



Seminar Kebangsaan
Teknologi Maklumat
Di Perpustakaan
3 - 5 Ogos 2010



Dibentangkan Di
Seminar Kebangsaan Teknologi Maklumat Di Perpustakaan
Anjuran Perpustakaan Sultanah Bahiyah, Universiti Utara Malaysia

Sesi 3 : Pengurusan Ilmu
4 Ogos 2010 | 11.00 – 1.30 petang | Bayview Hotel, Pulau Pinang

THE NEW BLUEPRINT: MOVING TOWARDS UNIVERSITY KNOWLEDGE CITY

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(Presented at National Seminar On Information Technology In The Library at Bayview Hotel, Penang, Malaysia : Session 3 – Knowledge Management, 4th August 2010 11.00 – 1.30 p.m. Seminar organized by Sultanah Bahiyah Library, Northern University of Malaysia : <http://www.lib.uum.edu.my>)



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Abstract:

All knowledge is a form of tradition, whether ingrained in its structure, content, or the value that people attribute to it. Civilized societies have great traditions of knowledge, and the post modern era which discovered print and digitalization gives leverage to the value of those traditions not only in transforming them into intellectual assets but also the means by which they can systematically improve the way society live, work and continue to change in creative and dynamic ways. Cities- their infrastructure, economies and culture are all being transformed by knowledge. The university is a micro knowledge city, and it needs to develop a larger blue print to sustain its growth as a knowledge city. The university must be aware of the importance to capture knowledge assets within the micro-culture and practice of its academic, professional, pastoral, social and cultural services; the sharing of those knowledge assets; and the transformation of those knowledge assets to leverage life experiences of citizens in the campus knowledge-city, and beyond.

The value in knowledge

Today, our capacity to transform knowledge into valuable asset defines our present and future. However, the capacity to transform knowledge is a tradition still new to many societies. It is a tradition which demands active mobilization and use of knowledge. Today the competitive edge lies in how well and how quickly we can improve services and create innovations in useful packaged or bundled products.

The mobile phone is one story of knowledge successfully bundled, where the telephone also functions as a camera, an online network service, and a personal mini-movie cinema. In Malaysia, many research are being done such as biodiesel fuel and plant genetics which all have potential to contribute to k-economy, if there is sufficient support structure to push research into market production.

Countries in the world are now being competitively evaluated by their growth in economy and the ratio of intellectual assets they own, and invest in. The World Knowledge Competitiveness Index is one such index used to measure the competitiveness and the sustainability of the development of intellectual assets. The index is an integrated and overall benchmark of the knowledge capacity, capability and sustainability of leading regions across the globe, and the extent to which this knowledge is translated into economic value, and transferred into the wealth of the citizens of these regions.

Knowledge cities

Edvinsson (2002) defines Knowledge City as “a city that purposefully designed to encourage the nurturing of knowledge”. Cities where knowledge creation has amassed into intellectual assets such as patents, copyrights and high-tech services are becoming the benchmark for competitive wealth index. These knowledge-cities are known for communications, creativity and competence. Knowledge cities are known to provide the best and latest of ideas, conditions to perform to the highest standards, and access to resources of firms and organizations around the world. These cities possess an economy driven by high value-added exports created through research, technology, and brainpower. In other words, these are cities in which both the private and the public sectors value knowledge, nurture knowledge, spend money on supporting knowledge dissemination and discovery (ie learning and innovation) and harness knowledge to create products and services that add value and create wealth.



Some characteristics of knowledge cities

1. An appropriate physical knowledge city, with intact physical knowledge infrastructure.

In knowledge cities, physical knowledge infrastructure include data centers, libraries, research centers, and a strong connectivity between academia, R & D, and the market, new knowledge related legislation and law suits; good education centers and service; scholarship incentives; and research awards. Good transportation systems and telecommunications are also vital for research and product marketing. Knowledge cities offer good transport systems to other cities and residential areas to facilitate the mobility of k-workers.

2. Building in what's already there.

Knowledge cities or c-cities are built on the strengths of knowledge that are already embedded in processes and products that have successfully delivered good returns of investment.

3. A diverse industry based including distinctive specialist niches.

Knowledge cities are known for creative products and services in a wide areas including leisure, hospitality, security, commerce, and entertainment. Sometimes these services are creatively joint, such as infor-tainment. The outlets for knowledge service and products in knowledge cities are numerous: theatres, restaurants, shopping, health service, and hospitality, to name a few.

4. High skills organizations.

Knowledge capacity building in knowledge cities require HR who are highly skilled at knowledge creation and knowledge transformation into services and product. Organizations need to have HR who are able to communicate well, and capable of looking for and using the right information to solve problems and to make strategic decisions. They share information and use it appropriately in their work context within the service they offer, and in the products created. They also have good network of partnerships and information sources. In knowledge capacity building, organizations actively make knowledge acquisition and use it. HR training and deployment in all departments reflect the culture and the work context of knowledge societies, rather than the bureaucratic traditions of hierarchical authorities of power. Ever since the early 80's the term "technocracy" has crept into the management dictionary. It calls for a new form of management which sees technology as the tool to empower people with information and knowledge.

5. A vibrant education sector embedded in the community and economy.

Education in a knowledge society is the key to building sustainable knowledge capacity. Universities attract research grants because of their trained professional human resource. Universities also are the archives of knowledge documentation. In service, manufacturing and production industries, R & D is an investment which help organizations to make learning loops.

6. Strong leadership around the vision of a knowledge city, supported by networks and partnerships.

Gatekeepers of the knowledge infrastructure ought to facilitate easy traffic between innovations, market opportunities, and good governance. Leadership in knowledge cities must be able to provide the holistic framework which brings together the returns of investments made in knowledge infrastructure and knowledge creation to the social and economic development of the country.

7. Community investment

In k-cities, people value knowledge and its transformation to improve services and product. They invest time and effort to seek the potentialities of investments of knowledge work in society. They are consumers of knowledge products, they support innovation and invest in it. The multi-faceted linked between the university and the city citizens – children, teachers, business people, artists, industrialists, etc – turn the university from a learning and research center into an innovation engine.



8. Set of high values

Knowledge capacity of k-cities is grounded in a framework of values that emphasizes the upholding of economic vibrancy, creative entrepreneurialism and artistry, research and development, and social responsibility. The old way of managing things used to separate specialization from interests, whereby the former was deemed good for the public interest and the latter to serve as individual or peer-group enthusiasm. But, time has proven the danger of boundaries that causes limitations on perspectives and subsequent lack of foresight in powerful partnerships. In k-cities, coordinating mechanisms between research innovations, market production, academia training, and social development are continuously formed, celebrated, and mutually beneficial.

9. Good knowledge creation practice

In developing knowledge capacity, it is necessary to understand what good knowledge creation practice is all about. The drive towards “what gets documented, gets to be used” has resulted in many documentation and digitalization of just about any form of knowledge. In advanced societies, the planning for the digitalization and the use of knowledge is strategic to obtain value, dollar for dollar, for the intellectual property created. Websites compete for publication copyrights, which require subscription membership to grant access to those articles of knowledge. Digitalized knowledge is only the tip, but its planned accessibility and ‘push’ especially to niches of professional community of practice is the added value that every knowledge owner aspires.

When knowledge is intended for value trade, it sets high expectations on the quality of the knowledge in terms of its content and presentation. The most important criteria is the coherency in which the knowledge contributes to present knowledge in terms of the gaps and issues it succinctly addresses. Therefore, when knowledge is created and contributed, it must be packaged with specific details of the context of creation; possibilities of use, extended use, and re- use; and impact on industry or society.

The university as a micro knowledge city

Universities are seen as vital in a more knowledge intensive economy both as creators and consumers of knowledge. As creators of knowledge, universities make a significant contribution through its teaching and research activities. Universities also are knowledge consumers through demanding highly skilled workers as part of the education sector. Universities also subscribe to large data bases, publications and reference material. Higher education has a role, for example, in the generation of tacit knowledge, skills, cultural and social inclusion, which are also strong components of regional economic strategies. In addition, higher education within regions is a major business, it can market and attract inward investment, it can create spin-offs and entrepreneurial activity and it can advise business.

The growing emphasis on the vital role of universities in helping cities adapt to, and thrive in, the changing economy not only creates new challenges and opportunities for both parties. Greater reliance upon knowledge-based products and services demand new skills and new knowledge, and new forms of business partnerships.

A university that in itself is a k-city ought to have the characteristics of the knowledge city described above. Recently, in 2003, the city of Barcelona, in the Strategic Plan of the Cultural Sector of Barcelona, announced eleven characteristics of its knowledge city. I have used contextualized some of the characteristics in the context of universities. The university knowledge city should have:

- A campus that has instruments and means to make knowledge accessible to citizens.
- A network of libraries within the campus that is compatible with international standards.
- Access to the new communication technologies for all citizens on campus.
- All facilities and services are structured to support a central educational strategy.
- A campus that has a newspaper- and book-reading level that is similar to the average international level.



- A campus that has a network of schools connected with artistic and creative instruction in humanities and sciences.
- A campus that is respectful of the diversity of cultural practices of its citizens.
- A campus that supports, through the provision of spaces and resources, the cultural activity of the community and associations.

But the growing question is: How do universities transform themselves from within into a micro- knowledge city, so that they can work together with the external society to secure economic, social and intellectual benefits? Universities need to provide an opportunity to grow the environment that develop skills and stimulate ideas. To do so, it needs to transform its structural and infrastructural characteristics to adapt more open and malleable systems fitting to the purpose of k-city.

Research has identified three ways that higher education institutions can engage regionally (Work Foundation, 2008):

- Knowledge creation in the region through research and its exploitation via technology transfer including spin out companies, intellectual property rights and consultancy;
- Human capital formation and knowledge transfer including localisation of learning process by work-based learning, graduate employment in the region, continuing education, professional development and lifelong learning activities; and
- Cultural and community development contributing to the milieu, social cohesion and sustainable development that can create the conditions in which innovations thrive.

Transforming The University into Knowledge City: Blueprint for Knowledge Management Development

Why we need a knowledge management system in universities

The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge, to strengthen knowledge internetworking and to quicken knowledge flow. As much as possible these services should be tailored to the interest and needs of each user. Digitizing libraries' resources and moving to toward digital and hybrid libraries, providing remote access to internet-based knowledge resources, and providing 24 hours a day and seven days a week reference services through the web, are potentially important steps toward KM implementation in libraries. In the knowledge economy era, knowledge management in universities will attach importance to vocational training and lifelong education of staffs to raise their scientific knowledge level and ability of acquiring and innovating knowledge. Knowledge innovation will become a priority. Universities must pay attention to diffusion and conversion of knowledge. They act as bridges for turning the results of knowledge innovation into realistic productive forces. In the knowledge economy era, researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era become the base for knowledge innovation.

Knowledge management for a University Knowledge City.

Technologically speaking, knowledge management system is an advanced information management system that incorporates analysis and synthesis functions to the traditional synthesis function of the older generation information management systems. Through flexible query and mining tools in the knowledge management systems, people can now make data 'talk sense and meaning' while other various contextual variables are manipulated in addition to, refined, or changed. Knowledge management systems enable the 'seeing' of abstract projections based on hard data, thereby helping us to focus our sights on relevant indicators. The knowledge management system is to organizational thinking, as the telescope was to astronomy.



As a sociological tool, the knowledge management system is an invisible infrastructure that connects people's minds, experiences, insights and creativity. The knowledge system provides a comprehensive link to information and knowledge from various walks of contributors, practitioners, lobbyists, etc., thus enabling people to use information from a broad range of contributors in creative ways to achieve their specific objectives.

Knowledge management systems constitutes part of the business environment, and works interactively with other functions at all levels of the organization to achieve the targets of the organization. However, knowledge management is distinguished from the rest of the other functions in the organization by virtue of its overall service and purpose to consolidate and improve on organizational intellectual assets and organizational learning, conceptualize corporate returns and investments, and develop business strategies to anticipate and cope with changing trends and competitors intentions.

In the final outcome, organizations that have knowledge management systems have access to information and knowledge, and communication with experts, consumers, and practitioners, and stakeholders. This environment cannot but increase the capacity for learning in organizations, and thus enhancing the motivation and job satisfaction of their employees. Organizations that have knowledge leadership and the advantage of knowledge management system enrich jobs while adding value to work. Capacity to learn and motivation ultimately spell profit and growth for the company.

Knowledge management is a system, but like all other systems, it requires support from its users. There are three fundamental work principles that need to be established in a knowledge-based organization. First, there must be a champion- a leader- to push the idea of knowledge management system as one of the requisite structures in the business organization. The leader needs to ensure that the functions of the knowledge management system are developed strategically to support the information needs of the business. There must be a fair regularity, and reliability of activities mooted by the leadership to encourage cross-fertilization and (re)-use of knowledge. Above all, the leader needs to continually prove the importance of the system in enriching organizational knowledge and decision-making. Secondly, a knowledge sharing culture must be institutionalized. People must feel that their knowledge contributions are important to other practitioners and the well being of the organization. Organizations need to instill the desire to contribute, and the culture of contributing, to the company's knowledge system. Third, a Knowledge Management initiative has to be synchronized within other organizational efforts to achieve improvement and quality. Outcomes from creative and collaborative thinking need to be rapidly assessed and worked into the overall design of organizational growth and development or else, risk gradual fizzling out. Once these work principles are in place, they become the catalyst to change the way people interact and share knowledge to achieve organizational goals.

Definitions of Knowledge management

Knowledge management is a process involving knowledge generation, use and application. Natarajan and Shekar (2000) for example, defines knowledge management as any structured activity that improves an organization's capacity to acquire, share, and utilize knowledge to enhance its survival and success. David Skyrme and Associate (1997) defined knowledge management as the explicit and systematic process of managing vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. Denham Grey (1999) defined knowledge management as a process involving identification of critical information, sharing of information, protecting and enhancing the value of information, and leveraging knowledge utility in major organizational level decisions. Knowledge management involves blending a company's internal and external information and turning it into actionable knowledge via a technology platform (DiMattia, Susan & Norman Oder, 1997). It means fueling the creative fire of self-questioning in organizations.



In all these definitions, knowledge management is described as a system that enables organizations not only to quickly sift through information to find critical information but also enable them to manipulate, use, and re-use that information in creative ways so that new understandings and new knowledge emerge. In this way, knowledge management may be understood as system that facilitates a continuous process of information seeking and knowledge making.

Knowledge management is a practice and a culture (Jamaliah, 2003). As a practice, knowledge management needs to be instituted in the work processes and decision-making at all levels of the organization. The deliverables of a sound knowledge management practice are value-added information that narrows knowledge and skills gaps, and enables the organization to prepare itself for changes in the business environment. As a culture, knowledge management requires people to believe in its value, and internalize it as part of their daily routine in whichever work community they belong to that relates to the mission of the organization.

New Structures to enhance performance of knowledge management

Structure describes roles and relationships, responsibilities, authority and accountability in the organization. Typically when we talk of structure, we refer to:

- (i) the overall macrostructure of the organization,
- (ii) the strategic structure which describes the deployment of people and resources as well as the networking resources in relation to the goals of the organization, and
- (iii) work process structure which refers to the tasks and processes to produce outputs, be they product or service

Changing the Macrostructure

Macrostructure describes the architecture of the organization: that is, the business units, divisions, branches, and governance structure. These units are often organized by place (e.g. country, region, or town), product or service, customer or market function or type of jobs or tasks, and processes. Traditionally, the macrostructure orients knowledge work according to the units. Today, companies strive to achieve a matrix of integrated and inclusive knowledge from all units to produce global product and service while at the same time, activating local knowledge through regional units to enhance customer focus. Universities too need to develop better matrixes of integrated knowledge in order that their research processes and outputs become relevant to the needs of the community in many aspects of life well-being.

In the macrostructure, libraries should take up the function of CKO whose role overlooks all of the functions that have been described in the knowledge city. The university library is a place of high culture and knowledge, and it must become an active agent in providing the space and resources for promoting the experience of culture and knowledge exchange in campus.

Changing the strategic structure

The strategic structure includes three levels: strategic, operational and doing. At the strategic level, knowledge is aggregated, directed and employed in designing organizational goals for the present and future. Here, overall planning to mobilize resources is done. The operational level implements these goals by tactical planning in the distribution of work and deployment of actual resources. The doing level implements the work plan as per schedule. Each of these levels own different kinds of knowledge, and important knowledge was traditionally strictly privy to a few members at the strategic level. This meant that information; power and leadership were also hierarchical. Today, the more information shared, the better integrated the solution becomes.



Tacit knowledge at the doer level has become a very important lifeline for companies. The success of companies today depends on their initiatives to merge thinking and creating knowledge at the 'doing' and operational levels. Knowledge creation and application are two sides of the same coin, no longer divided at the planning and the doing stages. Changing the strategic structure means deploying knowledge to all units within the organization. Similarly, training (a resource) ought to become an organizational quality process, involving all employees at different levels of the organization at specific time-cycles. The more planners and doers share strategic knowledge, the greater the value created within the work processes itself, and in product and services.

People have to be empowered and motivated to participate in the knowledge system; they need to know that their experience and the multiple frameworks they bring to bear on their work are valuable assets to the organization because it helps the organizations translate goals into relevant processes. The strength of organizations is the sum of knowledge and experiences that members of the alliance bring to the entity. People can identify gaps between the flow of logic and process; they have rough ideas of what can work as opposed what ought to work; and they are capable of bringing together pieces of jigsaws to orchestrate customer needs, organizational capacity, and business concerns onto one very large tapestry. Managers must learn to create opportunities and incentives for employees in the organization to contribute their ideas, knowledge, experience and insights at every level of the organization and in its business process.

The faculty, residential college, library and the student services department are commonly associated with the most frequent contact with the main university client- the students. What knowledge is being aggregated, directed and employed in designing university knowledge city goals for the present and future are shared within and amongst these units? The knowledge created would be an asset to the university.

Changing the work process structure

The work process structure describes the different ways work processes are designed, depending on the nature of the product or service. The work of MacIntosh (1999) on knowledge asset probes is useful to throw some light on how constructs for knowledge acquisition and utilization can be systematically developed by managers to help them analyze the critical functions of information input and throughputs in the business process.

MacIntosh breaks up the processes from knowledge acquisition to knowledge utilization in three stages: the strategic, tactical, and operational stages. At each stage, specific questions are asked to focus the manager's attention to what types of knowledge are critically required to enable the accomplishment of the business functions at each unit in the organization, and how the acquired information is shared and transformed. These stages however, need not be linear because as new knowledge is constantly being produced during operational stages, it may circumvent the strategic stage of pre-planning. MacIntosh three-pronged model is described as follows:

- At the strategic level, the whole organization needs to analyze and plan its core business in view of the knowledge that it currently has, and the knowledge it needs for the future. Organizations need to know the forms of knowledge assets they have, where these reside, how accessible they are, and how they are and will be used to improve business strategies. In this way, the whole organization is encouraged to utilize knowledge in their planning and decision-making. In effect, the questions that need to be asked are:

What forms are the knowledge assets?

Where do they reside?

How are knowledge assets used to plan for the future of the organization?



- At the tactical level, the organization needs to identify and formalize existing knowledge, acquire new knowledge, archive organizational memories, and create systems that allow for the sharing and application of knowledge within the organization. The organization actively scans for opportunities for using the knowledge asset, assesses the effect of their use, and measures the quality of increased value to the company. Some questions that need to be asked at the tactical stage are:

What are the opportunities for using the knowledge asset?
What would be the effect of their use?
What are the current obstacles to their use?
What are the ways that the effects of knowledge use are shared and re-worked?
What would be the increased value of knowledge to the organization?

- At the operational level, knowledge is to be made accessible for use in everyday practice by communities of professional personnel. Strategies for knowledge transfer and utilization involve making plans for actions to use the knowledge asset, enacting those actions and monitoring them, and reviewing the use of the knowledge to ensure added value. A form of assessment needs to be constructed to evaluate the extent that the use of knowledge assets has produced the desired added value to the organization's processes and products, and if new opportunities has been created in the overall business strategy. Finally, the organization needs to ask whether the knowledge asset can be maintained for these purposes. Some questions that are relevant to be asked at this point are:

How to plan actions to use the knowledge asset?
How to enact and monitor the actions?
How to review the use of the knowledge to ensure added value?
Did the use of knowledge assets produce the desired added value to the organization's processes and products?
How can the knowledge asset be maintained for this use?
Did the use of knowledge assets create new opportunities?

Universities need to question what are the knowledge assets they have that actively facilitate their growth as micro knowledge cities. The challenge is to locate those assets, develop them through sharing so that more creative insights are created and utilized in developing university knowledge city. We need to remind ourselves that knowledge city is not defined only and purely in terms of the research activity it has. More importantly, a knowledge city demonstrates the ability of its citizens to access and to utilize knowledge in all walks of life, and who are able to experience a better quality life, education and culture as a result of successful knowledge transformation into tangible services and products.

To globalize the university knowledge city experience, we can then share our experiences and knowledge through corporate portals and data warehouses. The challenge in making data warehouses global requires creative and innovative ways to make data accessible to every corner of the world. This means that universities need:

- *to offer the service of translating their knowledge assets into the languages of the world.
- *to strategize on how knowledge and information can be utilized in cross-functional teams to support a systemic view of how processes and products can be improved.
- *to create visions of how technology and human intellect can contribute to value added solutions.
- *to resolve matters pertaining intellectual ownership.
- *to have policies in place that prescribes how communications are to be channeled, how often databases need to be filtered and purged, how long data is to be kept current before it is archived and so on.



*To ensure that there is sufficient personnel with the right expertise who is manning the systems to acquire, store and transfer data, and a policy is in place to regulate the cleansing of data and its utilization in work processes.

Conclusion

K-cities prosper when physical knowledge structures exist, when communication and transport infrastructure make access easy, and when there is a dedicated research and academia team to advance R& D. Universities need to focus on the development of a coherent blueprint to re-structure and reform its service to support the development of a university k-city. A continuous and aggressive training of HR at all levels to adopt k-work orientation, and a reformulation of the scope and nature of work of HR at all levels to reflect k-work is vital in order to develop knowledge capacity building to the fullest. In universities, research needs to generate knowledge; cultivate a healthy respect for intellectual discourse, and re-tool research as an economic and social-cultural investment. Academia must align their research to economic policy making and social and cultural development. In university k-cities, re-tooling research may call for better networking between knowledge providers, knowledge innovators, and knowledge converters from circles of academia, students, and other service providers from all units of the university, including the library.

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