamlessly entwined with technology that its true critical success factors will be lost in the pleasing hum of servers, software and pipes. Three
myths that can derail the KM efforts are: (a) KM technologies deliver the right information to the right person at the right time, (b) Information technologies can store human intelligence and experience, and (c) Information technologies can distribute human intelligence.

In his article entitled Toward a Knowledge Ecology for Organizational White-Waters, Dr. Malhotra vividly pictures the traditional view of KM in terms of prepackaged or taken-for-granted interpretation of information. However, this static and a contextual knowledge works against the generation of multiple and contradictory view points that are necessary for meeting the challenge posed by smoggy environments. As illustrated by case studies of companies that have relied on this concept of knowledge, Dr. Malhotra drives home that this may even hamper the organizational learning and adaptive capabilities. The wicked environment of the new world of business imposes the need for variety and complexity of the interpretations of information. Such interpretations are necessary for deciphering the multiple world views of the uncertain and unpredictable future. Another working paper by the same author on Knowledge Management for Enabling E-Business Performance and New Economy Enterprises argues that the corporate world has seen the emergence of interest in KM and adoption of the term by information technology vendors and industry solution providers. However, despite the popularity of the buzzword, most such implementations have been based on an outdated business model and related information-processing view. The paper concludes that what is needed is better and more accurate understanding of KM as enabler of information strategy for the e-world of business.

The Intel’s white paper on How to Enable Next Generation e-Business Architectures for Business Transformation acknowledges that the business environment is characterized by rapid and radical change which in turn puts a
premium on continuous business model innovation to deliver novel, sustainable
and competitively viable customer value propositions. Top executives are
demanding better justification for investments in e-Business technology
infrastructures and expected business performance outcomes. They realize that
the next generation e-Business models must be based on ongoing innovation of
business value propositions and extended inter-enterprise value chain.
Investments in new e-Business technology architectures and solutions would
contribute to the adaptability of the businesses to unprecedented and rapid pace
of change.

Dr. Malhotra’s another article entitled Knowledge Management as
Enabler of Business Model Innovation\(^\text{10}\) brought out the concept of KM as not a
new in information systems practice and research. However, radical changes in
the business environment have suggested limitations of the traditional
information-processing view of KM. New business environments are
classified not only by rapid pace of change, but also by discontinuous nature
of such change. The new business environment, characterized by dynamically
discontinuous change, requires a re-conceptualization of KM as it has been
understood in information systems practice and research. The KM framework
presented in this article facilitates the business model innovation necessary for
sustainable competitive advantage in the new business environment
classified by dynamic, discontinuous and radical pace of change.

Mr. Yogesh’s another white paper on Accounting for Knowledge Assets
in the Assessment of National Intellectual Capital\(^\text{11}\) unleashes the transition of
most developing and developed nations to knowledge economies which has
resulted in an increasing awareness of ‘knowledge’ as a key lever for economic
growth and performance. With increasing emphasis on aligning national
information resource planning, design and implementation with growth and
performance needs of business or nation, better understanding of new valuation and assessment techniques is necessary for information resource management policymakers, practitioners and researchers.

At the Conference on Information Systems (Knowledge Management in Inquiring Organizations),\textsuperscript{12} the group discussion culminating on the KM solutions characterized by memorization of 'best practices' which tend to define the assumptions that are embedded not only in information databases, but also in the organization's strategy, reward systems and resource allocation systems. The hardwiring of such assumptions in organizational knowledge bases may lead to perceptual insensitivity of the organization to the changing environment.

In the joint white paper on the Role of Information Technology in Managing Organizational Change and Organizational Interdependence\textsuperscript{13}, Paul Andon et al., opine that the rate and magnitude of change are rapidly outpacing the complex of theories relating to economic, social and philosophical on which public and private decisions are based. To the extent that we continue to view the world from the perspective of an earlier, vanishing age, one will continue to misunderstand the developments surrounding the transition to an information society, unable to realize the full economic and social potential of this revolutionary technology.

The paper brought out by the Brint Institute of Net Working Technology on The Most Critical Challenges of Knowledge Management\textsuperscript{14} provides insight that the technology provides part of the answer but not all of it. A successful KM strategy combines the power of IT with the creative and innovative capacity of the people. One must nourish creative and innovative capacity of their staff relating to the resources besides rapid response to changing customer and market trends. The ever changing environment demands a major attitude
overhaul and the focus must be on leveraging the entrepreneurial spirit of the people and keeping the structure agile to thrive on the edge of chaos.

The British Telecom's Report on When 'Best Practices' Become 'Worst Practices'\(^5\) advances its conclusion that any competitive advantage is transitory given the changing dynamics of the environment, the industry and the competition. What is best today may be worst tomorrow depending upon the shift in the references that determined its best. Hence, the need for ongoing reassessment.

The article entitled The Future of Business and Empowered Knowledge Workers by Mr. Richard\(^6\) indicates that the newly empowered human will live in a world of immense choice that may often imply living with immense risks and immense returns. The knowledge worker's choice of 'what to do', 'where to do', and 'when to do' in the 'anything, anytime, and anywhere' economy will result from incarnation of what is currently known as flex work, tele work and virtual knowledge work. The choice will not be easy for most who have been traditionally ensconced in the increasingly mythical shell of stability and security as they suddenly find that they are traveling at warp speed into a future of infinite choices. The feeling will be simultaneously exhilarating and unnerving - the joy of freedom to choose blended with the apprehension of making one's own choices and having to live with them.

Dr. Yogesh in his occasional paper on Designing Systems for Organizational Learning and Learning Organizations\(^7\) stresses that the key is not getting the right strategy but fostering strategic thinking as the organizations and managers are faced with dramatic changes and unpredictability which require emphasis on fostering learning rather than devising plans. Essentially, learning organizations and managers learn from their experiences rather than
being bound by their past experiences. Accordingly, the information systems that are intended to facilitate KM need to be designed so that they do not straitjacket the knowledge processes that are critical for survival in the new world of uncertainty and high probability of risk.

Dr. Paul in his article entitled Knowledge Management Depends Upon Acceptance and Effective Utilization of the Technologies\(^\text{18}\) opines that buying a typewriter does not make one a better writer. Similarly, just buying new information technologies does not make an organization better at managing knowledge. He concludes that the critical success factor is the acceptance and effective utilization of the technologies.

In their joint article entitled The Human Denominator in Knowledge Management,\(^\text{19}\) Mr. Notale and Mr. Whitlock lay emphasis on the key issue of latest information technologies for facilitating a culture of information sharing, relationship building and trust. They also highlight as to why many of the BPR practices in different forms have not been successful.

Mr. Mundai in his article entitled Knowledge Management - The Evolution of Man and Machine\(^\text{20}\) opines that the new business model in the Information Age is marked by fundamental, not incremental, change. Businesses can't plan long-term; instead, they must shift to a more flexible 'anticipation of surprise' model. Thus, it is impossible to build a system that predicts who the right person at the right time.

In their article entitled Knowledge Management: New Wisdom or Passing Fad ?, Mr. Parise and Mr. Henderson\(^\text{21}\) exhort that there has been a growing realization that investments in information technology haven't paid off in performance and too much emphasis on treating people as passive recipients
of technology and not enough emphasis on individual enterprise. The key to success is not just the system but what people make of it.

Mr. Mack, et al in their article on Knowledge Resource Exchange in Strategic Alliances\textsuperscript{22} point out that the strategic alliances are no longer a strategic option but a necessity in many markets and industries. Dynamic markets for both end products and technologies, coupled with the increasing costs of doing business, have resulted in a significant increase in the use of alliances. Yet, managers are finding it increasingly difficult to capture value from alliances. They present a model that describes the knowledge resource exchange between alliance partners. This model focuses on the different dimensions of knowledge resources and their associated value implications, as well as the different roles of the partner based on its position within an industry network. They argue that in order to capture and internalize knowledge obtained through an alliance, a firm must have an alliance learning capability. By applying this resource exchange model, it is possible to analyze the alliance strategy for each firm and to understand the alignment between the announced business strategy and alliance strategy for each firm. The findings suggest that what is important is not a particular alliance strategy, but an alignment between alliance strategy and business strategy.

In his working paper on Knowledge Portals and the Emerging Digital Knowledge Workplace,\textsuperscript{23} Mr. Joseph has brought out the fundamental aspect of KM viz., capturing knowledge and expertise created by knowledge workers as they go about their work and making it available to a larger community of colleagues. Technology can support these goals, and knowledge portals have emerged as a key tool for supporting knowledge work. Knowledge portals have emerged as single-point-access software systems intended to provide easy and
timely access to information and support communities of knowledge workers who share common goals.

The article viz., Linking e-business and Operating Processes: The Role of Knowledge Management\textsuperscript{24} by Fahey et al traces how the new business landscape ushered in by e-business has revolutionized business operations but has not integrated well with internal KM initiatives. Through the development of e-business focused knowledge, organizations can accomplish three critical tasks viz., (a) evaluate what type of work organizations are doing in the e-business environment (know-what), (b) understand how they are doing it (know-how), and (c) determine why certain practices and companies are likely to undergo change for the foreseeable future (know-why). Further, they take a process perspective and reflect upon the value e-business knowledge contributes in the enhancement of three core operating processes viz., customer relationship management, supply chain management and product development management. Understanding how e-business influences these core processes and the sub-processes within them, and then leveraging that knowledge to enhance these processes, is key to an organization's success in deriving superior market place results. The paper also highlights the central role KM plays in diagnosing and managing e-business-driven changes in organizations.

The article Making the Transition from Functional Cost Center “Big Brother” to Value Adding Key Team Member\textsuperscript{25} by Mr. Fahey et al illustrates the new environment confronting Management Accountants; raises pertinent issues, particularly from the new paradigm of a customer-focused, quality-driven, value-added organization; and has provided guidelines and suggestions in order to redirect the role of Management Accountants. In the past, particularly in the traditional MP/MS firm, Management Accountants have been perceived as monitors for upper management. Management Accountants have not
necessarily been viewed as helpful to others within the organization nor as adding value to what the organization does. Specifically, the new paradigm requires customer-focused information and systems that help the organization to redesign its work processes to meet its strategic intent. By reorienting toward measures of work processes aimed at reducing waste and adding value, Management Accountants become team players striving with other managers and workers trying to improve the work performed by the organization. Thus, in an intensely competitive global environment where timely and proper information provision can mean the difference between success and failure, Management Accountants assist organizations in delivering value-added products and services.

The article by Mr. Mirra on New Opportunities for Management Accounting in Supporting Value Creation provides an integrated approach to strategic planning, a process in which managers try to maximize rights of stakeholders, starting from corporate planning based on a few top priorities and following with a deployment of it to operating levels. Among different strategic objectives, one of the major ones is certainly the creation of shareholder value, either in terms of dividends paid or in terms of capital gained. Fundamental results of the study are that Management Accounting is going to be more involved in activities targeted to generate business growth, to optimize financial resources allocation, and to continue the cost control/reduction; the management tool-kit is widening and more complete professional skills are required of Management Accountants to adequately support shareholder value creation.

In the article Concept of Accounting as Value Creator: Issues, Possibilities and Ways Forward, Mr. Bakar seeks to present arguments that traditional ways of viewing Accounting as existing to perform scorekeeping, attention directing, and problem solving roles is neither helpful in elevating its
position nor useful in enhancing its importance in organizational functioning. He suggests that for Accounting to be relevant and its roles to be better appreciated, research and reform efforts done in Accounting must not be made in the name of improving or illuminating services it renders or in carrying out those functions. Rather, one has to contend Accounting to be more dominant and its contribution to be better valued, if it is viewed from the perspective of its contribution in enhancing value of the organization through stakeholders' value creation.

The article Meeting the Challenge: Management Accounting and Value Creation by Piero Mirra shows how managers create value by establishing and exploiting competitive advantage. Competitive advantage cannot be achieved by standing still; its achievement requires continual change and improvement. It is a challenge for Management Accountants to remain relevant in a period where observers expect that the Accounting function will shrink by more than half. The Management Accounting function must continue to evolve and help to build competitive advantage. Performance improvement gains can be made by using reporting and remuneration structures to shape the form and culture of organizations in line with the sources of value. The reward for responding to this challenge will be a central role for Management Accountants not only in the organizations of tomorrow but also in the Accounting Profession of this millennium.

2.4.3. Research Papers

The Research Report Blue Print for the 21st Century Innovation Management by the Business Intelligence (UK) argues that the foundation for a new economic order has been the one that rests on the value of human potential and systematically leveraged for the benefit of mankind. The challenge is to determine the integral linkage between human potential and economic
performance. This will be accomplished by creating a worldwide innovation, vision, and culture supported by innovation tools, techniques and metrics.

In their joint Research Paper entitled Eliciting Knowledge and Transferring it Effectively to a Knowledge-Based System, Mr. Brain and Mr. Mildred analyse, in depth, the knowledge acquisition bottleneck impeding the development of expert systems which is being alleviated by the development of computer-based knowledge acquisition tools. These work directly with experts to elicit knowledge and structure it appropriately to operate as a decision support tool within an expert system. However, the elicitation of expert knowledge and its effective transfer to a useful knowledge-based system is complex and involves a diversity of activities. This paper illustrates the complete development of a decision support system using knowledge acquisition tools.

The Research Paper entitled The Integrated Activity-Based Costing and Economic Value Added Information System by Mr. Roztock examines the implementation of an integrated Activity-Based Costing and Economic Value Added system, using a database approach. The proposed database approach allows the creation of costing and performance measure system which provides decision-makers with up-to-date, complete and reliable cost information. The steps for designing and implementing this integrated information system are illustrated with data from a real company. The advantages for calculating product cost information are investigated when a database is used to collect, store, retrieve and analyze data. Improvements in quality of product cost information, resulting from this proposed methodology, are also presented.

The Research Paper Creating Value with Internal Audit by Neumann has had a dual purpose. The first purpose has been to review the trends in internal auditing. The second has been to review the trends within the context of
a particular outsourcing case study. Two primary conclusions were drawn from the analysis. First, the internal auditor has an important role to play in future working more closely with the commercial business manager. The author contends that the review of trends and the case study appear to suggest that the emphasis in the future would be on high-value recommendations that facilitate organizational improvement in terms of business process redesign, reduction of cost, reduction of time in key business processes and enhanced profitability. Second, there are a number of new opportunities emerging for internal auditors. However, internal auditors will need to be proactive in order to meet the challenges ahead. Internal auditors expected to acquire new skills in order to remain relevant. The skills that need to be acquired include those relating to information technology, quality control and relationship management, to name but a few.

Dr. Bernard Pierce in his Research Paper *Simultaneously Managing Cost and Value* traces the evolution of new cost techniques during the last 15 years, especially in activity based costing. But the efforts made to put the ABC/ABM approach into practice have not been supported by a corresponding effort in theory building. Most of the literature is devoted for the computational side of the approach, and as a consequence, any homogeneity could not be realized in so called ABC. The hypothesis presented in this paper is that the clue to the redesign of a costing system lies in their dual nature. On one side, it describes resource consumption (using causality relations, traceability and responsibility); on the other side, through the product and services costing procedures it implicitly simulates the minimum value the firm is hoping to get from their customers. To be profitable, a firm must have costs lower than the value perceived by customers. Thus, if Management Accountants want to contribute to efficient management of firms, they need to design costing systems that are also consistent with the value chain of the firm. The only way to obtain such a result
is to move along from activity to business-process based costing. This new vision allows the author to suggest that the evolution of costing system design is driven by changes in value attributes and not by a search for solving technical difficulties.

Dr. Allenna Leonard in his Research Paper entitled Viable System Model: Consideration of Knowledge Management contends that individual and organizational knowledge is difficult to value and therefore, difficult to manage. He also looks at the management of knowledge from the perspective of the individual, the network and the organization using appropriate System Model which is powerful, descriptive and diagnostic tool in order to map management capacities and promote viability.

In his Research Paper on Developing Successful Knowledge Driven Organizations, Dr. Fang Zhao emphatically points out that the new knowledge created in the process of conversations and 'dialog' that surface assumptions result in creation of new meanings. These two hundred or so thoughts represent the developing mosaic of the "new" KM emerging from the process of BRINT Institute's communication with its virtual community of practice. As many of these thoughts turn the mainstream theory and 'best practices' on their head, they are aptly characterized as 'out-of-box thinking'.

2.4.4. Case Studies

2.4.4.1. Knowledge Management at Hewlett-Packard

While information gathering might include electronic means or originate with people, the process of converting information into true knowledge almost and always involves people. Who are they? Who do they interact with inside of
the organization as well as outside? How does their shared knowledge flow through the organization?

From the beginning, co-operation, trust and loyalty have been the parts of the fabric of the company. A current employee turnover rate of barely a quarter that of the company's high tech competitors suggests the durability of these values. Permission to experiment and fail — another stimulus to knowledge creation — also characterizes HP's culture. In fact, failure is encouraged: uninterrupted success raises suspicions of playing it safe, not pushing the limits with enough courage and imagination. HP's open offices at all levels of the company foster knowledge exchange, and its small, autonomous business units are free to develop new ideas without having to negotiate the twists and turns of a complex hierarchy.

In many ways, Hewlett-Packard is a model knowledge-intensive organization, wherein the same culture that supports informal, local knowledge sharing can impede efforts to exchange knowledge more widely and systematically. A unified approach to KM goes against the grain of a company that has a long-standing tradition of autonomy, where the local "exception" is the staunchly defended rule. A more global knowledge strategy has become necessary, though. Fierce competition increases pressure to develop and use the best possible knowledge, and exposes some of the limitations of the old informal model. The company has grown larger and more complex, creating both new knowledge-sharing potential and new problems. Finally, the knowledge issue has changed. In the past, knowledge and information were scarce resources — getting more was the goal. Today, information technology — most notably, the Worldwide Web — has created a glut of information; the problem now is separating what we need from the torrent of useless or irrelevant content. The scarce resource is attention, not knowledge. The new KM challenge is how to
locate the right knowledge and screen out the rest—how to combine access and selectivity.

Although HP’s traditional culture contributes to some of these problems, trying to transform a culture that has been productive, resilient and satisfying is not the way to solve them. In keeping with the company’s character, new roles are developing organically to deal with new knowledge concerns. Individuals with relevant interests and abilities are beginning to address these issues, and HP’s tradition of job flexibility, which has long allowed employees to negotiate new roles not represented by their official titles, makes it possible for them to redefine their work with a minimum of bureaucratic fuss. The organizational message on KM—don’t wait for top-down sponsorship—also supports this emergent knowledge strategy.

Though the new knowledge roles are just beginning to define themselves, they do seem to fall into a number of clear categories. Several of them respond to the information-overload-attention-shortage problem. Knowledge filterers and interpreters scan technology and market information, searching for important material, which they then summarize for others in the company, and acting like internal journalists. Knowledge miners similarly rescue nuggets of valuable content from the stream of mostly irrelevant information. Knowledge brokers and context managers focus on connecting the right knowledge with the right people. In most cases, people also involved in other projects take on these tasks. Both new roles and technology are being used to expand the range of collaboration—trying to bring some of the features of localness to disperse or global groups. The Hewlett-Packard experience shows that no universally valid knowledge plan can be devised. Companies need to work with the particular strengths and weaknesses of their existing organizations. Knowing whom you is an essential part of knowledge work.
2.4.4.2. Knowledge Management at Ernst and Young

The role involved overseeing the processes and technologies of the firm that related to knowledge. The role of Knowledge Process Committee was to recommend both topics on which knowledge was necessary and means by which knowledge could be integrated into E&Y's consulting practice. The U.S E&Y firm also set up a Knowledge Committee to address KM issues that cut across consulting, audit and tax. Shortly thereafter, a Global Knowledge Committee was established to address issues in the entire E&Y organization worldwide.

At the same time, the Center for Business Innovation was beginning substantial research into KM topics. Together with the Strategic Issues Forum, Center's researchers held three conferences on KM, all of which were well attended. The Center also organized a multi-client research program, called Managing the Knowledge of the Organization. At the same time, E&Y was also organizing a consulting practice around KM. About 20 consultants who had either expertise or strong interest in KM issues were identified and a "Knowledge Management Network" was formed. Several client engagements were secured in which KM played a key role. Most members of the network felt that it was very helpful in client work to be able to learn from work done to manage knowledge internally.

Activities of the Center for Business Knowledge: The Center for Business Knowledge (CBK) quickly expanded its functions and became critical to E&Y knowledge strategy and tactics. By the end of 1996, the CBK would have more than 100 professionals. It included a library, a call center for answering consultant requests and a database of consultant skills. The CBK spent considerable time identifying and tracking subject matter experts, and ensuring that they were present in sufficient number on industry and client teams. A network was organized for each key domain of knowledge within the consulting
practice. Some regions also had "knowledge focus groups" on narrower topics such as activity-based costing or shared corporate services. Each network met occasionally face-to-face and had online discussion. Key to the success of the networks were a group of facilitators. Each network was assigned to a person to capture the knowledge from particular engagements, to prompt consultants to add their own learning, and to edit and prune the discussion and document databases. There were issues remaining in terms of the culture for KM and use.

Senior management support for knowledge as a key competitive advantage was high and high levels of resources were being directed at KM. In terms of E&Y consulting practitioners, the buy-in to KM had been good in general, but there were still weak spots. The E&Y consulting culture was traditionally based on pragmatism and experience rather than on conceptual orientation; while the culture was changing, there were many consultants who had entered the firm and prospered under the old model and found it difficult to aggressively pursue structured knowledge in systems and documents. The old culture had also placed a strong emphasis on highly structured methodologies, and the new approach was to provide more background knowledge to allow consultants to improvise an approach to suit the particular client situation. This was also a difficult adaptation for less conceptually oriented consultants. One key question among E&Y knowledge managers, then, was how rapidly to proceed in trying to change the receptiveness to a strong knowledge orientation. One key means for changing the culture was embedding knowledge orientation into the firm's performance evaluation process. Another challenge at E&Y, as in virtually all organizations adopting KM, was assessing its progress and whether the resources devoted to it were justified. The CBK in particular had made numerous attempts to measure its own effectiveness and that of KM in general. It assessed, for example, the number of telephone and computer-based requests for its services, and tried to track sales or engagement wins in which knowledge use
had been a critical factor. Knowledge management had apparently been successful in consulting and the next task was to extend it into other E&Y practices and geographies. Progress was being made in both areas. The CBK was beginning to support the U.S audit and tax practices, particularly in sales efforts.

2.4.4.3. British Petroleum - The Company

At a time when bureaucracy is a dirty word, it's easy to forget that a bureaucracy historically served two essential purposes - it connected the leaders of a corporation to their businesses, and it allowed the businesses to exchange critical knowledge. Have times really changed? Is it possible to have it all - a flat, decentralized, global corporation that excels at learning and has leaders who are deeply engaged in helping to shape the strategy and drive the performance of the businesses?

2.4.4.3.1. The Virtual Team Network and Intranet: The aim of this computer network is to allow people to work cooperatively and share knowledge quickly and easily regardless of time, distance and organizational boundaries. The home pages serve a number of purposes. There are sites where functional experts describe the experience they have to offer. There are sites for sharing technical data on the muds used as drilling lubricants and for sharing contacts and information about programs and processes available to reduce the amount of pipe that gets stuck in wells. There is a site where people concerned about how to get computers to handle the transition to the year 2000 can exchange ideas. Every technology discipline has its own site. The general managers of all the business units in BP Exploration and Production (BPX) have their own home pages, where they list their current projects and performance agendas. "If it's easy for people to connect, communicate and share knowledge, they will do it. If it isn't, they won't," To make it easier, BP is experimenting with a variety of approaches - making videos that can be seen on the network; creating electronic
yellow pages that can be searched in a variety of ways; and encouraging people to list interests, expertise, and experiences that they are willing to share with anyone wishing to contact them.

During the recent development of the Andrew Oil Field in the North Sea, BP used the virtual team network to pass on lessons from the revolutionary project in real time. BP and its contractors and suppliers cooperated to an unprecedented degree to figure out radical ways to cut the cost and time of the project. Using the virtual team network, the project's participants briefed other BP units, partners, and contractors in places as far away as Alaska and Colombia on how they made critical decisions.

2.4.4.2.2. Benefits of the Network: Some of the benefits of the virtual team network are easy to measure the following.

- Drop in the person-hours needed to solve problems as a result of improved interactions between land-based drilling engineers and offshore rig crews,

- Decrease in the number of helicopter trips to offshore oil platforms,

- Avoidance of a refinery shutdown because technical experts at another location could examine a corrosion problem remotely, and

- Reduction in rework during construction projects because designers, fabricators, construction workers and operations people could collaborate more effectively.

2.4.4.4. Knowledge Management at the World Bank

The World Bank is an international institution owned by the governments of the world that lends between $15 and $20 billion a year to support projects designed to promote economic growth and reduce global poverty. Like many other global organizations, the Bank has come to understand that its effectiveness
depends on its ability to develop, capture and share knowledge effectively. Though the money it lends is a major asset, so is its unique knowledge of global development, economic management, education, finance and other subjects. In a knowledge economy, the Bank's knowledge assets may in fact be more valuable than its cash. Under the direction of Stephen Denning, Program Director for Knowledge Management, the World Bank is developing a strategy and system to create, organize and apply knowledge. Using the World Wide Web and Lotus Notes to connect members of communities of practice around the world and more importantly, fostering the habit of knowledge collaboration, the Bank hopes to make cutting edge knowledge available internally and to its clients. Although the project is improving knowledge efficiency, Denning emphasizes its strategic aim. He sees KM as a way of redefining the organization, transforming the Bank into an organization whose main "product" is knowledge, much of it freely shared with clients, partners and others. Speaking at the Knowledge Advantage conference, Denning offered a compelling description of the real-life challenges that major KM initiatives are likely to face, and the decisions and chance factors that can make or break them.

At the World Bank, building support for a KM strategy provided the first big challenge. Charts and rational argument had no effect on skeptical managers - their efficacy was zero. Direct dialogue, though more promising, had obvious practical drawbacks in a large global organization. According to Denning, what works are stories. This one-sentence narrative, rather than traditionally presented plans and concepts, convinced managers of the importance of developing knowledge strategy for the Bank. In June 1995, a health worker in Kamana, Zambia, logged on to the CDC website in Atlanta and got the answer to a question on how to treat malaria. The initiative came up against a number of obstacles.
Entrenched and skeptical senior and middle managers and skepticism among participants made getting support for the project a difficult task and increased the danger of minor setbacks - opponents of new initiatives are always looking for evidence of failure. Recent downsizing had affected morale and reduced people's capacity to take on new tasks, adding to the difficulty. Also, existing legacy information was "a mess," in Denning's words, and therefore, not easily incorporated in a shared system. Finally, "managerial musical chairs" during the course of the project caused certain amount of confusion. In other words, the KM group had to deal with most of the obstacles that knowledge initiatives in large organizations typically encounter. The initiative has expanded from its 1996 pilot to a project that involves all sectors of the organization. It has resulted in reduced cycle times, increased re-use of knowledge and less rework. It has also led to improved client access to Bank knowledge. Overall, Denning identified seven key success factors. They are as follows.

- Having a simple, compelling vision (of the World Bank making its knowledge available to clients and others around the world),

- Building a robust coalition (six upper-middle managers),

- Getting the boss on board,

- Defining knowledge management activities clearly,

- Having an adequate budget,

- Outlasting the opposition (in other words, persistence), and

- Learning from other organisations.

2.4.4.1. Some Lessons Learned

- The decision to develop the project in the IT unit was one of the clarifying "blunders" that suggest what should have been done instead.

- Human issues and knowledge content require more attention than the systems used to store and provide access to the content.
• The right knowledge, not the most knowledge, is what counts, and nuggets of creativity are easily lost in mountains of content. Finding the right knowledge in part means distinguishing between valid and invalid concepts, but capitalizing on fresh ideas is even more important.

2.4.4.4.2. Challenges

The toughest challenges the knowledge group faces are cultural and organizational, not technological. Denning estimates that 80% of the job of managing the Bank's knowledge involves human brainpower and human interaction. The reluctance to ask for knowledge, not reluctance to provide it, stands in the way of effective sharing at the World Bank. Another important challenge is finding the best way to nurture communities of practice. Denning thinks they are the only effective source of best-in-world content, but helping them thrive is difficult. Added to the problem of sharing knowledge across organizational boundaries is the fact that knowledge is fluid and untidy and therefore, does not always fit existing communities. In the fall of 1997, for instance, Indonesia requested expertise in private sector vocational and technical training. Because, the appropriate knowledge resided partly in the Education community and partly in the Social Protection community, fulfilling the request was difficult. Offering external access to World Bank knowledge poses its own set of problems. Copyright and confidentiality issues and the question of how (or if) the Bank should charge for knowledge will need to be dealt with, and efficient methods of communicating in multiple languages must be developed. Redefining the organization as an essentially open knowledge provider will have an important and partly unpredictable internal impact. As these challenges imply, the risks of the new KM strategy go beyond the cost of the initiative. Real change entails real risk. Denning frames the issue this way: "Is it riskier to implement global knowledge management or not implement it? Doing it involves risk, but the Bank won't survive if it isn't done".
2.4.5. Books

In his book entitled Knowledge Management and Business Model Innovation, Dr. Yogesh Malhotra has characterized the current era as increasing digitalization of business enterprises in a global interconnected knowledge economy. With waning euphoria about the first wave of digital e-business enterprises and a sobering dot-com stock market, business model innovation is being recognized as the key enabler that can unleash value creation for new digital enterprises. Evidently, most such new age enterprises will be enabled by Internet-based and www-based communication and information technologies. However, enterprises that are 'built to last' and 'built to work' will increasingly need to emphasize not only Wall Street analyst valuations but also sustainable value-creation in terms of innovative and sustainable customer value propositions. In contrast to traditional factors of production, increasingly, knowledge assets and intellectual capital are expected to play a dominant role in determining both valuation and value-creation capabilities of most such new age enterprises. Not surprisingly, KM for business model innovation is anticipated to be the mantra for survival, competence and success of pure play. New enterprises as well as relatively traditional brick-and-mortar enterprises faced with the challenge of transforming their business models into and beyond click-and-mortar companies.

The first section of the Book discusses selected frameworks that can be used by managers and researchers for developing better understanding of KM as an enabler of business model innovation for digital and knowledge-based enterprises. Related discussions focus on KM for e-business model innovation, knowledge assets and organizational learning, strategic perspectives on KM, and use of information technology for intelligent mega-business.
The emphasis of the second section is on transformation of post-industrial organizations and transformation of post-industrial paradigm of work toward knowledge-based organizations and knowledge work that characterize innovative business models of the digital economy. In this section, distinction between information management and KM is explained, and themes of virtual organizations, virtual teams, communities of practice and mobile work are discussed along with relevant case studies.

The focus of the third section is on providing a comprehensive perspective of valuation of knowledge assets and intellectual capital for organizations contemplating or implementing innovative business models. Discussions and case studies in this section relate to valuation of knowledge assets and intellectual capital and are presented in the context of national economies, corporations, virtual organizations and inter-organizational partnerships.

The last section provides in-depth appreciation of the organizational, behavioral and technological aspects of KM as the enabler of business model innovation. Emphasis of this section is on developing better integration of tools and technologies of KM with the philosophical, behavioral and organizational underpinnings of successful business model innovation as demonstrated in exemplary practitioner case studies.

In their book Future of Management Accounting in the 21st Century, Mr. Brain H. Maskell and Mr. Bruce L. Baggaley argue that the change is needed in the methods, approach and functions of Management Accountants in most Western companies chose to be relevant and useful in these increasingly challenging times. The focus of Management Accounting needs to move from cost to value creation. The planning and performance management must start with the needs of the customer. The role of the Management Accountant must
move from collector and presenter of financial data to team-member and change agent. Management Accounting systems must move from transaction-heavy inspection and reconciliation engines, to lean and vital providers of business insight. While this emphasizes lean manufacturers, the principles are applicable to a wide range of organizations.

A review of earlier works, as presented above, reveals that they laid emphasis on the following major aspects.

- Characteristics of New World of Business and use of Information and Control Systems,
- Capability to understand the problems given the changing environmental conditions,
- Developing interpretive flexibility based on diverse and multiple interpretations of the future,
- Justification for investments in e-business architectures to deliver novel, sustainable and competitive viable customer value propositions,
- Re-conceptualisation of KM in rapid pace of discontinuous changes,
- New valuation assessment techniques for IRM,
- Successful KM strategies combine the power of IT with creative and innovative capacity of people,
- Better and accurate understanding of the strategic relevance of knowledge and KM is expected to contribute to more effective e-business strategies that result in sustained business performance,
- The focus is not only on finding the right answers but on finding the right questions,
- Better and more accurate understanding of KM as enabler of information strategy for the e-world of business,
• Buying new information technologies does not make an organization better at managing knowledge, and

• Central role KM plays in diagnosing and managing e-business-driven changes in organizations,

From the above summary of literature survey, it is obvious that the main theme of research and survey at global level has dealt with human element involved in the evolution of KM and its linkage to the emerging new business e-model. Paralleled, there has been developments in measuring stakeholder value. However, no attempt appears to have been made to examine the role of Management Accountants in the emerging Knowledge Economy. Thus, the present study attempts to provide the linkage between knowledge economy, Management and the Management Accountant. In addition, this attempt is also towards mapping the role of various organizations including governments in inculcating KM culture in all corporations and government bodies towards transparent governance. The Researcher is of the firm view that such governance would put an end to various social disorders in the country saving the nations crores of rupees besides trimming the organization levels.

2.5. Objectives of the Study

The primary objective of this Research is to study the value-adding role of Management Accountants in the Knowledge Economy. In other words, it is to examine the extent to which the Management Accountants are able to add value (to their organisation) in the knowledge economy which is characterized by rapid changes and fast technological developments. Keeping this as the primary objective of the present study, the other important and supporting and/or allied objectives of this study have been crystalised in specific terms as presented below.
i. To arrive at a rationale for Knowledge Investment,

ii. To dispel skills needed to meet the challenges of KM,

iii. To analyse disclosure practices to stakeholders about the companies’ plans towards constant up-gradation of KM practices,

iv. To evaluate the framework for acquiring and retaining competitor knowledge,

v. To recognise the human element in KM and suggest means towards continuous nurturing,

vi. To identify the role of government in the matter of disclosure framework, and

vii. To suggest the measures as to how Management Accountants can play a positive role in adding value to their organisation.

2.6. Scope of the Study

The study primarily aims at analyzing and evaluating the role of Management Accounting professionals viz., value adding role in the economy based on knowledge. A number of changes are taking place in the economy and the Management Accountants are expected to keep pace with these changes and developments, to make available accurate and timely financial information. Though the digital technology has made the tasks of collecting information and passing it on to the decision-makers faster, it has also led to the proliferation of data. In view of this, all the facets of financial data going through the processes such as filtering, sorting, compiling, analyzing and disseminating in such a manner so as to add real value to a corporation have become daunting tasks by converting Data to Information to Knowledge. In this background, the scope of the present study extends to cover various dimensions of knowledge economy and whether there exists a role for Management Accountant in the context of knowledge economy.
The required and relevant data for the present study have been collected from both the primary and secondary sources. Primary data are collected through the administration of well structured questionnaire and also through the personal contacts. In order to make the data more reliable, counter checks are made with those connected with the corporate world. Data are also tapped from such secondary sources as (a) websites of consulting organizations of global repute, (b) books, (c) survey reports, and (d) articles which appeared in the relevant journals-archives, etc.

With a view to identify the extent to which the organizations are aware about KM and whether there exists a role for Management Accountants in the context of Knowledge Economy providing the desired information to the managerial personnel, a survey was conducted. The focus of the survey was also to understand how the KM has been exploited by the Management Accountants for strategic advises besides championing for the KM implementation process and thereby deriving benefits therefrom. 26 organisations that have, or are planning to implement, a KM strategy participated in this survey (Annexure - 2.1). The survey investigated the scope of effective implementation of a KM strategy in the workplace of these front-line organizations and the role of Management Accountants to support implementation of KM and continue to support DSS framework using extensive knowledge base.

The survey was conducted during January-April 2003. The focus group included Managing Directors, Chief Executive Officers, Public Relations Officers and Chief Financial Officers with specific responsibilities for KM in 26 organisations with turnover exceeding Rs 2,500 millions a year. The selection of the respondents was based on the size of the companies which have the greatest
need to implement KM initiatives. These companies have access to the required technical and financial resources to do so and potentially can reap the greater benefits. The key objective was to identify the collective knowledge of the organisations and the measures taken to successfully implement KM within the organization in an effort to improve the bottom line on a continuous basis. The break-up of the respondent-companies is presented in the following table (Table - 2.1).

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Industry</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Information Technology</td>
<td>6</td>
</tr>
<tr>
<td>02.</td>
<td>Chemical Oil and Food</td>
<td>4</td>
</tr>
<tr>
<td>03.</td>
<td>Retail and Distribution</td>
<td>2</td>
</tr>
<tr>
<td>04.</td>
<td>Electrical and Electronics</td>
<td>2</td>
</tr>
<tr>
<td>05.</td>
<td>Business and Finance</td>
<td>1</td>
</tr>
<tr>
<td>06.</td>
<td>Telecommunication</td>
<td>1</td>
</tr>
<tr>
<td>07.</td>
<td>Pharmaceuticals</td>
<td>1</td>
</tr>
<tr>
<td>08.</td>
<td>Manufacturing and Others</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

The method of analysis adopted in this study is purely analytical. In the course of such analysis, statistical tools have been used to analyse the data collected from different sources to arrive at conclusions in line with the scope of study.

2.8. Chapter Scheme

The present Study has been presented in nine chapters as indicated below followed by a brief description.
I. Knowledge Economy - An Introduction

II. Research Design

III. The Measurement Gap (The Baseline for Improvement and Adding Value)

IV. Value Adding Processes (Leveraging the Knowledge Potential)

V. Creating A Knowledge Enhancing Culture (Ways of Improving Knowledge Creation and Sharing)

VI. The Momentum of Knowledge Management (Drivers behind the Knowledge Management Movement)

VII. Knowledge Skills and Leadership (Setting the Direction and Gaining Commitment)

VIII. The Technology Infrastructure (Facilitating Knowledge Sharing)

IX. Major Findings, Suggestions and Conclusion (An Agenda for Action)

Building a knowledge-based business is a journey. Many organisations are apparently just starting this journey - either they have recently created or are planning to create KM teams. The focus of KM is a systematic approach to key organisational knowledge processes including knowledge creation, gathering, storage, diffusion and use. There is an evolving “community of knowledge practice” that pools their expertise and develops a common language to help move the knowledge agenda forwards. All these aspects are discussed in the first chapter.

The details relating to the Need for the Study, Importance of the Study, Scope of the Study, Review of Literature, Objectives of the Study, Limitations of the Study, Plan of the Study, etc., are presented in the second chapter.
Measurement is the area of KM that shows the largest gap between management expectations and actual achievement. Traditional Financial Accounting measures do not represent the true value of knowledge based companies. Whatever the ambiguity in numbers, successful KM programmes do demonstrate clearly defined links to the value proposition - its bottom line being a contribution to business benefits. The third chapter examines, in detail, the need for measuring and identifying intangible assets, limitations of Traditional Accounting, emerging new measures of success, besides justifying investment in Knowledge Management.

There are three main process foci - a focus on how knowledge supports core business processes identifying and sharing existing organisational knowledge and processes for knowledge creation. Organisations need to develop KM processes at three levels. The top level is a co-ordinating strategic one. The next level is the specific tools and methods that underpin each major process. The third level is the skills and techniques to perform knowledge work. A key function of knowledge processes is to extend better support to knowledge workers in their day-to-day activities viz., knowledge strategy and policy. An attempt has been made in the fourth chapter to build up knowledge value chain from identification, creation, diffusion and management of knowledge based business processes.

Creating a culture where knowledge is valued and shared effectively is one of the most difficult challenges faced in practice. Appropriate cultures are those that engender change, learning, innovation, openness and trust. They also recognise and reward people for their knowledge contribution. Physical settings, co-location, attention to office design, the provision of ‘talk rooms’ and flexible furniture play an important role in creating conditions for exchange of informal knowledge. The fifth chapter dwells in detail about the emergence of new
structures and new cultures and its impact on networking, connections, communications, and conversation. It also traces the changing role of Management Accountants in the implementation of knowledge management.

The important decisions that an organization must make in establishing its KM system are to decide with whom to share, what to share, how to share and when to share. The main shift will be a move from a predominantly inward looking perspective of better KM within organizations to an external focus in which organizations seek better ways to productionise and commercialise it. Companies are responding to changes in their environment by introducing new organizational arrangements and new technology for producing their outputs. Besides laying foundations of KM with reference to Business Process Re-design, a detailed in-depth analysis has been attempted in the sixth to the evolution and foundations of Management Accounting and linking the same with the drivers of knowledge management.

Apparent in all successful cases was the visible evidence of knowledge leadership, with one or more people actively championing the knowledge agenda. Many companies are now creating the post of Chief Knowledge Officer (CKO) or one with a similar title. Several cases demonstrated that middle-up-down leadership and leadership development programmes to create the necessary changes in perspective. The seventh chapter addresses the need for, and role of, a CKO in creating a KM architecture knowledge teams. As organisations become more knowledge-based, new knowledge roles are emerging and the roles of existing knowledge workers are changing. Some of the new roles encountered were knowledge editors, navigators, analysts and brokers. However, explicit linkage between knowledge activities and learning requires development in many organisations, such as through 'lessons learned centres'. The new roles and skills for the knowledge-based company,
implications of shift to learning in the learning organizations have been addressed in detail in this chapter.

Knowledge-based companies rely heavily on a good technological infrastructure. Collaborative technologies such as, Intranets and Group Ware which are emerging as the dominant technologies for effective knowledge creation and sharing of knowledge-based systems are not new. To exploit technology to the full, organisations need to give due attention to human and organisation factors. Extensive user involvement, active facilitation of computer conferences, training and coaching are the key factors of success. Knowledge based systems, Knowledge discovery tools and Knowledge mapping and related tools have been prescribed for ease of KM system implementation. These aspects are evaluated in detail in the eighth chapter.

The Management Accountant, in the next decade, will no more be an isolated or back-room analyst, he or she will be the pivot of the communication system in the organization, thus supporting and facilitating both goal congruence and continuous improvement. The Management Accountant of the next decade will be involved in all stages of managerial decisions, not just in a measurement role, not just in a support role, not just in a planning role, but also as an analyst, a system and process designer, a communicator, and an important actor in the change management process. What is needed to make a good Management Accountant is good analytical skills combined with ability to understand all business processes and being a good team player. To excel in the profession, in addition to the above, one needs to be abreast of emerging and subsiding trends and evolve measurement and reporting metrics to reflect the early warning signals adequately in advance. We believe the future is bright. With costs coming to the fore in organizations worldwide; thanks to global slowdown, cost management profession has caught management attention the
world over. India is definitely an attractive destination for services and Management Accounting professionals will have a major role. The role of Cost Accountant is much beyond “Accounting”. It is one of performance analysis, management reporting and decision support, all of which necessarily needs application of human mind. Besides these, the findings of the study and also suggestions are presented in the last chapter.

2.9. Limitations of the Study

Indian experiences being not independent by and large dictated by MNCs entrenched in Indian scenario. Even the role of Management Accountants has not emerged to the extent felt in developed countries despite similar competitive environment. This is primarily due to the fact that Management Accounting was internal to the organisation and not compelled by any external disclosure practices. Therefore, the primary focus was derived from the experiences of developed countries and hence, the outcome of the conclusions arrived at has a slight aberrations to this extent. Despite this limitation, the experiences have been modulated, as far as possible, to the existing scenario obtaining in the developing countries.

Notes and References


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