

eGovernance Challenges in the New Global Context

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Abstract. *The emergence of new information communication technologies, organizational issues (learning organization, etc) and the awareness of the importance of knowledge management are increasingly described and deployed in the literature and as well in strategic documents produced all over the world. In addition, governments worldwide, on all levels, from state to local, are seeking to harness the potential offered by these new technologies and organizational concerns to create new dimensions that will give characteristics, outline and relationships that describe good governance. New study programs evolve (e.g.: <http://egov.epfl.ch> "Executive Master in eGovernance) that embrace how new technology impacts the governance activities. But is this scattered understanding enough? Should some new approaches be introduced to envelope different topics to allow proper path driven by a constant changes? Knowledge is a growing space to transform the emerging digital venues into people-centered developments that reduce the digital divide by narrowing the digital gap and the deployment of eGovernance. A failure to understand that different "types" of knowledge can be more and more important could harm the need for new actions.*

Key words: eGovernment, eGovernance, iGovernment, information communication technologies, knowledge, KM, knowledge society, learning organization.

Introduction

Report from the High level Group chaired by Wim Kok (November 2004) on "Facing the challenge – The Lisbon strategy for growth and employment"² has perturbed EU countries. It showed the required and urgent actions across five areas of policy that EU is lagging back compared to agree actions and other developed regions in the world:

- **the knowledge society:** increasing Europe's attractiveness for researchers and scientists, making R & D a top priority and promoting the use of information and communication technologies (ICTs);
- **the internal market:** completion of the internal market for the free movement of goods and capital, and urgent action to create a single market for services;

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² See: http://europa.eu.int/comm/lisbon_strategy/index_en.html (January 2005).

- **the business climate:** reducing the total administrative burden; improving the quality of legislation; facilitating the rapid start-up of new enterprises; and creating an environment more supportive to businesses;
- **the labour market:** rapid delivery on the recommendations of the European Employment Taskforce; developing strategies for lifelong learning and active ageing; and underpinning partnerships for growth and employment;
- **environmental sustainability:** spreading eco-innovations and building leadership in eco-industry; pursuing policies which lead to long-term and sustained improvements in productivity through eco-efficiency.

One of the main tangible concerning above-mentioned matters lies within the field of infrastructure – the so-called (digital) networking of knowledge and/or organizational principles. The digitalization of processes, work and organization issues are demanding ever-faster change. That “change” is pressing for a better use of *Knowledge Management (KM)*, *Learning Organization (LO)* principles and of *Information Communication Technologies (ICTs)*. Permanent improvements in information communication technologies (ICTs, web, Intranet, Extranet, etc.) have enabled scattered items of information to be arranged in organizational database knowledge repositories known as *data warehouses*. ICT organizes KM and incorporates the intelligent searching, categorizing and accessing of data from disparate databases, e-mail and files (Willet, July 1998³). This undertaking is done using known methods and principles to enhance “the process of collecting, organizing, classifying and disseminating information through an organization, to make it purposeful to those who need it (Albert, Sept. 1998⁴)”. However, the use of these innovative tools has brought a new dimension to all these practices as “Knowledge management ICT concerns organizing and analyzing information in a company’s computer database so this knowledge can be readily shared throughout a company, instead of languishing in the department where it was created, inaccessible to other employees (CPA Journal, Aug. 1998⁵)”. This feature, *to be shared instantly by electronic means*, started also a new era. The previous one - the *industrial era*, was not dependent on automation but was done using different manual procedures. The next step in the evolution towards the knowledge - based society was the automation of manual processes by different mechanical and later electronic tools, which permitted mass production. With the introduction of computers and networking in the *information society*, the center of attention moved from mass production to a customer-oriented environment.

³ Willet S. & Copeland L.; *Knowledge management key to IBM’s enterprise plan*; Computer reseller news; July 27, 1998; p. 1-6

⁴ Albert S.; *Knowledge management: Living up to the hype?*; midrange Systems, 11(13), September 7, 1998; p. 52

⁵ CPA Journal; *Knowledge management consulting gives CPAs a competitive edge*; 68(8); August 1998; p 72

Government and eGovernance

The intellectual capital of a nation or region requires the articulation of a system of variables that helps to uncover and manage the invisible wealth of a nation (Bontis, Jan. 2002⁶). The literature illustrates that governments play a central role in these developments, which are nowadays performed through governance and the use of ICT tools (eGovernance). A government in which the people hold the ruling power either directly or through elected representatives is called Democracy. The concept originated in ancient Greece but was in practice at that time in ways much different from what it is understood to be today. Democracy is used generally to denote political systems that operate with the participation and consent of the citizens, as through the practice of regular elections. Citizens have the right to participate in political decision-making. Democracy is not an ideology, but rather an ideal that can be reached or embodied by various institutional arrangements according to one's ideological conception of freedom, participation, rights, etc. Electronic democracy (eDemocracy) is viewed directly as representative democracy based on the digital venue. 'The Internet' is the new practice. This amazing device – full of youth, verve and energy – might just be *The Answer* to people who seem to ignore democracy (Crabtree, March 2003⁷). ICT is seen as a venue in support of whatever conception of democracy a society may have, and – with social as a learning organization – can be expected to help refined the notion of democracy over time.

Government is the system or organizational process by which a community or other political unit is governed. Governments produce huge volumes of information and an increasing amount of it is available through electronic venues, the Internet, and other electronic means. Literacy therefore goes beyond the employment of computers and extends to strategies and policies for information access and use, such as how we think and how we seek and use information in our lives (Marchionini et al., Jan. 2003⁸). The nature, cost and technology literacy result in electronic support participation of government directly through availability, affordability and adaptability. The application of ICT within government services can thus be divided into three categories: *access to information*, *transaction services* and *citizen participation*. The term of eGovernment commonly implicit in today's usage as representing all government procedures and tasks supported by digital means - it is a technological view. In the

⁶ Bontis Nick; *National intellectual capital index: Intellectual capital development in the Arab Region*; Institute for Intellectual Capital Research & UNDP; version January 10, 2002.

⁷ Crabtree James; *Civic hacking: a new agenda for e-democracy*; March 6th, 2003; <http://www.digitalopportunity.org/cgi-bin/index.cgi?root=2822&url=http%3A%2F%2Fwww%2Eopendemocracy%2Eenet%2Fdebates%2Farticle%2Ejsp%3Fid%3D8%26debateId%3D85%26articleId%3D1025>; (May, 2003)

⁸ Marchionini Gary, Samet Hanan, Brand Larry; "Digital Government"; Communication of the ACM, January. 2003, Vol. 46, No. 1. P. 25-27

light of this, we are proposing to understand, through this text, government procedures and tasks as a three-part procedure (Berce, 2004⁹):

- Information Communication Technology infrastructure where at the core of the current eGovernment model(s), there are two activities:
 - One, and frequently the first step, is iGovernment - converting existing processes and paper objects into digital form. The term was coined out within this research. It is frequently the first step that focuses mainly on the internal digitalization of documents and processes and is designed to contribute to the efficiency and effectiveness of public administrations. This kind of classification helps us in distinguishing rudimentary usage of ICT - digitalization from service based one.
 - The second activity is eGovernment - a digital services - building on the previous one represents the presentation of Internet-based digital services by the government administration to its non-government clients such as citizens and businesses. It means converting literal services into virtual services.
- Knowledge Management is an activity or a term with many meanings. It is of large potential importance as value added to administration, governance, and a sustainable application to citizens. The discussions of the possibility of managing knowledge as a resource put forward different views. If knowledge is explicit then it could perhaps be managed, measured, etc. but if we use a tacit (or flow of knowledge) then it "can only be learned", shared, fostered etc.
- Learning Organizations is activity within organizations where people continually expand their knowledge and skills to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning to see the whole together (Senge 1990¹⁰).

"The role of government is changing. The community is seeking better government leadership through increased public participation in decision-making. I am willing to accept this challenge." Premier Beauregard Bettie of Canada goes on to say that, "Strengthening relations with citizens is a sound investment in better policy-making by allowing governments to tap new sources of relevant ideas, information and resources when taking decisions." The European Union has

⁹ Berce Jaro; *The influence of Information Society Technologies on Evolution in the Public Administration*; Ph.D. dissertation; Ljubljana July 2004.

¹⁰ Senge, M. Peter. (1990) *The Fifth Discipline. The art and practice of the learning organization*, London: Random House. 424 + viii pages.

sponsored research on eGovernment indicators¹¹ through its "Information Society technology (IST)¹²":

In establishing indicators for eGovernment, the approach taken is to focus on the demand side, i.e. the bottom-up reality of citizens' and businesses' contacts with government. The key is the take-up of the services, regardless of by what body or at what level of government these are delivered. A distinction is made between services for **citizens** and for **businesses**.

At the meeting of the eGovernment-working group on 15 December 2000, it was agreed that Member States should present lists of the twenty-five main public services to citizens and businesses. On the basis of the replies and the discussions at the meeting of the group, a list of **twenty basic public services** is proposed, twelve for citizens and eight for businesses.

These indicators are used to measure on a regular basis the development of an eEurope action plan¹³ in which eGovernment plays a part. With the spread of information networks (Intranet and Internet), the boundaries separating the internal parts of government, levels of government and government and the private or third sectors will become increasingly porous (Five Discussion Pieces, May 2000¹⁴).

Government ICT Infrastructure

One should not be a prisoner of one's own fascination for technology, but rather should concentrate on the human values revealed in Davenport's warning to avoid "glorifying information technology and ignoring human psychology (Davenport, 1994¹⁵)". Failure to take this into consideration means to disregard how users acquire, share and create knowledge through ICT. The literature shows that ICT is assuming an important role within government processes dealing with citizens. ICT should not be viewed as a killing application, but rather as a normal tool for all aspects of governance from policymaking and service delivery through to KM and networking, and learning organization behavior.

Service quality is one of the most researched areas of service delivery and marketing. The common assumption is that high-quality service leads to satisfied

¹¹ See: http://europa.eu.int/information_society/eeurope/action_plan/pdf/egovindicators.pdf, Sept. 2003.

¹² See: <http://www.cordis.lu/ist/>, Sept. 2003.

¹³ See: http://europa.eu.int/information_society/eeurope/benchmarking/index_en.htm, Sept. 2003.

¹⁴ Five Discussion Pieces; *Collaborative Government In The Post-Industrial Age*; Centre for Collaborative Government; http://www.crossingboundaries.ca/reports/ktapublication_may2000.pdf; (May, 2003).

¹⁵ Davenport Thomas H.; *Saving IT's soul: Human-centred information management*; Harvard business review, March-April 1994; p. 119-131.

customers (Jiang *et al.*, Feb. 2003¹⁶). The concept of customer relations' management (CRM) is a central to good governance as it is to good business. There are five dimensions to define the measurement of quality service through understanding expectations and meeting customers' needs (Jiang *et al.*, Feb. 2003¹⁶):

- Tangibles: physical facilities, equipment and the appearance of information system (IS) service providers.
- Reliability: the ability of IS service providers to perform the promised service dependably, correctly and on time.
- Responsiveness: IS service providers' willingness to help customers (users) and provide prompt services.
- Assurance: the knowledge and courtesy of IS service providers and their ability to inspire trust and confidence.
- Empathy: the caring, individualized attention that IS service providers give their customers.

This helps define the main focal points of a government ICT infrastructure which has to be relied upon for interaction with citizens and can provide knowledge for eGovernance to meet all citizens' needs for eDemocracy.

eGovernance

Governance is defined as the traditions and institutions by which authority in a country is exercised for the common good (World Bank Institute, 2003¹⁷). Human history is also familiar with examples of how to govern and do things right at the (local) state, (federal) government and corporate level. It is also one of the most recent subjects of several strategic documents at national level as well as within the European Union (White Paper, 2001¹⁸; e-Europe 2002 action plan¹⁹). The EU sponsored a well – structured and concise "state of the art" research topic of eGovernment indicators performed by SIBIS (SIBIS Report No.8, Dec., 2001²⁰). Governance is strengthening and enhancing democracy.

The developing theories of eGovernance that have been used in different professional sources and are published on the Internet can be narrowed down to the

¹⁶ Jiang James. J., Klein Gary, Tesch Debbie, Chen Hong-Gee; *Closing the user and provider service Quality gap*; Communication of the ACM; February 2003, Vol. 46, No. 2; p. 72.

¹⁷ World Bank Institute; *About Governance*; <http://www.worldbank.org/wbi/governance/about.html> (Sept., 2003).

¹⁸ White Paper; *European Governance*; Commission of the European Communities; Brussels 25.7.2001; COM(2001) 428 final; http://europa.eu.int/comm/governance/index_en.htm

¹⁹ See: http://europa.eu.int/information_society/eeurope/action_plan/index_en, Sept. 2003

²⁰ SIBIS Report no.8: Work-package 2; *Topic research and indicator development: eGovernment*; IST-2000-26276; project founded by European Community under the "Information Society technology" Programme (1998-2002); December 2001

application of information communication technology. They can be divided into three categories: *access to information*, *transaction services*, and (digital) *citizen participation*.

Access to information is a category that demonstrates the openness of government to citizens. With ICT, a time and space spread can be achieved. *Transaction services* – constitute the category that supports consideration of government toward its citizens. With the use of a new ICT services-oriented paradigm, time and space venues can be broadened. *Citizen participation* is a category that defines government cooperation with citizens. The Internet, as an expansion to ICT infrastructure, brings two-way communication and a choice of services and is the medium for information. To follow these categories, processes and infrastructure should be built within public sector institutions that can then be correlated with eGovernance implications.

The challenge and primary role of eGovernance, supported by societal knowledge management and learning organization behavior is to ensure that the emphasis is placed on decision-making (doing the right things) and not just increased efficiency (doing things right). Overall, eGovernance is the ICT enabled route to achieving good governance. Some authors suggest the term iGovernance – for *integrated governance*, since it integrates both processing and communication technologies. However, one argument against the term is confusion this with the term iGovernment, referring to the first stage of moving information into a digital format. Since ICT and governance groups together people, processes, information and technology in the service of achieving governance objectives (Heeks, 2001³⁰), we propose that government supported by electronic means implies integration to execute its role, and uses the term eGovernance to cover this broader sense of governance. Good eGovernance is in its roots integrated and ICT enables governance to carry out the tasks with better control across time and space. The function of ICT is to ensure that both the competitive environment and the cooperative environment can work better for organizations be they companies or governments.

Some World Initiatives

There are various initiatives under way throughout the world to improve government processes using information communication technology within the government process. They have particular labels such as *eAdministration*, as well as *eCitizens* and *eServices* to increase the connection with the citizens and *eInclusion* to ensure the inclusion of all those involved. Broadly, speaking, *organizational governance* (in private and public institutions) includes the laws, regulations and accepted business practices, which together govern the relationship between all the parties, involved in the organizational process, whether the organization faces the market economy or civil democracy. The institution of eGovernance serves two vital and probably inseparable objectives: to *enhance the*

performance and *ensure the conformance* of organizations, with the support of information communication technologies.

Additional complexities arise because the subject is very new with innovative changes appearing almost daily. The overall goal in public sector is to provide better governance, and through that, to help to narrow the knowledge divide and its consequences between societies and also within society. Therefore diverse initiatives aimed at promoting eGovernment principles, as a stage toward eGovernance or viewed as the main process of governance, are ongoing in different parts of the world:

- In 1999, the European Commission proposed a new *eEurope* (within the scope of a communication on the role of eGovernment for Europe's future²¹) initiative to speed up Europe's entry into the digital age and to ensure coherence in the pace of progress of its Member States. The objective of the *eEurope* initiative was an ambitious one: to bring every citizen, school and business on line and to exploit the potential of the new economy for growth, employment and inclusion. The Commission presented the initiative to the European Council in Lisbon in March 2000.
- In Singapore an eGovernment action plan outlines strategies and initiatives to be taken in order to allow Singaporean citizens to obtain the main public services online and radically to innovate the public sector's capability, etc.
- The objective of the Canadian Government On-Line plan is to make the Government of Canada the most connected government in the world to its citizens by 2004, with Canadians able to access government information and services on-line at the time and place of their choosing²².
- The objective of the U.S.A. is to achieve excellence in government, encourage innovation and result-oriented performance, to connect citizens and government and encourage citizens' participation, to attract and develop talented people for public services, and to promote electronic government. The issue of eGovernment is also a tool to strengthen "homeland security": *The New e-Government Equation: Ease, Engagement, Privacy and Protection* (April, 14, 2003) – study²³.
- The Australian strategy on eGovernment will involve the transformation of government service delivery through the appropriate use of new technologies. This phase has the potential to provide better customer focus and access, greater availability of information, improved business processes and greater efficiency. It will improve the lives of Australians by

²¹ See: http://europa.eu.int/information_society/eeurope/2005/all_about/egovernment/index_en.htm, Oct. 2003.

²² See: http://www.gol-ged.gc.ca/pub/serv-can/serv-can07_e.asp, Sept. 2003

²³ See: <http://www.excelgov.org/displayMainSection2.asp?Keyword=preHomePage>, Sept. 2003.

delivering better government and better services to citizens and businesses. This transformation will improve the lives of Australians²⁴.

- A Central American task force for eGovernment – the regional e-Government initiative – was originated in November 2002, when the Government of Honduras, through the Vice-President of the Republic, Armida de López Contreras, with the support of the United Nations Department for Economic and Social Affairs (UNDESA) and the Government of Italy, jointly organized in Tegucigalpa a “Conference on Information and Communications Technology (ICT’s) and e-Government for Regional Development and Integration”²⁵.
- China’s leaders have launched a series of online programs to accelerate the government’s pace of *implementing* and *using* the information economy by improving China’s current government information management systems and to help promote the country’s economic development. The Government Online Project (GOP) is a three-stage initiative: Stage One focused upon connecting 800-1,000 government offices and agencies to the Internet; Stage Two focuses on having government offices and agencies move their information systems into compatible electronic form; and Stage Three – planned to occur sometime late in the decade – will see government offices and agencies becoming paperless. The purpose of the GOP is to create a centrally accessible administrative system that collects and transports data to and from users, users being the public and the enterprise system, as well as government departments²⁶.

Initiatives in the EU

A Ministerial conference at Bonn on 6-8 July 1997 devoted to "Global information networks" issued a declaration to *putting people's needs at the center* and stressed the importance of the role of public authorities. Paragraph 10 stated: "Official information from public authorities should be instantly available electronically. The public right of access to official information should also be guaranteed by legislation securing Freedom of Information". Paragraph 11 states: "It is vital that public authorities provide a favorable environment, which by necessity should include a reliable legal and fiscal framework." In this way, the EU points the direction in which administrations should change to fulfill civil rights in a democratic manner through ICT-enhanced means that support access to and the use of knowledge.

²⁴ See: <http://www.noie.gov.au/projects/egovernment/index.htm>, Sept., 2003

²⁵ See: <http://www.developmentgateway.org/node/130619/>, Sept., 2003

²⁶ See: http://www.trp.hku.hk/publications/e_gov_china.pdf, Sept. 2003

The European Union strategy model for a Knowledge society with eGovernment initiatives pursues principles that are also a driving force in other parts of the world. The Lisbon Council meeting of March 2000 set a new strategic goal for Europe for the following decade: “to become the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth, with more and better jobs and greater social cohesion” (Presidency Conclusions, March 2000²⁷) and invited the Commission to draw a comprehensive eEurope Action Plan. This focus on the knowledge economy will significantly shape the work of the EU and its relations with its newest members in the next several years. The accession process itself, and the process of implementing the *Acquis communautaire*, both obliges and helps the Accession Countries to put in place the legal, administrative and regulatory frameworks necessary for a knowledge-based economy.

At Feira in June 2000, the heads of EU States and Governments agreed to the resulting eEurope 2002 Action Plan. It set out a road map to achieve an information society for all and specified sixty-four targets to be achieved by end of the 2002. The eEurope targets have been monitored regularly through a benchmarking exercise to ensure that Member States stayed on track. This was based on a list of twenty-three indicators, endorsed by the Internal Market Council in November 2000, indicators designed to measure the overall impact of eEurope. The overall assessment of eEurope 2002 is described in the Commission Communication “eEurope 2002 Final Report”. In addition to the above-mentioned goals, the EU added the *eEurope 2003* initiative, which identified a number of basic services to be provided to citizens and business in the field of eGovernment (i.e. to exploit advances in knowledge management). The EU therefore has set the stage for a common European approach to KM and has set up a holistic approach involving specialists through the creation of a European KM Forum. The following are the goals of a common approach to a KM framework in the EU (Coviello *et al.*, Feb. 2002²⁸):

- to provide a holistic view of the KM domain;
- to address all stakeholders in KM;
- to be based on a broad consensus and give a neutral, KM biased and well accepted view of KM;
- to address the information needs of KM beginners as well as the need for a point of reference for KM experts;
- to provide recommendations and links for the first step;
- to include a core KM terminology;

²⁷ *Presidency Conclusions*; Lisbon European Council; March 2000

²⁸ Coviello Angelica, Garavelli Claudio, Gorgoglione Michele, Kemp Jeroen, Ortega Araceli Munoz, Perez Philippe, Pudlatz Marc, Rodriguez Nuria Gallero, Sebastiano Gianni, Scozzi Barbara; *Standardised KM Implementation approach*; European KM Forum; IST project No 2000-26393; Final report February 2002

- to represent the specific challenges and advantages of KM made in the EU;
- to be able to factor in other existing and/or emerging KM standards;
- to be in the public domain.

Under the EU framework of the sixth *Community Research & Development Information Program* named “CORDIS”, a project called: "Citizens and Governance in a Knowledge Based Society" pursued the following main objectives: *The activities carried out in this area are intended to mobilize in a coherent effort, in all its wealth and diversity, European research in economic, political, social sciences and the humanities that are necessary to develop an understanding of, and to address issues related to, the emergence of a knowledge-based society and new forms of relationships between its citizens, on the one hand, and between its citizens and institutions, on the other* (CORDIS, May 2003²⁹) was sponsored.

From the EU perspective, there is a broad consensus of the need to become the most competitive and dynamic knowledge-based economies in the world, with all the necessary political and financial support from the EU Commission and Member States. These give researchers the opportunity to perform work in different fields within the overall grand objectives of inclusion for all and growth for all. The new redefined Lisbon strategy that is now in process (“A new start for the Lisbon Strategy” see: http://europa.eu.int/growthandjobs/index_en.htm) reshaped some focuses and made more important the following areas (as Mr. José Manuel BARROSO, President of the European Commission at the ETUC Conference, Brussels, March 1st 2005 redefined “The Lisbon strategy – a key priority of the European Commission”):

- Strategic objectives – **prosperity, solidarity and security** - for the European Union over the next five years.
- A new direction for the Lisbon agenda – refocusing efforts on **action to deliver growth and jobs**.
- Set out an **ambitious Social Agenda**, which complements a refocusing of the Lisbon strategy. It outlines vision of EU social policy for the years 2005 to 2010. It clearly demonstrates willingness to maintain and reform European social model.
- Started reviewing the overall approach to **sustainable development**.
- At the centre is approach of a **vision of a strong, dynamic and reforming Europe**:
- A Europe that offers people **work and opportunity**.
- A cohesive and inclusive continent that can deliver **real improvements in the standard of living and our quality of life**.
- For everyone.
- In every part of the European Union.

²⁹ See: <http://www.cordis.lu/citizens/citizens.htm>; (May, 2003);

KM, Networking & eGovernment

One of the measures that is commonly used to show the growing importance of the Internet is Metcalfe's law which states: "The value of a network is proportional to the square of the number of nodes". Applied to the Internet, the value of being connected to it grows exponentially as the network grows, while the cost per user remains the same or even diminishes. This captures only two dimensions of the whole picture – the technological and financial. However, in the same manner as information communication technology as whole, the Internet is an enabler for humans to communicate and carry out activities across space and time without the need to travel. This gives individuals an opportunity to make geographically independent contacts and to form communities on a basis of practice, interest or concern and through that to carry out knowledge management and knowledge networking (KM&N).

Despite the existence of explicit knowledge "within" the Internet, the answer to sustained growth and leadership in the information society is not computers connected to information and databases on the Internet, but the cognitive competence of knowledge workers. One veteran of on-line politics argues that the political potential of the Internet lies not in connecting people to politicians, still less in online voting, but more in the possibility of bringing citizens together to help themselves (Crabtree, March 2003⁷). Therefore, the key innovation is the use of computer networks – from intranets to the Internet – for creating a wealth of new digital connections (Heeks, 2001³⁰):

- Connections within government – permitting joined-up thinking
- Connections between government and NGOs/citizens – strengthening accountability
- Connections between government and business/citizens – transforming service delivery
- Connections within and between NGOs – supporting learning and concerted action
- Connections within and between communities – building social and economic development.

Davenport and Prusak (Davenport, Prusak, 1998³¹) have also defined knowledge as deriving from minds at work: "Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates in the minds of the owners of knowledge. In organizations, it often

³⁰ Heeks Richard; *Understanding e-Governance for Development*; i-Government Working Paper Series; ISBN: 1 902518934; Institute for Development Policy and Management; 2001; http://www.man.ac.uk/idpm/idpm_dp.htm#ig; (May, 2003)

³¹ Davenport Thomas H., Prusak Laurence; *Knowledge: How organizations manage what they know*; Harvard Business School Press; Boston, MA; 1998

becomes embedded not only in documents or repositories but in organizational routines, processes, practices and norms.” As most of the processes within public administration organizations are knowledge driven, knowledge within these institutions, procedures and people should be carefully managed.

A growing number of politicians see eGovernment as part of a new vision of government for the Twenty-First Century. For them, eGovernment is much more than a tool to put services online. They see the Internet as a “transforming technology”, much like the printing press or the steam engine. It offers citizens new forums within which to engage each other and elected and public officials (Crossing Boundaries, May 2003³²). Governments are looking to ICT for ways to extend the public space, and extend access to the public space, by increasing citizen involvement and commitment. However issues arise around the changing role of the politician - and his/her relationship to constituents, the implications for disenfranchising those who are unable or unwilling to participate in the new electronic relationship, the use of deliberative polling, etc. (Crossing Boundaries, May 2003³²). The Internet is a tool to provide so - called single points of access twenty-four hours a day seven days a week (24/7) from anywhere, to offer citizens a *one-stop government shopping* facility. The complexity of supplying information and services on-line through the Internet reflects on both the difficulty and richness of the eGovernance concept. The challenge behind connecting and offering services and information electronically, is about how organized and networked are the back-offices of government organizations. Hence, it is more about internal changes in organizational structures than about the technology. These changes bring together human networks and ICT (Intranet or Internet) networks as enablers. Through such networks, officials can communicate across departmental or intergovernmental boundaries, exchanging ideas, sharing information and providing expert advice to other parts of a public super-system, in ways and at speeds that far exceed what was possible even a few years ago (Alcock *et al.*, Jan. 2001³³). It is about the driving forces of eDemocracy, combined with KM and Networking and LO behaviour, enabled by an operating with an enabling ICT structure.

The moral here is that building the new IT infrastructure is not enough. Nor is it enough to ensure that a country has the appropriate knowledge, skills and training to use the technology effectively. To reap the real benefits of the technology, one must use these tools innovatively to create new products and new ways of doing things. However, thinking and acting innovatively require a special kind of learning environment. Innovation requires a culture in which reflection and experimentation are encouraged, error is expected and a personal commitment to excellence is the norm. It requires what perhaps can be described as a culture of personal and collective openness to change (Crabtree, May 2000¹⁴). Through this kind of thinking,

³² Crossing Boundaries; Canada; <http://www.crossingboundaries.ca/>; (May, 2003);

³³ Alcock Reg, Lenihan G. Donald; *OPENING THE E-GOVERNMENT FILE: Governing in the 21st Century*; Results of the Crossing Boundaries Cross-Country Tour; Changing Government Volume 2; January 2001, ISBN 0-9687210-1-X

a new networked or collaborative model of government is emerging and it is based on the KM & networking that are made possible by the Internet.

Knowledge and KM

A review of the literature quickly reveals that knowledge is not easily defined. Most researchers deal with different types of “knowledge” and breakdown knowledge into a structure of knowledge "building blocks" instead of focusing on the implications stemming from the use of different types of knowledge. Numerous articles treat knowledge as a uniquely important input that can lead to a greater degree of competitive advantage for an organization. There are alternatives that focus on how to manage knowledge, how it is networked and how learning organizations are organized according to a set of principles that give them knowledge to perform. “To conceive of knowledge as a collection of information seems to rob the concept of all of its life ... Knowledge resides in the users and not in the collection. It is how users react to a collection of information that matters (Churchma, 1971³⁴)”. Some, such as Peter Drucker, declare that: “Knowledge is just not another resource like labor, capital, but is the only important resource today”. It is clear that knowledge is a unique resource in that its use can expand if shared within (or beyond) an organization.

Interactions with people through different means and tools as well as one’s own experience are part of the process that leads to new knowledge. Nonaka and Takeuchi focus on knowledge creation through the interaction between tacit and explicit knowledge using four different models of knowledge conversion (Nonaka,Takeuchi, 1995³⁵):

- socialization – from tacit to tacit;
- externalization –from tacit to explicit;
- combination – from explicit to explicit;
- internalization – from explicit to tacit.

Nonaka and Takeuchi stated, with reference to their knowledge-creation company (Nonaka, Takeuchi, 1995³⁵): “In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge. Successful institutions are those that consistently create new knowledge, disseminate it widely through an organization and quickly embody it in new services, technologies and products”.

The literature on knowledge refers to the codification of “factual knowledge based on prior experience”, which is generally tacit knowledge and is termed as *knowing-that*, similar to the skills related “*know-how*”. Although *tacit* knowledge lies

³⁴ Churchman C.W.; *The design of inquiring systems*; Basic books; New York, NY, 1971; p.10

³⁵ Nonaka Ikujiro, Takeuchi Hirotaka; *The knowledge-creation company*; Oxford University Press; New York, NY; 1995

at the very basis of organizational knowledge creation, its nature renders it “highly personal and hard to formalize, making it difficult to communicate or to share with others” (Nonaka, Takeuchi, 1995³⁵). A codification of “factual knowledge which is acquired knowledge” could be tacit or explicit. Current conceptions and approaches to KM focus on handling *explicit* knowledge that is “transmittable in formal, systematical language” and can be stored in specifications, reference manuals and institutional handbooks (Nonaka, Takeuchi, 1995³⁵). They pay less attention to handling tacit knowledge within organizational processes.

Therefore, new knowledge is individually understood with reference to the accessible mental representation, which consequently, is modified by fresh knowledge. It is the flow of “meaning”, and not the flow of “information”, that constitutes knowledge flow (Malhorta⁵³). This signifies that “successful knowledge transfer involves neither computers nor documents but rather interactions between people” (Davenport, 1995³⁶). ICT can thus only be a facilitator and tool to foster greater interaction of knowledge and help to sustain the development and sharing of knowledge.

To understand and manage knowledge in organizations, we need to understand what knowledge is, how it is used, what its management consists of and how we could improve organizational knowledge processes. For KM we have to be able to view organizations as knowledge processes and to discuss ways to implement formal and informal communication structures and produce equipment (networks and applications) that advances organizational knowledge processing. The recent emphasis on KM arises out of the need for organizations to manage resources more effectively in a hyper-competitive, global economy (Suresh, 2003³⁷). However, there is a challenge in KM. With KM, we are trying to manage something where many of the important elements cannot be easily captured or managed. As a result, sometimes it looks like there are as many descriptions of KM as there are people who are practicing it.

Looking at the goal of knowledge management, one can see that it is not knowledge itself, but the *handling of* (management of) the people who have the knowledge that should be regarded as the object of management tasks and measures (Bettoni et al, April 2002³⁸). An essential element of managing knowledge is the creation of an environment where people within an organization trust one another, and trust leadership, to share and create knowledge so that organizations can perform better in developing an Information society environment

³⁶ Davenport Thomas H.; *Think tank: The future of knowledge management*; CIO; December 15, 1995

³⁷ Suresh Ram; *Knowledge management – An overview*; <http://www.knowledgeboard.com/cgi-bin/library.cgi?action=detail&id=1275>; (May, 2003)

³⁸ Bettoni C. Marco, Schneider Sibylle; *The essence of knowledge management: A more appropriate understanding of knowledge*; Knowledge Management 2002; London April, 17th 2002; <http://www.knowledge-management.co.uk/>; (May, 2003)

and/or win new business and compete efficiently (Kermally⁵⁴). While different ICT tools may support KM (collaboration software, document management and workflow systems, research support systems, retrieval tools, warehouse systems, data discovery tools) it is the culture of knowledge use within the organization that will determine the effectiveness of those tools. The literature contains good descriptions of types of knowledge but is less good at describing processes of managing it, i.e. useful definitions of how to apply KM and, especially, how to measure the performance of KM.

Knowledge Value and Aspects

Economists view value as the sum of flow of benefits (or income) extending into the future, summed and discounted, using an appropriate interest rate, to a net present value measured in a meaningful unit of currency. Any capital and currency is dependent upon its market. It is the same with knowledge. Attempts to create knowledge and to value and measure it are perceived in the literature as being very important. The speed of change, competition, the ever faster development of new services and products, reductions in the workforce forced by cost reductions, life-long learning and more are the key reasons why knowledge and KM play an important role in any organizations pursuit of its objectives. A crucial importance in governance, where knowledge is the most valuable asset, is whether employees who possess skills and knowledge do or do not use them routinely in their work. Individual and organizational proficiency remain sterile and of little value to the organization when the technical, organizational or cultural environment are not supportive of knowledge use and networking.

The measurement of the value of knowledge can be perceived from two main perspectives (Perkmann, 2002³⁹):

- The macro view: quantifying the intangible assets of an organization by using tools such as the Balance Scorecard, score boards, index and navigators.
- The micro view: how the impact of individual knowledge projects can be assessed and quantified.

The main advantage of the macro approach is that it permits an organization to consider purely financial performance indicators. In an organization, most financial indicators are rigid and essentially refer to past performance, therefore reflecting outcomes rather than value-generating drivers (Perkmann, 2002³⁹).

³⁹ Perkmann Markus; *Measuring knowledge value? Evaluating the impact of knowledge projects*; Knowledge & Innovation Network; KIN brief #7 - 26/07/02; <http://www.ki-network.org>; (May, 2003)

Many authors consider *human capital* as formal education, training and on-the-job learning, which is personified and "stored" in the employee's brain. It is represented in the organization as a mix of explicit and tacit knowledge based on a combination of empathy, intelligence, skills and expertise. The human elements of the organization are those that are capable of learning, changing, innovating and providing the creative thrust that, if properly motivated, can ensure the long-term survival of the organization. Research conducted (Bontis, 1999⁴⁰) has therefore proposed the following types of accounting models for measuring human resources:

- Cost model – considering the historical, acquisition, replacement or opportunity cost of human assets
- Human resource models – combining non-monetary behavior with monetary economic value models
- Monetary emphasis models – calculating discounted estimates of future earnings or wages.

The literature shows that the question whether the organization becomes a knowledge-driven organization depends ultimately on governance, leadership, culture and trust (Kermally⁵⁴) and not on measurement models. Unlike capital and labor, the proper management of knowledge strives to treat it as a "public good" within the organization (Ernest & Young, Avg. 1999⁴¹):

- Knowledge is discovered and made public; there is zero marginal cost to sharing it with more users.
- The creator of knowledge finds it hard to prevent others from using it. Only legal instruments (intellectual property rights – IPR, copyrights, trade secrets protection and patents, trademarks, etc.) provide the creator with some kind of protection.

In the field of knowledge management, the intangibles capitalizing on different forms of *goodwill* can be divided into three groups:

- People – Human Capital, Individual Competence, Intellectual Capital, etc.
- Inter-organizational procedures – Structural Capital, Partners' Capital, Organizational Capital, Internal Activities, etc.
- Outside the organization – Community Capital, Customer Capital, Supplier Capital, Relationship Capital, Social Capital, External Relations, etc.

While not all the problems of managing knowledge can be solved with technology, Lethbridge (Lethbridge, 1994⁴²) demonstrates how some of the most

⁴⁰ Bontis Nick, Dragonetti C. Nicola, Jacobsen Kristine, Roos Göran; *The knowledge toolbox: A review of tools available to measure and manage intangible resources*; European Management Journal; Vol. 17, No. 4, 1999; p. 391-402

⁴¹ Ernest & Young; *The knowledge Economy* a submission to the New Zealand Government by Ministry for Information Technology's IT Advisory Group; August 1999; <http://www.knowledge.gen.nz/>; (Apr., 2003).

⁴² Lethbridge, T.C.; *Practical Techniques for Organizing and Measuring Knowledge*; Ph.D. thesis; University of Ottawa, Ottawa, Ontario, Canada; 1994;

important ones can be. Lethbridge describes his experience with the CODE4 system for acquiring and managing explicit knowledge. Knowledge-based systems applications are frequently constructed as a knowledge base, or rule base, component coupled with a relational database component (Debenham, 1997⁴³). Knowledge discovery is a rapidly evolving discipline that uses tools from artificial intelligence, mathematics and statistics to tease knowledge out of data warehouses (O'Leary, March 1998⁴⁴). In these approaches, knowledge is treated as an abstract "object" and technology is assigned a primary importance in KM. Human and organizational aspects are left out.

Churchman's emphasis on the human nature of knowledge creation seems more pertinent now than it was three decades ago given the increasingly 'wicked' environment characterized by a discontinuous (Nadler et al. 1955⁴⁵) and "wide range of potential surprise" (Landau et al. 1997⁴⁶). By this, we mean an environment where change factors can come at a rapid pace and from a great distance. The new business environment defeats the traditional organizational response of *predicting* and *reacting* based on pre-programmed heuristics (Malhorta⁵³). Instead, it demands more *anticipatory* responses from the members of an organization, who in return need to play a more *proactive* role in the faster cycle of knowledge creation and action (Brown, March 1997⁴⁷).

Organizational Management and Knowledge

In recent decades, an examination of the ever-increasing rate of change in organizational environments has been understood as a response to an increase in the environmental turbulence faced by organizations. The growing complexity and turbulence of the external environment impose upon institutions a greater demand for processing information and knowledge management in support of taking quick decisions (Huber, 1984⁴⁸). A similar situation exists for the delivery of good governance. This has motivated managerial and organizational interest in creating,

⁴³ Debenham John; *Constraints for knowledge maintenance*; key centre for advanced computing science, Sydney, Australia; <http://ksi.cpsc.ucalgary.ca/AIKM97/debenham/debenham.html>; (May, 2003);

⁴⁴ O'Leary E. Daniel; *Enterprise knowledge management*; Computer magazine; March 1998; Vol. 31, No. 3; p. 54 - 61

⁴⁵ Nadler D.A., Shaw R.B.; *Change leadership: Core competency for the twenty-first century*; In discontinuous change: Leading organizational transformation (D.A. Nadler, R.B. Shaw & A.E. Walton); Jossey-Bass; San Francisco, CA; 1955

⁴⁶ Landau M., Stout R. Jr.; *To manage is not to control: Or the folly of type II errors*; Public Administration Review; March/April 1979; p. 148-156

⁴⁷ Brown S.L., Eisenhardt K.M.; *The art of continuous change: Linking complexity theory and time-paced evolution in relentless shifting organizations*; Administrative Science Quarterly, 42(1); March 1997; p. 1-34

⁴⁸ Huber George P.; *The nature and design of post-industrial organizations*; Management Science; August 8, 1984; p. 928-951

retrieving, archiving, storing, sharing and disseminating institutional knowledge, and using advance information communication technologies to achieve those goals.

The literature increasingly focuses on how organizations and institutions implement ways of accumulating employees' knowledge in electronic databases so as to use them as repositories of the shared, company/institutional wide "structural capital" (Steward, 1997⁴⁹).

Numerous articles note that many organizations have made a big mistake in trying to focus on managing tacit knowledge rather than explicit knowledge, often because they are worried they will lose secrets if their explicit knowledge is passed on to people outside the organization (Heene, 1999⁵⁰). Organizational knowledge, information and data exist at, and relate to different levels of the organizational structure. They are also linked and interlaced between different functional segments of an organization. Most organizations are engaged in elements of organizational KM, but it is insufficiently recognized as such, and as a result poorly used, managed and evaluated.

Today knowledge management, especially within government, is seen as an institutional KM effort to archive "best practice" in order to facilitate efficient problem-solving processes. It usually falls short of using KM to create a climate and culture of known practices and assumptions, which are stored in an employee's brain. This can constrain an organization to the limits of the Drucker Theorem of "doing more of the same better and better, however, with diminishing marginal returns" (Drucker, 1994⁵⁵). On the other hand, there is the risk of, Senge's warning: "just like the 'boiling frog' that is unable to sense the gradual change in temperature and ultimately boils to death" (Senge, 1990⁵¹). Therefore, one should avoid institutional procedures of permanent improvements based on a Cartesian (1596-1650) approach where: "to understand the problem one should look at details, focus the mind on the smallest objects and through that influence tune the complex problems".

Competition forces organizations to try to reduce costs. Unfortunately, one of the methods used is also to downsize staff, to cut down the number of employees. This can lead to a serious loss of knowledge within organizations. However, efforts to capture the knowledge of employees can reduce the loss of critical information (O'Leary, March 1998⁴⁴). The importance of capturing informal knowledge has therefore been augmented by formal KM methods. As well, the ever-faster spin of new invention is forcing organizations to compete on the basis of the management of new knowledge. The dynamism involved in proper KM has led to the inadequacy of existing financial model representations and ICT strategies to achieve substantial benefits for many organizations. Also, a role for life-long

⁴⁹ Steward T.A.; *Intellectual capital: The new wealth of organizations*; Doubleday / Currency; New York, NY; 1997

⁵⁰ Heene Aime; *Learning on the edge*; IS Interview; Information Strategy; December 1998/January 1999; p. 38-39

⁵¹ Senge, M. Peter; *The Fifth Discipline. The art and practice of the learning organization*, London: Random House. 424 + viii pages, 1990

learning within KM processes is recognized in several related research areas and as evidenced by dissertation work in several fields.

Learning Organization

A revolutionary application of the digital technology is eTeaching and eLearning. The technology has finally broken the insidious link between quality and exclusivity (John, 1997⁵²). Given the importance of knowledge, the new technologies are allowing the de-monopolization of teaching and broadening access to learning. This brings a new paradigm in all aspects of organizational processes – in particular the *LO paradigm* and the process implied by being a learning organization. In all its parts, a LO engages continuous learning.

For humans or employees, life-long learning is a key element for acquiring new knowledge, irrespective of profession or the elapsed time since the completion of formal education. In organizations, a growing interest in knowledge management stems from the realization that, in the knowledge society, organizational knowledge is a strategic corporate asset that needs to be collected, retained, updated, disseminated and applied to future organizational problems (Malhorta⁵³).

In an ever-faster changing market, an organization has to embrace different and more “quick response” processes to fulfill its objectives. Various articles throughout the world repeat the theory that information and knowledge play a crucial role in creating a demand for a learning behaviour culture within organizations, thus forming the demand for, and the basis of, a LO culture. Successful infrastructures that facilitate information and KM lay increasingly within KM strategies that are becoming increasingly computerized. Technology is hence a valuable facilitator rather than a central idea at the core of KM. KM is about people and how they are managed to collaborate and share knowledge. Through all these resources, an organization can carry out innovative means and protect its intellectual assets. Increasingly, the value of intellectual capital has become embedded in end-products and services and not just a factor in their production (Kermally⁵⁴).

A restricted perspective on the role of information communication technologies in organizational knowledge management may have a detrimental influence on the institutional learning process and adaptive capabilities (Drucker,

⁵² Daniel John; *Joining the knowledge revolutionaries: The evolving role of distance learning*; Global Knowledge '97 - Understanding the global revolution; Toronto, CA; 1997

⁵³ Malhorta Yogesh; *From Information management to Knowledge management: Beyond the 'Hi-Tech hidebound' systems*; Knowledge Management for the Information Professional; Medford; N.J. Information Today Inc.; p. 37-61

⁵⁴ Kermally Sultan; *Managing knowledge without tears*; Knowledge management for beginners; <http://www.knowledgeboard.com/>; (May, 2003)

1994⁵⁵). Authors are pointing out that a restricted perspective is increasingly problematic given the dynamically changing organizational environments that require the rapid interpretation of information, as well as its quick evaluation and use (Malhorta⁵³).

In the early literature a *computer-centric system* of organizational knowledge management is defined by Mason & Mitroff as: “Implicitly assumed ... a well-structured problem, a data or model basis, an operational control-hierarchical authority organizational context and an impersonality computer printout mode of presentation” (Mason, Jan. 1973⁵⁶). This view of the conceptualization of digitally organized knowledge repositories went some distance beyond the idea of computerized routines that were originally embedded in standard operating procedures (policies, practices, rules and norms). This earlier model has evolved beyond the notion of shared knowledge databases, and now encompasses applications that support a knowledge sharing culture within an organization that is based on the human and social features of the institution. This approach offers better support for dynamic environments with a multiple perspective on solutions and diverse interpretations of what constitutes knowledge, as well as supporting a process open to diverse future views of the organizational KM.

Knowledge resides within parts of an organization or community, and within individuals. Unlike an individual, with a centralized brain and coordination system, knowledge in an organization is dispersed and hard to mobilize and can be lost when individuals leave (Lanfranco, May 1999⁵⁷). Research work reveals that as managers increasingly realize the importance of their employees knowledge, they start to measure and develop the skills of their staff and in so doing enhance of the organization culture. They also begin to worry about how to retain and share it within the organization. Argyris and Schon introduce a proposal for a process for developing organizational learning through three different learning loops (Argyris *et al.*, 1978⁵⁸):

1. Single – which means it merely detects and solves problems based upon existing premises.
2. Double – involves the detection and correction phase as well as modifying the underlying process by establishing new premises.
3. Tripple – involves understanding the whole process or learning how to learn.

A double-loop learning process of organizational learning assumes implicitly or explicitly questioning and rebuilding existing perspectives, interpretation

⁵⁵ Drucker Peter F.; *The theory of Business*; Harvard business Review, September-October 1994; p 95-104

⁵⁶ Mason R.O., Mitroff I.I.; *A program for research on management information systems*; Management Science, 19(5); January 1973; p. 475-487

⁵⁷ Lanfranco Sam; *Issues and problems in distance learning*; A discussion paper for CIMAF'99: Havana Cuba; March 22-26, 1999.

⁵⁸ Argyris C. and Schön D.; *Organizational learning: A theory of action perspective*; Addison-Wesley; Reading; Ma, USA; 1978.

frameworks and decision premises. Furthermore, it involves continually updating the knowledge and skills of employees:

1. Changes their professional situation (life-long learning)
2. Changes their outputs (goals) and
3. Changes the procedures (organizational adaptability to environment) necessary to achieve these outputs.

These are key elements that drive modern institutional learning cultures.

How should the organization ensure that its long-term aspirations are fulfilled while permitting the existence of subjective, interpretative, constructive and social interactive processes of knowledge creation (Malhorta⁵³)? The most critical task of top management, publicized by different researchers, is: “To conceptualize a vision about what kind of knowledge should be developed and to operate it into a management system for implementation” (Nonaka, Takeuchi, 1995³⁵). This knowledge vision fosters the personal commitment of middle management and frontline workers by providing ‘meaning’ to their daily tasks (Malhorta⁵³). By interpretive flexibility to all institutional members, it also highlights those who are then better tuned to, and become accustomed to, multiple views of prospects for the future and changing circumstances.

Reflections

Bearing in mind all of the above descriptions relating to knowledge, KM, knowledge creation and valuation, and learning organization initiatives, models of knowledge representation and information communication technologies, there is no iron rule of application here. All attempts to embrace knowledge are valid research initiatives that add bits to the human understanding of the processes that reveal, help to understand and successfully apply knowledge to problems. They all uncover the underlying processes that are going on in organizations and are connected to human activities. Not all add new value as analytical tools; some have excessively narrow approaches, while others provide only one perspective on knowledge-based organizations. However, most contribute various theoretical perspectives that have added to our understanding of how organizations learn, what constitutes organizational knowledge and what the implications of knowledge and ICT are for organizational processes.

Today’s knowledge management models are mostly oriented toward financial outcomes and for determining the financial health of an organization. Financial statements provide historical information that can be put together in a variety of ways, even within standard accounting practices (SAP). As seen in several big fraud cases (Enron, WorldCom etc.), the results from measuring intangibles can be very problematic. Generally, all training and education expenditures are on the cost side of balance sheets. Knowledge is mainly updated and shared through education

and training. Compared with other investments that organizations make, e.g. tooling, purchase of assets, etc. knowledge is investment in people. For that reason it should be normal to transform knowledge – related expenses from the cost side to long-term investments, with all the appropriate implications. It would thus be possible to calculate intangible assets more precisely using contemporary models.

The models suggest that in the private sector it is very difficult to measure knowledge as an asset or as a flow. Measuring knowledge stocks, uses and transfer is even more complex in the public sector. Measuring and evaluating knowledge and KM in government, with no market value on goods and services delivered, is therefore even harder. KPMG (KPMG, Jan. 2003⁵⁹) has suggested that KM is better defined as a systematic and organized approach to improve an organization's ability to mobilize knowledge performance. The definition is of some help but leaves unanswered how to evaluate "knowledge performance". The development of business simulation applications has provide managers with an innovative alternative to conventional training programs, gives them a new opportunity to rehearse fresh approaches at low risk and helps them to adapt to ever-faster changes. In addition, managers today being faced with unstable organizational challenges that are far more complex than ever before, it is suggested that knowledge and KM simulations would be useful training devices. This will give the proper tools to managers, who nowadays do not know the value of their own organizational intellectual capital and are therefore deprived of such information when "blindly" carrying out right-sizing, downsizing and the reengineering of organizations in the pursuit of performance.

Case Study

The term Information Society Technologies is a very broad and as yet ill-defined socio-technical concept. In practical research case it is used in a general sense to cover the social, economic, and technological innovations and changes that accompany the introduction of information communication technology into a particular social process, that of public administration, using the public administrative units of Slovenia as a case study. More specifically, in this research the term is used to structure and describe relations between Information Communication Technology (ICT), KM and Networking (KM&N), and LO behavior, in their collective influence on governance (eGovernance) in public administration.

In research, we formulated a model of information society relationships, collected empirical data, conducted statistical tests and analyzed the relationships between a selected set of social, economic and technological variables within the Slovenian public sector. Our ultimate interest, the relationship between information

⁵⁹ KPMG; *Insights from KPMG's European knowledge management survey 2002/2003*; Results January 2003; <http://www.kpmg.nl/kas>; (April, 2003)

society technologies and good eGovernance was pursued by focusing on a set of basic hypotheses:

1. ICT stimulates administrative efficiency: The scope of ICT and its impact on the quality of processes and results, and organizational processes potentially leads to good public administration support for eGovernance.

Although efficiency was not directly measured in the study, some guidelines emerged through pattern recognition within the data, from correlation tests, and with reference to the theoretical model. At present basic ICT infrastructure is well deployed within Slovenian public organizations. It is used to support tasks and processes that predate the arrival of the ICT infrastructure. ICT solutions have been implemented on top of already established organizational structures. In a sense, such pre-existing tasks and processes were mainly just “automated”. The fact that such structures need to be adapted to the potentialities of ICT before ICT services are effectively deployed is not yet widely accepted. Original organizational structures (hierarchy, centralization, information and knowledge hoarding, poorly develop KM responsibility, a weak learning organization culture, etc) are for the most part electronically assisted, but not transformed in light of the capacities of information communication technologies. This does not ensure the best application of ICT to the tasks of public administration. It also transfers pre-existing “literal” administrative problems to the “virtual” digital venue. Centralized and hierarchically organized institutions are prone to resist process changes that result in quality of efficiency gains. Thus the application of ICT and eServices alone, in the absence of complementary strategies that address hierarchy, KM and learning, can only go so far in increasing the quality of services and eGovernance. The same constraints apply to promise ICT gains for eGovernance. Analysis within the context of the model used in research suggests that a vision of the whole change environment, including new approaches to knowledge management and networking and learning organization behavior, supported with ICT tools, is necessary if the desired effects are to be obtained with regard to good eGovernance.

2. ICT does not automatically stimulate the effectiveness of eGovernance: The investments in ICT hardware and the accompanying components and training of users are very costly. The optimization of these effects requires a supplementary and complex process that, in turn, significantly influences the role and deployment of ICT within the organization.

Misunderstanding the role of ICT, and underestimating the impact of other social factors (knowledge management, organizational attitude toward knowledge and information sharing, etc) and economic factors (budget and financing of ICT, permanent learning, etc) will lead to false notions about how to create and sustain effective eGovernance.

The research shows that these two sets of factors play a major role in effecting good eGovernance. The visionary financing of the purchase of hardware,

software and programming services also demands a well-developed system for the permanent training of employees. This training should cover the field of ICT and both professional and intra-personal and managerial topics in order to obtain results in KM&N and LO culture. The model results show that nurturing proper skills and knowledge culture training stimulates the optimization of the complementary effects and can, through the proper utilization of ICT, influence good eGovernance.

3. Efficiency and effectiveness of eGovernance with regard to policy, planning and program delivery due to ICT, significantly increases with the application of the principles of the LO and KM.

The efficiency and effectiveness of eGovernance with regard to policy planning was not researched within the study. In other words, we did not estimate rates of return on various inputs, nor did we evaluate citizen/customer satisfaction with the various feathers of eGovernance. However, useful and interesting insights were obtained through statistical analysis and data mining.

Within Slovenian administration there is a very low level of interaction on strategy planning between top management and ICT professionals concerning ICT security and protection, defining eServices, Internet-related subjects (web construction, content and services, web updating, etc) are rarely dealt with at board meetings. As can be seen from the results of the application of the model, the impact of KM and LO strategies on eGovernance is marked. Rewarding staff for knowledge and information sharing, cooperation between professions and an assigned responsibility for KM&N, all play an important role in the use of ICT to achieve good eGovernance. The capacities of the ICT-enabled digital venue do not have a strong impact without the accompanying organizational changes driven by attention to KM and a learning organization culture.

The Slovenian public administration is still too hierarchical to understand or introduce the changes needed in the field of social and economic organization. The efficiency and effectiveness of eGovernance within Slovenian public administration, working through iGovernment and eGovernment, cannot be significantly increased if the principles of the LO and KM are not applied in parallel.

Implication from Case Results

A strategy involving a strong inter-linkage of all the factors mentioned (social, economic, technology) and their appropriate adaptations are necessary components of a quest better eGovernance. The solution involves also recognizing the *human dimension*. Addressing Knowledge (personal and organizational), sharing knowledge and information, adopting learning organization behavior, and addressing other organizational challenges needs to be backed up by economic resolve, *i.e.*, by *rewarding* behavior, and providing adequate budget and financing. Good governance via eGovernance may be a solution by new ICT, but the

The figure above shows a multidimensional method used in research that covers the introduction of the digital venue, KM and LO behaviour within public administration. According to the OECD service segmentation schema (stage 1 to 4 – developed by the Australian National Audit Office⁶⁰) a prerequisite – the digitalization of documents and processes (iGovernment), is not among defined stages. These two stages introduce a new perspective on: a) an organizational digitalization of documents (a stage 1) and b) a digitalization of services (a stage 4) that has not yet been offered to users (e.g. through the Internet).

Slovenian organizations tend to employ the digital venue mainly for internal use. eGovernment represents the ultimate stage (4) according to the OECD definition. KM and LO initiatives are segmented with a proposed Slovenian public administration “Action plan” (below) developed through the presented research, an action plan that makes use of the multidimensional approach. This method helps to capture all the human and organizational factors that are important for delivering good eGovernance, and goes beyond the formation of ICT focused actions plans (iGovernment, eGovernment).

The suggestions and recommendations coming from case study for the Public Administration sector are based on the results of the research study, on data modeling and on the literature as follows:

I. Only a strong interconnection between *Social, Economic* and *ICT* factors can drive good *eGovernance* and in turn have an impact on the *evolution* of public administration itself. These interconnections involve:

- a.
 - i. KM and networking (KM&N);
 - ii. A LO culture and behavior;
 - iii. Information communication technology (ICT).
- b. High interdependency of ICT and
 - i. iGovernment and eGovernment;
 - ii. KM and networking;
 - iii. LO strategies;
 - iv. Good eGovernance delivery.

II. To achieve good eGovernance on the basis of better governance – decisions are: wisely, faster, timely, widely extended, and correctly – with the support of a digital venue the research groundwork proposes an “eGovernance action plan” with the ensuing measures and priorities. The action plan should be based upon:

1. Commitment of top government officials;
2. An independent in-depth examination of current status;
3. Vision and goals to achieve eDemocracy through better eGovernance;

⁶⁰ The OECD eGovernment Project defines four possible stages of e-service delivery (based on an Electronic Service Delivery model developed by the Australian National Audit Office) see: <http://www.anao.gov.au/WebSite.nsf/Publications/2C3CDF64278872A9CA256FA2007F445E>

4. Predefined measurement system and priorities;
5. Responsibility of key actors to carry out select tasks;
6. A defined time-frame and budgetary support.

Through the proposed Action plan an evolutionary strategy for public administration units to embrace the goal of good eGovernance can be ensured. It is not enough for a public administration, or any other organization, to apply knowledge management to a static body of knowledge, only seeing ICTs as a tool for managing that knowledge better. In the digital age-old knowledge, information and skills can quickly become outdated as circumstances change and as new knowledge emerges. It follows that the good use of ICTs in the pursuit of the work, mission and vision of any organization, including a public administration, requires the organization to combine a strategy of KM with a favorable attitude toward learning culture as an integral component of its KM strategy. Knowledge acquired through formal education and permanent life-long learning processes are extremely important in properly applying knowledge to use and in the proper use of authority. An organization must know what new things to embrace, and when to embrace them, what old things to discard and when to discard them. To do so, it must strive to become a LO. Only in this way can effective and efficient good eGovernance be fully applied to the pursuit of eDemocracy.

Conclusions

The case study, research, and the “Action Plan” of this research point to the need for an organizational and individual change in attitudes and behavior to properly apply ICTs to the goal of good governance through good eGovernance. Although cultural change can take place at the level of the individuals in organizations, it is also important to create and measure cultural change at the organizational level. Are changes in staff attitudes towards knowledge sharing enhanced through in-depth organizational changes?

As suggested in the analysis and the research results, the way organizations reward workers for their behavior is generally a good indication of where organizations stand in terms of promoting this behavior. As is to be expected from the results of the overall achievements of KM practices, the organizational structure of central government bodies seems not to have entirely accompanied or supported cultural changes in within their staff. A strategy of knowledge management is sterile if it does not also provide for a continuous learning process.

The lack of a reward structure for knowledge sharing and the apparent focus of organizations on technology while (sometimes) underestimating the importance of the human factor, as well, relative managerial resistance to the implementation of KM and LO strategies (middle managers have the most to lose from more

horizontal knowledge-sharing) and the absence of new governance mechanisms accompanying the changing responsibilities, are classic limitations on the implementation of good eGovernance policies. These topics, all of which relate to change strategies and the obstacles to change, are suggested for further research.