MAXIMIZING RETURN ON INVESTMENT (ROI) IN A GLOBAL MARKET: CHIEF KNOWLEDGE OFFICER (CKO) ADDING VALUE BY CONNECTING PEOPLE, TECHNOLOGY AND PROCESSES

M. M. Nadeem
Program Lead: E-Business -Department of Management, Marketing, and E-Business,
School of Business & Management, National University
3031 Tisch Way, 100 Plaza East, San Jose, California, 95128, USA.
Email: mnadeem@nu.edu

ABSTRACT:

The objective of this study is to provide organizations with a pragmatic understanding of how the role and position of Chief Knowledge Officer (CKO) is connecting people, technology & processes in a competitive environment to achieve maximum return on investment (ROI) ahead of the competition in a global market. The main research question addressed by this study is whether the role and position of a CKO has an effect on the outcome of the return on investments, and specifically whether the CKO affects the process of organizational structure. Various issues are considered including, what the concept of knowledge management (KM) entails in a growing knowledge economy, and what the KM trends are in the global market? An in-depth review of theory, research, and practice is undertaken to understand the current organizational structure with the CKO's developing role and position. The study also explains how the strategic gaps between technology, and knowledge processes, could be connected in strengthening the organizational business model. Five years of KM research, case studies and surveys, and interviews of KM leadership from corporations are used to provide real world understanding of the value add of the CKO's to the organization's bottom-line. The study also considers the effect the changing competitive environment has which includes an investigation of the reasons why the global market can and should support a CKO in the organizational structure. Specifically, this study considers the skills and competencies of CKO as a leader and manager in the 21st century. This study investigates whether the current global market offers sufficient accommodation to the CKO role and position. Lastly, this study investigates how information technology applications and KM systems and strategies can support the CKO strategic role and position in strengthening both the tangible and intangible benefits of KM to the organization.

Keywords: Chief Knowledge Officer, Return on Investment, Knowledge Management System, Customer Intimacy, Product Leadership, Operational Excellence, and Business Intelligence.

1. INTRODUCTION:

The knowledge economy has become a reality for many organizations worldwide. Knowledge can be defined as an understanding gained from experience (Weidner, 2002). Knowledge Management (KM) may simply be defined as doing what is needed to get the most out of knowledge resources (Becerra-Fernandez; Gonzalez; Sabherwal, 2004). KM has become embedded in the policy, strategy, and implementation processes of worldwide corporations, governments, and institutions (Malhotra, 2005). KM is an exciting concept and can provide a platform for the integration of many disciplines – human resources (HR), and information technology (IT); process re-design and content & information management; strategic planning and corporate learning. All play a part in creating KM environments. Identifying KM activities with real business benefits, the leadership to implement calls for an unusual mix of skills (TFPL, 2005). Earl and Scott (1999), Bonner (2000), and Abell and Oxbrow (1999) attempted to identify competencies and skills that KM leadership or those charged with implementing a KM vision need. The name Chief Knowledge Officer (CKO) refers to the persons responsible for the development of a knowledge management strategy closely linked to the objectives of an organization, the marketing of information sharing, the management of disseminating knowledge projects within an organization, and the related technological infrastructure management (CKOonline,

2005). CKOs are springing to life in public and private sector organizations addressing a perceived unmet need to capitalize on knowledge-based assets. They possess a different mix of hard and soft skills (Neilson, 2001).

To provide new insights, new perspectives and a new understanding into the dynamics of knowledge-conscious management and its potential for improving business performance and profitability, a group of twenty of the world's leading knowledge executives developed a 'knowledge proposition' during the sixth annual Chief Knowledge Officers (CKO) Summit held in Dublin, Ireland in October, 2003. In this proposition a knowledge framework was presented. It maps the focus of knowledge in terms of the three elements – expertise, information and ideas, and the dimensions of intervention – people, technology, and processes. Together this 3 by 3 matrix provides a map for planning, decision and actions. The knowledge proposition states that: 'Significant additional stakeholder value and competitive advantage will be derived if the expertise, information and ideas of employees, partners and customers are continually developed and used in all business and decision-making processes'. Based on the proposition, the study predicts that the key to competitive advantage is a visionary leadership in KM, where synergy is achieved by effectively integrating: People, Technology, and Processes, Fig.1:

Figure1: Knowledge Management *Synergy* through people, technology, and processes (TFPL, 2005).

Based on the theory and research, the study envisions a future in which the discipline of KM and the role and position of CKO help make the processes and techniques explicit. Although CKO has to facilitate knowledge creation, sharing, and innovation across the organization to achieve its strategic objectives, the real sign of success, will come further down the road, when KM and the role and position of CKO become completely integrated with organizational functions and fully aligned with the business objectives of the organization. At that point, KM and the role and position of CKO will not be an add-on, but will be indistinguishable from the process of running an organization in a global market. In that sense, the role and position of CKO will be gaining its functions at a much more sophisticated level.

The sections of the study include: scope and limitations, methodology, data collection, analysis and findings, conclusions, acknowledgement and references.

2. SCOPE AND LIMITATIONS

Given the limited number of published and available data on the role and position of the CKO, the study is based on the KM research, reports from the recent KM Summits and the CKO Summits, and the published real-world examples from the corporations that had recently recruited the services of the

CKOs. Although CKOs are nurturing knowledge economy employees in exchanging knowledge across all the functional areas of the business by using technology and evolving processes, the study is limited by a lack of the full spectrum of the available data on the evolving nature of the KM leadership.

3. METHODOLOGY

The research methodology for this study drew upon content analysis research procedures and applied them to KM and the evolving role and position of the CKO. Qualitative research involved non-quantitative methods of data collection and analysis (Lofland & Lofland, 1984). The study involves a subjective methodology and the researcher as the research instrument. The qualitative research methodology is based on description, interpretation, narrative verification and evaluation. In the present study the researcher's ability to interpret and make sense of what was observed was critical for an understanding of a social phenomenon, KM and CKOs role and position. In this sense, the researcher is an instrument in much the same way that a socio-gram, rating scale, or intelligence test is an instrument for other researchers (Leedy & Ormord, 2001). In researching qualitative content analysis for gathering information, three inter-related procedures were found to be an appropriate and effective method to obtain and analyze the specific data desired. The primary data was collected from published academic literature and articles on the topic of KM and the CKO. The secondary data was collected through published KM case studies, surveys, and interviews from public and private sector CKOs. Finally, the research design relied on the published reports from KM Summits, and the CKO Summits.

4. DATA COLLECTION, ANALYSIS, AND FINDINGS

The importance of managing knowledge as the critical resource for sustainable competitive advantage in the information age is unwavering. Knowledge has become the key resource, for a nation's military strength as well as for its economic strength (Drucker, 1994). Bradley (1996) envisioned technology that facilitates the speed at which knowledge and ideas continue to proliferate. As Bontis (2001) pointed out, what is questionable is whether or not an organization's senior executives perceive the need, early enough, to assign formal accountability to it. Besides, effective KM is not about making a choice between software vs. wetware and technical vs. social issues (Stewart, 2002). As Alavi and Leidner (2001) noted, that the focus should be to enable individuals to enhance their personal areas of knowledge so that they can apply them to best pursue organizational goals. Besides, considerable knowledge continues to reside within the minds of individual members of the firm (Argote, and Ingram, 2000). As Daven Port and Prusak (1998) highlighted, the most vital resource of today's enterprise is also the collective knowledge residing in the minds of an organization's customers, suppliers, and vendors.

Because KM is eighty per cent related to organizational culture and human factors, and twenty per cent related to technology as noted by Becerra-Fernandez; Gonzalez and Sabherwal (2004), it is critical to understand the implications of KM leadership on the organization. Furthermore, learning how to manage organizational knowledge has many benefits; including leveraging core business competencies, accelerating innovation and time to market, improving cycle times and decision making, strengthening organizational commitment, and building sustainable competitive advantage. Recent research by Earl and Scott (2001) indicates that the growing popularity of KM is reflected in the fact that more companies are employing CKOs. Unlike the Chief Information Officer (CIO), whose task is to oversee the deployment of Information Technology (IT), the CKOs job is to oversee the deployment of IT; maximize the creation, discovery and dissemination of knowledge in the organization. From the Bontis (2001) survey, forty-seven per cent of the headhunters predicted that CKOs recruited would be placed primarily in high-technology industries where knowledge-intensive

work is at premium based on their working experience in IT. Shekawat (2002) noted that playing a role that is increasingly becoming critical; CKOs are the driving force behind KM initiatives within today's organization. For KM leadership role and position, Adams (2001) outlined wide-ranging skill sets. They combine IT expertise with a feel from the cultural and interpersonal factors that facilitate knowledge transfer. Furthermore, CKOs unite a pragmatic business sense with a visionary belief in the KM. Key CKO skills include: business acumen; visionary zeal, interpersonal skills; and technical knowledge. Bontis (2002) also envisioned five perspectives that a CKO must embrace to be successful: CKO as knowledge sharing icon; CKO as trust steward; CKO as total trainer; CKO as technology expert; and CKO as number crunching accountant.

Storck and Hill (2000) reported that at Xerox Corporation, a strategic community of IT professionals, involving frequent informal interactions among them, promotes knowledge sharing. Because, at the core of Xerox's heritage of innovation, is a deep understanding of how people, processes and technology interact with each other in the creation of great work (Business Wire, 2002). Sveibly (2000) also reported that the intangible 'Assets Monitor Framework' at Xerox recognizes the importance of examining intangible knowledge assets instead of focusing only on financial or monetary assets. Assessment of the value of knowledge is one way of attributing a tangible measure of benefits resulting from knowledge, which is often intangible (Sullivan, 2000). Tiwana (2002) suggested that in employing the 'Balanced Scorecard' for KM assessment- customer, financial, internal learning and growth perspectives are also to be used in a series of four steps, performed over time. Another overall approach for KM assessment suggested is the 'real options approach', which views KM initiatives as a portfolio of investments (Tiwana, 2002). When calculating ROI for KM projects, Becerre-Fernandez; Gonzalez; Sabherwar (2004) recommended overestimating costs and under-estimating value to make the results more believable to management. To estimate ROI, Siemens Corporation computes the costs of a community of practice, including labor, meetings, and facilitation meetings, and the effort spent by KM experts. To further determine the value of KM, Siemens has developed a master plan of KM metrics that contains measures of knowledge community, knowledge marketplace, key KM processes, and knowledge environment of its holistic KM system.

Compton (2001) noted that the direct impact of KM on organizational performance occurs when knowledge is used to create innovative products that generate revenue and profit, or when the KM strategy is aligned with business strategy. Such a direct impact concerns revenues or costs, and can be explicitly linked to the organization's vision or strategy. It can be observed in terms of improvements in return on investment (ROI). For example, Becerra-Fernandez (2004) noted that British Telecom reported that its sales team generated about $1.5 million in new business based on briefing from a new KM system. Shell's CKO reported that its community members including geoscientists estimated that the oil exploration and comparison of exploration sites to known sites enabled them to drill and test three fewer wells a year, saving $20 million in drilling and an additional $20 million in testing costs for each well (i.e., an annual saving of $120 million). Fernandez (2004) pointed out that indirect impact of KM on organizational performance results from activities that are not directly linked to the organizations vision, strategy, revenues, or costs. Such effects occur, for example, through the use of KM to demonstrate intellectual leadership within the industry, which, in turn, might enhance customer loyalty. Alternatively, it could occur through the use of knowledge to gain an advantageous negotiating position with respect to competitors or partner organizations.

Bontis (2003) reported that a recent study found that in organizations, having a CKO resulted in more employees sharing knowledge with one another, turnover rates were reduced, thereby positively affecting revenue and profit. KM success depends on not simply identifying the lessons, but actually implementing them on the next occasion (Wilson, 2002). Dyer and Nobeoka, (2000) noted that while exploring the 'black box' of knowledge sharing within Toyota's network, it was found that Toyota's ability to effectively create and manage network-level knowledge sharing processes, at least partially, explains the relative productivity advantages enjoyed by Toyota and its suppliers.

Steward (2002) reported that the documented value of the shared knowledge at Ford under the leadership of a CKO in 2000 was $850 million with another $400 million of value anticipated from work in progress, for a total of $1.25 billion. Malhotra (2005) noted that while doubling in size from 2001; the global KM market has been projected to reach US$8.8 billion during this year. Likewise, the market for KM business application capabilities such as CRM (Malhotra, 2004a) is expected to grow to $148 billion by the next year. KM is also expected to help save $31 billion in annual re-invention costs at Fortune 500 companies. The broader application context of KM, which includes learning, education, and training industries, offers sanguine forecasts. Annual public K-12 education is estimated at $373 billion dollars in the US alone, with higher education accounting for $247 billion dollars. In addition, the annual corporate and government training expenditures in the US alone are projected at over $70 billion dollars (Malhotra, 2005). This makes the case stronger and stakes much higher for recruiting the services of a CKO for successful ROI in organizations.

As Emmel (2004) noted, today organizations are not always looking for just a strong financial ROI, but rather, for a solution that provides more far-reaching and measurable value to the enterprise. Advancing the ROI calculation to one that speaks more of value is not an overly difficult proposition, but one that can be fraught with education and communication issues. Inserting value metrics into the ROI equation encompasses measures segregated into four areas: finance, agility, performance and alignment. Each area will have multiple measures, and these measures may be unique to the client, industry or overall business strategy. In other words, no one ROI value measurement can be one-size-fits-all. Therefore, to be effective, the CKO must identify and quantify those measures that not only calculate and compare an effort's projected financial performance, but highlight the ever elusive value measurement, as well. However, as Alber (2004) reported, that rather than using abstract ROI calculations that are too easily manipulated by project proponents, it is preferable to use measures that closely track a firm's business and the interests of clients. Leverage, effective rate and profit component are such measures.

Parsons (2004) reported that firms spending on KM initiatives had increased tremendously in developing their own KM products, and in some cases, systems costing millions of dollars. In the past fours years of IT investment drought, technology managers are finding that a return on investment (ROI) analysis is no longer just a helpful tool to assess the viability of a technology investment, but a prerequisite for funding. Scheer (2002) recommended that firms wanting to win the competition for capital playing out in every firm, it's a necessity that to build ROI model right under the leadership of a seasoned KM leadership. Mello (2001) also noted that although research and development projects may not make a strong ROI case, companies that fail to innovate and lack KM leadership will eventually be outpaced by competitors or miss growth opportunities.

Kay (2003) noted that the principal ROI on knowledge management initiatives occurs by way of intangible benefits which can only be measured qualitatively and anecdotally. The bottom line is that KM enables us to be better, more effective, more productive, and to give better service to our clients. The intangibles produced by the organizations in the form of patents, copyrights and trademarks holds financial value, which is accrued as earning on per unit investment in R&D for calculating the net ROI for a financial year. The IP valuation is important for calculating the tangible returns from intangibles which is actually an output of any KM CKO initiative. Measurement methods for KM contributions should be planned and deployed right from the beginning, with scope for course correction, better fit, matured models and continual feedback. Intel launched a methodology in 2002 called KMVM for measuring the value of KM via metrics for employee behaviors, organizational processes and business outcomes. Specific objectives include reduced time to information, reduced time to solution, and improved mean time to repair, and this methodology has been applied to Intel Solution Services. In addition, Kay (2003) also noted that CKO of Halliburton Corporation reported that KM measures must be visible to management. Measurement is part science and part art, and the scope of the measurement methodology must be clearly delineated. KM must become a part of the day-to-day workflow, and

having full-time knowledge brokers is a critical success factor. The overall KM cost in 2002 was US$3.2 million (70% related to personnel, 20% to IT).

Rao (2003) reported that Josef Hofer-Alfeis, senior manager for KM at Siemens in Munich reported that Siemens uses a technique called knowledge stakeholder network evaluation to assess current and future impact of the KM portfolio. Key performance indicators include process and project performance as well as client success and satisfaction. The "knowledge scorecards" measure business impact, knowledge states and action impacts, and include intellectual capital as well as success stories. Knowledge strategy processes are aligned with business strategy processes. The engineering giant has eight KM experts at the corporate level, 25 KM drivers at the group and regional level, over a thousand part-time KM activity supporters. Another good example of tying KM to business benefit is General Electric Global Research, which has research labs in New York, Bangalore, Munich and Shanghai. Bill Cheetham, KM leader at GE, reported that KM and artificial intelligence methods have been specifically tied to business objectives like knowledge auditing for its Innovation Centre, starting in 1998. The business objectives include productivity, better customer service, and expanding to new areas of sales and marketing.

Organizations such as Xerox, Ernst & Young, EDS, St.Paul Insurance, and Children's Hospital Boston, had successfully implemented KM under the leadership of CKOs. Powers (1999) reported that Xerox's Eureka System, DocuShare, had saved 5 to 10 percent on labor and parts costs which amounts to tens of millions of dollars. Xerox's current CKO, Daniel Hothouse, instilled a culture where employees share information. Davenport (1997) reported that Ernst & Young's 'Center for Business Knowledge' (CBK) and 'Knowledge Web' was developed to gather and store both the firms acquired knowledge and external knowledge and information. Ernst & Young's current CKO, John Peetz, believes that KM is about executing business processes. Vinson (2004) reported that Electronic Data Systems (EDS) under the current CKO, Tom Hoglund, achieved a thirteen-fold growth in knowledge re-use, and millions of dollars in efficiency gains. St.Paul Insurance under the current CKO, David Owens, created St.Paul University in which KM methodology is taught for best practices. Children's Hospital, Boston under the current CKO, Danny Shaw, implemented KM strategies and saving over $200,000 per year to reinvest in patient care while achieving Health Insurance Portability, compliance, and increased data security (Rich, 2004).

Raytheon has launched a Six Sigma initiative (R6S) as a knowledge-based process to transform its organizational culture, reduce bureaucracy and improve productivity. According to Bill Baker, KM and benchmarking champion at Raytheon, the top priorities are customer focus, supply chain and engineering, Six Sigma, Lean and KM, as performance enhancement approaches, are each providing value to their organizations and have a powerful synergy due to their complementary focuses on measurement, efficiency and knowledge sharing. The KM design team includes Six Sigma experts, master experts, specialists, KM champions and knowledge brokers. The launch of the program in 2002 included the release of a KM video, KM handbook, demonstration of the KM portal, an award announcement, and selection of knowledge brokers (Rao, 2003). Ford's total KM impact of facilitated best practices transfer since 1995 is US$1 billion (the annual impact for 2002 alone was $100 million). IBM has validated over 180 success stories of its KM initiatives. As Rao (2002) envisioned value proposition, vision, strategy and a commitment of resources are key to avoiding low ROI, lack of leverage, lost credibility and a sense of frustration with launched KM initiatives. KM approaches such as collaboration, content management, expertise locators, and integrated learning systems will become increasingly institutionalized into business processes. According to Adams (2002), the following statistics indicate why the CKO will become a mainstay in the boardroom: 42 per cent of Fortune 500 companies anticipate appointing a CKO within the next three years; and 33 per cent of Fortune 1000 companies report that knowledge management activities are already under way. IDC, an international research organization, has reported that Fortune 500 companies wasted $10 billion by duplicating knowledge work in 2004, e.g., simultaneous search costs, parallel research projects. At the same time,

recent studies conducted at the Institute for Intellectual Capital Research in Dundas, Ontario provide strong evidence that KM programs are not only becoming more prevalent but are resulting in tremendous savings. Twenty-five percent of Fortune 500 companies have CKOs; 80 percent of Fortune 500 companies currently have KM staff. From 2000-2004, the Ford Motor Company saved $510 million, mainly due to effective knowledge management programs; Chevron has saved $650 million since 1991; while Texas Instruments has saved $1 billion since it launched KM programs in the mid-1990's.; and 95 percent of CEO's polled at the 2004 world economic forum said that KM was critical to organizational success.

Earl and Scott (2001) studied 20 CKOs in North America and Europe and found that the changes required in organizational and managerial behavior to manage knowledge as a normal, daily activity and the environmental and technological investments required were going to take longer than they or their chief executives expected. Bontis (2002) interviewed more than 25 CKOs from around the world and found that the CKO's claimed that in order to succeed in the future, they would need; 1) more slack time for dreaming, thinking and talking, and 2) more high-level support from CEOs and board members. According to Adams (2001) Gordon Larson, CKO of CAN Financial Corporation cites empathy as an important job skill. His work entails "listening to the needs of the people that deliver CAN's products and services. Kent Greenes, Science Applications International Corp.'s (SAIC's) CKO is another example of a CKO who explicitly ties KM to increased corporate profit and market share. According to the SAIC web site, Greenes gained fame as a CKO because he saved PB$260 million in 1998. Adams (2002) also observed that CKOs justify their presence within an organization by pointing to just this kind of cost savings and increased productivity. Mike Burk, CKO of the U.S. Department of Transportation's Federal Highway Administration, also observed that "people naturally want to help each other and get personal satisfaction when they add value from contributing their knowledge". Hubert Saint-Onge, the CKO of Clarica Life Insurance Co., an insurance and investment services company, emphasizes the interdependence of corporate teams and units.

As pointed out by Bontis (2003), it is the CKO's role to create an organizational discipline in which experienced practitioners routinely capture information, where users turn to internal information resources with new problems, where systems sift through volumes of data and enable easy search and retrieval of the relevant information, and where there is a culture of sharing despite unit barriers. The role of the CKO is to create this culture and the learning and knowledge sharing systems that make it happen. The CKO also brings new thinking and best practices from the outside in, and pushes them throughout the organization to spark innovation and to enhance organizational capabilities.

CONCLUSION

KM initiatives are continuing to make tangible and intangible contributions to the organizations around the world by connecting KM with the bottom line, and integrating KM effectively into business strategy. By aligning knowledge interventions to business objectives, organizations are strengthening the core of KM. The effective development and utilization of expertise, information and ideas are becoming vital to all the three corporate orientations- customer intimacy, product leadership and operational excellence. As organizations search for ways to gain competitive advantage, they are increasingly leveraging their knowledge capital. As we continue to transition from the networked-society to the knowledge-economy, effective use of KM is becoming one of the most important distinguishing factors. The success of organizations in the current economy depends on the ability of their leaders to create a culture and style where knowledge is valued, nurtured, and used. Playing a role that is increasingly becoming critical, CKOs are becoming the driving force behind the KM initiatives within today's organization. By continuously developing and using expertise, information and ideas, CKOs are moving organizations towards improvement in efficiency, effectiveness and significant cost reduction.

CKOs are also nurturing the taxonomy and governance as important tools for relevance and direction and fostering a democracy of knowledge in the organizations. In addition, integration of the KM with Six Sigma and Lean, and extension of the KM across organizational boundaries are becoming the hallmarks of successful organizations. Charged with ensuring that a company maximizes the value it achieves through what has become its most important asset - employee knowledge, CKOs are relying on new technologies and processes to leverage employee's explicit and tacit knowledge in ways that positively impact the company's bottom-line. The value-add of a CKO to the organization's financial and economic growth relate directly to the effectiveness with which the managed knowledge enables the members of the organization to deal with today's knowledge-economy situations. It also effectively envisions and creates a future for organizations of not only a continued financial prosperity, but also a maximum return on investments.

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