

ENTERPRISE INFORMATION PORTALS AND KNOWLEDGE MANAGEMENT IN SELECTED MICRO-FINANCE BANKS IN ABIA STATE



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ABSTRACT

This study focused on applying and utilizing enterprise information portal. Descriptive survey approach was adopted and data was generated from a five point likert scale questionnaire. The study covered a population of one hundred and twenty three (123) members of staff of three selected banks in Owerri. Taro Yamene formula was used to select a sample of 94 respondents. Out of the 94 questionnaires distributed, 88 were correctly filled and returned; thereby given a questionnaire return rate of 93.62%. The data gathered was analyzed with the kruskawalis (H) test. The findings from hypothesis one and two showed that $H = 0.003$ and 0.000 respectively, leading to the rejection of H_0 . This study therefore concludes that Nigerian banks have keyed into enterprise information portal utilization especially as it affects knowledge dissemination and organizational memory development through their leveraging of intranet and extranet facilities. It was therefore recommended that there is need for organizations to improve on their EIP security in order to curtail leakage of vital official knowledge/information which may compromise the knowledge management process and that Training and retraining of employees on the need and utilization of modern EIP facilities will greatly enhance EIP'S contribution to knowledge management.

I. INTRODUCTION

Organizations are established to attain a set of predetermined goals. In order to achieve these goals, employees are hired and placed on specific task. However, due to the integrated nature of organizational activities, it is expedient that information must be exchanged among and between individuals, units and even the organization and its external environment. Furthermore, to arrive at sustainable goal attainment, organizations as an open system must develop and operate an information exchange system that must enable obtain, apply and retain current and relevant market information as a critical input in strategy development. The import of the above scenario is the need for a time and cost efficient information and knowledge management system. Today, more than ever, business is a key shaper of the emerging global society. The exchange of knowledge, materials, energy, and people; the blending of cultures; and the dissipation of geopolitical boundaries are to a great extent the result of transnational business operations. The relevance of knowledge and the need for approaches to manage it became apparent first and foremost in the business world. Accessing, evaluating, managing, organizing, filtering, and distributing information in a manner that is useful to end users typifies the need for an efficient Knowledge Management. Enterprise information portal (EIP) involves blending a company's internal and external information and turning it into actionable knowledge via a technology platform. The Internet and its various applications have made many tasks easier than what they were in the past, including KM. For many companies and their staff nothing is important more than managing the information or knowledge they possess. The World Wide Web (WWW) has come to help these people and meet their information needs in an easy way.

Statement of the Problem

One critical element every organization needs to survive is information. Organizations are therefore faced with challenge of ensuring that their employees acquire the right knowledge and transmit same to their job. To remain competitive and growth driven, organizations must develop and maintain a reservoir (memory) of their strategic moves that has helped them in the past. This requires certain technological infrastructure. Therefore when the needed technological infrastructures for knowledge storage are absent or there is an abrupt termination of knowledge reserve and transmission process, the organization's overall knowledge management process may be endangered. Due to the vast dimension of EIP together with that of KM this study will focus mainly on the examination of the utilization of EIP in knowledge management.

Objectives of the Study

The general objective of this study is to examine knowledge management and business viability. The specific objectives are;

- i) To examine the extent of intranet facilities utilization on knowledge dissemination in organizations.
- ii) To examine the extent of extranet facilities utilization in the development of organizational memory in organizations.

Research Questions

The following questions will provide guide to this study;

- i) What are the extents of intranet facilities utilization on knowledge dissemination in organizations?
- ii) What are the extents of extranet facilities utilization in the development of organizational memory in organizations?

Hypotheses

The following null hypothetical statements are made for this study;

H₀₁: intranet facilities are significantly utilized in knowledge dissemination in organizations .

H₀₂: extranet facilities are significantly utilized in the development of organizational memory in organizations.

II. REVIEW OF LITERATURES

Conceptual review

Enterprise Information Portal (EIP) Defined Enterprise Information Portal (EIP) is a new application that enables a company to unlock internally and externally stored information, and provides internal and external users with a single gateway to personalized information needed for making informed business decisions (Ferguson, 1999). A slightly different definition by Fitzgerald (2001) describes an EIP as a secure, web-based interface that provide a single point of access to information, applications and services for all people in the enterprise. Each organization can establish its own standard definition along with a collection of portal objectives to the organization when considering a portal strategy (Collins, 2001). An EIP can include but is not limited to the following features and functionalities:

1. *Single Point of Access to Organizational Information Resources:* The concept of a single point of access to an organizational information resource is crucial when information scattered in different documents and systems are difficult to locate. An EIP provides a logical centralized point to access and share information across different military units and bases in a secured environment.
2. *Personalization:* Personalization provides required functionality for each user to organize, define and rearrange the portal desktop to work effectively and efficiently. This component is important for creating a working environment that is organized and configured specifically to each employee in the organization optimizing decision-making capabilities (Collins, 2001).
3. *Collaboration:* An EIP allows users to view and publish information in a group area in order to share internally with colleagues as well as communicate externally with customers, suppliers or partners (Gannon, 2000). These abilities of sharing are accomplished it is through messaging systems, discussion forums and automated alerts. This functionality enables real-time interaction and sharing information through establishing a commonplace accessible by all members of the organization (Davydov, 2001).

4. *Mobility*: With the advent of wireless technology, a mobility feature should be incorporated into an EIP to enable mobile troops to access and share information using cellular phones and personal digital assistants (PDAs). Using wireless LAN and wireless WAN technologies can also enhance mobility feature.

5. *Scalability*: An EIP must be designed to cope with rapid technological changes and the organization's growing needs. Goodyear et al (2000) explains that scalability is the ability to upgrade and expand software, hardware and network infrastructures to meet changing needs. Scalability must be incorporated into the system from the beginning.

6. *Reliability*: Reliability is defined as a measure of a system's ability to provide accurate delivery of information (McCabe, 1998). An EIP is a complex system that comprises technologies integrating pieces such Internet, intranet and extranets (Hall, 2000). Ensuring reliability is important in an EIP. However, measuring accuracy for reliability is difficult; therefore, the running time of the system and the recovery time of a system can provide a surrogate measure of the reliability of that system (McCabe, 1998).

7. *Security*: Information security is a major concern for all systems and applications that need to protect information resources through controlled access and authorization. Therefore, using identification, authentication and encryptions technologies should meet security (Hall, 2000) to handle unclassified and classified data. These are accomplished by issuing access rights to the users, proper storage of software and hardware, and secure network infrastructures. To protect information throughout an enterprise portal security measures for the physical, the network, the operating system, the database and the application, must be integrated into the portal development.

a. *Physical Security*: Physical security entails controlling access to computers and information resources. Physical security includes guards, locks and fences to deter direct attack and protection against disasters. While being the easiest, the most effective and the least expensive controls, it is the most neglected security component (Pfleegers, 1997).

b. *Network Security*: Network security controls access through use of firewalls and encryption mechanisms. A firewall is the process that filters all the traffic between a protected network inside the organization and a less protected network from outside the organization. Encryption, on the other hand, is the process of transforming information that it becomes unintelligible to outsider observer.

c. *Operating Systems/Application/Databases Security*: These security mechanisms provide an additional security measures, such as logon authentication and access to computer resources.

The Benefits of Enterprise Information Portal

The EIP is becoming mission critical to large enterprises since organizations use this application to give business users' (both within and outside the organization) access to a variety of data sources and applications (Viador Inc, 2000). EIP can offer the following benefits:

i. *Improved Productivity*: Improvement in productivity means that a user spends less time to find an answer to a question, to make a decision or to take an action when using an EIP. Spending less time searching for information allows more time using that information. Hence, the portals may speed up the time cycle to process information and to increase efficiency resulting in an overall improvement in productivity (Firestone, 2001).

ii. *Improved Effectiveness*: Improved effectiveness is based on the idea that portals not only give new information that was not previously available to the users, but also provide information in an integrated and personalized form. An EIP is an integrated decision making system that provides real-time access to relevant information. Improved effectiveness is an intangible benefit provided by an EIP.

iii. *Improved Collaboration and Information Sharing*: Important benefits of an EIP are improved collaboration within an organization, easy access and dissemination of information across different units.

iv. *Universal Access to Organizational Resources*: An EIP provides access to an organization's information and resources. Given the proper security constraints, users can get information at any location at any time (Cassidy, 1998). In addition, using an EIP creates the possibility using both "pull" and "push" technologies ensuring that users have the right information available to them at the time. Push technology sends information to the users without the user's initiative to seek it while pull technology delivers information only when requested.

Enterprise Information Portal Technologies

As mentioned in the definition, an EIP is an amalgamation of technology meant to join an organization's systems and its applications including legacy systems and legacy applications, which improve collaboration and information sharing. Legacy systems and applications are older systems such as computers, hardware, software, application programs that are crucial to the day-to-day operation of an organization but considered old, expensive and unusable (Whitten et al, 2001). However, to build an EIP from the ground up, several technologies that serve as building blocks must be explained. The common building blocks are

- Local Area Network (LAN)
- Wide Area Network (WAN)
- Intranet/ Extranet

❖ *Local Area Network (LAN)*: A Local Area Network (LAN) connects a group of computers to share common communication media and computer resources, such as printers and file storage. The network covers small areas, such as single buildings or groups of buildings in close proximity connected by cables: twisted-pair, coaxial or fiber optic. In addition to cables, wireless technologies are increasingly being used to connect computers instead of physical media. A LAN can range from a simple network with a small number of computers to a hybrid network connecting many computers. A LAN is also capable of transmitting data faster than data being transmitted over a phone. Network topology is a physical and logical layout of computers on a network.

❖ *Wide Area Network (WAN)*: A wide Area Network (WAN) is a communication network that connects sites across large geographic areas. A WAN joins more than LAN through a public network, such as the telephone system, a leased line or satellites to a large geographic area (pcwebopedia, 2002).

❖ *Wireless LAN and Wireless WAN*: Wireless technologies can be used to connect buildings or units within a LAN or bases around the country where the terrain is difficult to establish a wired connection.

❖ *Intranet/Extranet*: An intranet is a computer network based on communications standard of Internet protocols, such as TCP/IP and HTTP. The Intranet is usually built behind firewalls to ensure that no unauthorized users can access the organization's

❖ information and other resources. Intranets facilitate sharing information within an organization through LAN connections. While the intranets are used to communicate within the organization, extranets are used to connect an organization with outside stakeholders. The extranet function similarly to private networks within the Internet and it enables an organization to share information and applications with suppliers, customers and to conduct electronic commerce transactions safely, securely and inexpensively (Bort and Felix, 1997).

Knowledge Management

According to Walters (2002), Knowledge management can be defined as the organizational capability which identifies, locates (creates or acquires), transfers, converts and distributes knowledge into competitive advantage. Kongpichayanond (2009), defined KM as a process in general system theory with four categories including knowledge acquisition and creation, knowledge capture, storage and retrieval, knowledge dissemination, transfer and sharing, and knowledge application that organizations decide to manage to gain competitive advantage (CA). According to Debowski (2006), KM is the process of identifying, capturing, organizing and disseminating the intellectual assets that are critical to the organization's long-term performance. Jennex and Olfman (2006) defined KM as management's thorough efforts to use tools and approaches to locate, refine, transfer, and apply the knowledge and experience available to the organization. To James (2005) KM is the identification, acquisition, utilization, support, maintenance and disposal of knowledge assets for the purpose of adding value and benefiting all stakeholders. To Rasgoti (2000), it is a systematic and integrative process of coordinating organization-wide in pursuit of major organizational goals including the acquisition, creation, storage, sharing, diffusion, development, and deployment of knowledge.

Benefits of Knowledge Management

Knowledge management is a strategic activity that should add value and, thus, is a close link between KM and the strategic plans of the organization which ensures that knowledge activities contribute to profitability and strategic advantage (Duffy 2000). Sharing this view, Walters, Haliday and Glaser (2002) state that KM within strategic operations enables an organization (or combination of organizations) to make more effective decisions about how to structure value chain operations to maximize customer satisfaction. The importance of KM for value chain (virtual organization) management is also emphasized by Blumentritt and Johnston (1999) who state that „the ability to identify, locate, and deliver information and knowledge to a point of valuable applications is transforming existing industries and facilitating the emergence of entirely new industries.

In terms of specific organizational impacts of KM, Becerra-Fernandez, Gonzalez and Sabherwal (2004) suggest four levels, consisting of people, processes, products, and the overall performance. First, KM can (1) facilitate employees' learning in a variety of ways, including externalization, internalization, socialization, and communities of practice; and (2) engender greater adaptability among employees and their job satisfaction. Second, KM enables improvements in organizational processes in the three dimensions of effectiveness, efficiency and innovation. At the product level, the impact of KM can be seen in two respects: Value-added products and knowledge-based products. The benefits of KM to the overall organizational performance can also be divided into: direct (improvements in return of investment – ROI) and indirect (achievement of economies of scale and scope, and generation of SCA).

Similarly, Leng and Shepherson (2000) as cited in James (2005) posit that KM can improve efficiency and effectiveness, along with responsiveness and flexibility to market changes. It can also be used to improve product development, innovation and quality, and develop a better understanding of customer and stakeholder relationships. In terms of SCA, many authors support the viewpoint that in the current complex and challenging environment with high uncertainty and dynamism, the ability to acquire, develop, share and apply knowledge has become the key for gaining sustained competitive advantage and sustained superior performance. Knowledge itself can be reused and new knowledge can be integrated with current knowledge to develop even more valuable knowledge and strategically valuable new insights, creating a unique valuable synergy to improve the firm's performance (Sharkie 2003). Moreover, it is superior knowledge that enables organizations to exploit, combine, and develop other traditional tangible and intangible resources in new and distinctive ways, thereby, providing superior value to customers, enhance the fundamental ability to compete and allow an organization to develop SCA and do better than rivals, even if its other resources are not unique.

No matter which perspective is applied, the strategic management of knowledge is of great importance to the success of any company in a knowledge-intensive industry and Grant (1996) argues that knowledge is a resource whose special characteristics and needs for coordination is one of the main reasons firms exist at all. Nonaka (1991) argued that Japanese companies in automotive and electronics were successful largely due to managing to become *knowledge creating companies* where all levels of the company work together to create new tacit and explicit knowledge by gathering, combining and transforming existing tacit and explicit knowledge.

Schulz and Jobe (2001) argue that Multinational corporations enhance performance and gain competitive advantage by strategically managing the balance between keeping knowledge immobile (more tacit) to not let competitors make use of it and of making knowledge mobile (more codified or explicit) in order to facilitate use of the knowledge inside the organization. Based on surveying subunits, they further argue that companies do not benefit from just encoding more information in multiple forms, instead they should use a focused strategy of encoding the right pieces of knowledge in a single way that fits the information intensity and ambiguity of that information. Schulz and Jobe (2001) take a broad view of knowledge codification and divide it into 3 main categories: *numbers & code* (such as computer programs) are the most abstract way of codifying knowledge, *words and text* are less abstract and *people and objects* which is concrete prototypes or the uncoded knowledge of individual employees.

Mahnke et al. (2005) used the concept of *absorptive capacity* in performing a case study of how subsidiaries in a multinational company actually benefitted from knowledge management practices. The use of tools such as learning systems (directories of where to find information), group benchmarking reports, knowledge teams and the corporate university was found to help integration of subsidiaries and have positive impact on economic performance and process efficiency.

When employees are let go or choose to leave the firm, knowledge management practices have an important role to play in retaining knowledge in the organizational memory, this retention is something which Schmitt et al (2012) argue is an insufficiently explored subject and that this leads to large losses of knowledge when downsizing.

Theoretical Review

The theories that underlies this study includes

➤ *Social Capital Theory:* Nahapiet and Ghoshal (1998) define that social capital is the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by the individual or social unit. By affecting the conditions necessary for the process of exchange and combination to occur within the social network of an organization, social capital facilitates the development of intellectual capital or knowledge. Gold (2001) argues that the conditions for the process of combination and exchange of knowledge emphasize the importance of infrastructure elements in providing a mechanism for social interaction of individuals. Thus, an organization must have the necessary resources and capabilities to manage knowledge effectively, such as organizational structure, organizational culture, people and technology.

Resource-Based View Theory: In accordance with the RBV, Grant (1991,) posits that while resources are the source of a firm's capabilities, capabilities are the main source of competitive advantage. Therefore, it has been emphasized that the key to achieving sustainable competitive advantage from the firm's stock of resources lies in the ability to integrate different resources to form strong organizational capabilities (Verona and Ravasi 2003). The RBV of the firm, blended with a knowledge-based perspective, highlights the effective ways of coordinating individuals' activities within the firm and integrating their knowledge (Lopez 2005). Gold, Malhotra and Segars (2001) argue that it is how effectively firms leverage and combine their KM resources to create a unique KM capability that determines their overall effectiveness. In other words, firms can and do differentiate themselves on the basis of their valuable resources of KM capability which are complex to acquire and difficult to imitate, thereby, providing them with a sustained competitive advantage (Chuang 2004).

III. METHODOLOGY

In conducting this study, descriptive survey approach was adopted and data was generated from a five point likert scale questionnaire. The study covered a population of one hundred and twenty three (123) members of staff of three selected banks in Owerri. Taro Yamene formula was used to select a sample of 94 respondents. Out of the 94 questionnaires distributed, 88 were correctly filled and returned; thereby given a questionnaire return rate of 93.62%. The data gathered was analyzed with the kruskawalis (H) test. The kruskawalis test is given as;

$$T = H = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(N+1)$$

The decision rule is to reject the null hypothesis if $H \geq \chi_{(k-1)}^2$, where k is the degrees of freedom.

IV. RESULTS

SPSS OUTPUT FOR HYPOTHESIS ONE

NPART TESTS

/K-W=IFandKD BY RANKS(1 5)
/STATISTICS DESCRIPTIVES
/MISSING ANALYSIS.

NPar Tests

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
IFandKD	20	17.6000	7.75547	5.00	30.00
RANKS	20	3.0000	1.45095	1.00	5.00

Kruskal-Wallis Test

Ranks			
	RANKS	N	Mean Rank
IFandKD	1.00	4	2.63
	2.00	4	11.00
	3.00	4	13.88
	4.00	4	17.88
	5.00	4	7.13
	Total	20	

Test Statistics ^{a,b}	
	IFandKD
Chi-Square	15.984
Df	4
Asymp. Sig.	.003

a. Kruskal Wallis Test

b. Grouping Variable: RANKS

Discussion: from the SPSS output above, $H \geq \chi_{(k-1)}^2$ (i.e 0.05>0.003), we therefore reject the null hypothesis in line with the rule and conclude that there is a significant utilization of intranet facilities in the studied organizations

SPSS OUTPUT FOR HYPOTHESIS TWO

NPART TESTS

/K-W=EFandOM BY RANKS(1 5)
/STATISTICS DESCRIPTIVES
/MISSING ANALYSIS.

NPar Tests

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
EFandOM	25	17.6000	7.72981	5.00	30.00
RANKS	25	3.0000	1.44338	1.00	5.00

Kruskal-Wallis Test

Ranks			
	RANKS	N	Mean Rank
EFandOM	1.00	5	3.20
	2.00	5	13.50
	3.00	5	17.90
	4.00	5	22.00
	5.00	5	8.40
	Total	25	

Test Statistics ^{a,b}	
	EFandOM
Chi-Square	20.606
Df	4
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: RANKS

Discussion:

from the SPSS output above, $H \geq \chi_{(k-1)}^2$ (i.e 0.05>0.000), we therefore reject the null hypothesis in line with the rule and conclude that there is a strong significant utilization of extranet facilities in the development of organizational memory in the studied organizations.

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IV. CONCLUSION

In today's knowledge driven economy, it has become fashionable for organizations to develop a repository of knowledge upon which its operations are anchored. In pursuit of this strategic mandate, the adoption of technology becomes of great importance. This study therefore concludes that Nigerian banks have keyed into enterprise information portal utilization especially as it affects knowledge dissemination and organizational memory development through their leveraging of intranet and extranet facilities

V. RECOMMENDATIONS

The following recommendations are advanced in this study;

- i) There is need for organizations to improve on their EIP security in order to curtail leakage of vital official knowledge/information which may compromise the knowledge management process.
- ii) Training and retraining of employees on the need and utilization of modern EIP facilities will greatly enhance EIP'S contribution to knowledge management.

REFERENCES

- [1] **Becerra-Fernandez, I, Gonzalez, AJ & Sabherwal, R (2004).** *Knowledge management: Challenges, Solutions, and Technologies*, Upper Saddle River, N.J.: Pearson/PrenticeHall
- [2] **Blumentritt and Johnston (1999).** Towards a strategy for knowledge management. *Technology Analysis & Strategic Management*, Vol. 11, No. 3
- [3] **Bort J. and B. Flex, 1997,** Building an Extranet: Connect Your Intranet with Vendors and Customers [Online] Available <http://www1.fatbrain.com.html>.
- [4] **Bose, R. (2004).** Knowledge Management Metrics. *Industrial Management & Data Systems*, 104 (6)
- [5] **Cassidy A., 1998,** A Practical Guide to Information Systems Strategic Planning, Washington DC, St. Lucie Press.
- [6] **Chuang, S.H. (2004).** A resource-based perspective on knowledge management capability and competitive advantage: An empirical investigation. *Expert System with Applications*, 27,
- [7] **Collins H., (2001).** Corporate Portals: Revolutionizing information Access to Increase Productivity and Drive the Bottom Line, AMACOM.
- [8] **Davydov M., (2001).** Corporate Portals and e-business Integration, McGraw-Hill,
- [9] **Debowski, S (2006).** *Knowledge Management*, John Wiley & Sons, Milton, Queensland, Australia.
- [11] **Duffy, J. (2000).** Knowledge management: to be or not to be? *Information Management Journal*, 34(1)
- [12] **Ferguson M., 1999,** Building Enterprise information Portal [Online] Available <http://www.itworks.be/BuildingEnterpriseinformationPortals.html>
- [13] **Firestone J., DKMS (2001).** Brief No. Ten: Benefits of Enterprise Information Portals and Corporate Goals [Online] Available <http://www.dkms.com/EIPBenefits.html>
- [14] **Fitzgerald P., (2001).** Tie it Together and Open it Up with Enterprise information Portals. Available <http://www.intranetjournal.com/Articles.html>
- [15] **Gannon T, (2000).** A Business Solution: EIP [Online] Available <http://www.Dmreview.com>.
- [16] **Gold, A.H., Malhotra, A. and Segars, A.H. (2001).** Knowledge management: an organizational capabilities perspective. *Journal of Management Information Systems*, 18(1)
- [17] **Goodyear M et al., (2000).** Enterprise System Architectures: Building Client/Server and Web-based Systems, Boca Raton, Florida, CRC Press.
- [18] **Ghalayini AM, Noble JS (1996).** The Changing Basis of Performance Measurement, *Int. J Operations and Production Management*, 16(8)
- [19] **Grant, R.M. (1996).** Towards a knowledge based view of the firm *Strategic Management Journal*, Special issue, Vol. 17
- [20] **Hall C., (2000).** Enterprise Information Portals: Hot Air or Hot Technology, Arlington, Massachusetts, Cutter Information Corp.
- [21] **James, P (2005).** *Knowledge Asset Management: The Strategic Management and Knowledge Management Nexus*, DBA thesis, Southern Cross University.
- [22] **Jennex, M., and L. Olfman (2006).** *Organizational Memory/Knowledge Effects on Productivity: A Longitudinal Study*. Hawaii International Conference on Systems Sciences, Hawaii
- [23] **Kim JA (2006).** Measuring the impact of knowledge management. *J. Int.Fed. Library Assoc. Inst.*, 32(4)
- [24] **Kongpichayanond, P. (2009).** Knowledge management for sustained competitive advantage in mergers and acquisitions, *Advances in Developing Human Resources*
- [25] **Leng, T.K. and Shepherdson, C. (2000).** Knowledge management The key to staying competitive', Available at: <http://computertimes.asia1.com.sg/archive/2000-03->
- [26] **Liebowitz, J. (2012).** *Beyond Knowledge Management: What Every Leader Should Know*
- [27] **Lopez, S. V. (2005).** Competitive Advantage and Strategy Formulation. *Management decision*, 43(5)
- [28] **McCabe J.D, 1998,** Practical Computer Network Analysis and Design, San Francisco, California, Kaufmann Publishers Inc.
- [29] **Mahnke, V., Pedersne, T. and Venzin, M. (2005).** The Impact of Knowledge Management on MNC Subsidiary Performance: The Role of Absorptive capacity, *Management International Review*, Issue 2

- [30] **Nahapiet, J and Ghoshal, S (1998).** Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, vol. 23, no. 2
- [31] **I. and Takeuchi, H. (1995).** *The knowledge creating company*, New York: Oxford University Press
- [32] **Pcwebopedia, (2002).** Wide Area Network [Online] Available http://www.Pcwebopedia.com/TERM/w/wide_area_network_WAN.Html
- [33] **Pfleeger, (1997).** *Security in Computing*, Upper Saddle River, New Jersey, Prentice Hall.
- [34] **Rastogi, P. (2000).** Knowledge management and intellectual capital: The new virtuous reality of competitiveness. *Human Systems Management*, 19(1),
- [35] **Schulz, M. and Jobe, L.A. (2001).** Codification and tacitness as knowledge management strategies: an empirical exploration. *Journal of High Technology Management Research*, 12(1)
- [36] **Sharkie, R (2003).** Knowledge creation and its place in the development of sustainable competitive advantage', *Journal of Knowledge Management*, vol. 7, no. 1
- [37] **Walters, D. (2002).** *Operations Strategy*, New York, NY: Palgrave Macmillan
- [38] **Whitten J.L. et al., 2001,** *Systems Analysis and Design Methods*, New York, NY, McGraw-Hill Irwin.
- [39] **VIADOR Inc. 2000** Whitepaper, VIADOR E-PORTAL – An Enterprise Information Portals Architecture [Online] Available <http://www.Itpapers.com/cgi/PsummaryIT>.
