Training and Development for Knowledge Workers – Malaysian Scene

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Abstract

As Malaysia aspires to move ahead into the K-based economy which is knowledge and technologically driven, the government have to focus more on the critical development and management of human capital. Despite the importance of traditional factors of production (labour, capital raw materials and entrepreneurship), knowledge is now considered as the most important critical success factor in driving growth, creating new value and providing the basis to remain competitive in a globalize economy. In line with the government aspiration to be a K-based economy, Faculty of Information Management (FIM) in UiTM is playing its role as an institution of higher learning in striving for a K-based economy. There are many measures which have been taken in creating and preparing the knowledge workers. One of it is by establishing the Masters in Knowledge Management (MKM) programme. This paper gives an overview of KM aspect that is currently practiced at the Faculty. Two core processes of KM will be emphasized. Finally, this paper discusses the challenges faced and potential solutions in the implementation of KM at the Faculty.

Keywords: Knowledge Management (KM), Knowledge Worker, Human capital, Training and development, Public University, Master in Knowledge Management.

Introduction

The emergence of the knowledge economy (K-economy) has a big impact on the nature of business. As mentioned by Peter Drucker (2004), "Knowledge is being applied to knowledge itself. It is now fast becoming the one factor of production, sidelining both capital and labour." The noted economist Dr. Lester Thurow concurred when he wrote: "Natural resources have dropped out of the competitive equation. In fact, a lack of natural resources may even be an advantage because the industries we are competing with – the industries of the future – are all based on brain power."

As a result, most countries are embarking on their knowledge-based or K-economy strategies in a rush to transform their economies. Knowledge is recognized as a vital and important source of economic growth and competitiveness, amid the pressures of increasing globalization, liberalization and rapid changes in Information and Communications Technology (ICT).

The strength of the K-economy is a dynamic innovative labour force that focuses on developing brainpower in all sectors, especially in education, science and technology. The success of developed countries like US, Japan, South Korea and Singapore is due largely to their commitment to heavy investment in education and training, as well as research and development (R&D).

The transition to the K-economy is a big challenge to Malaysia. As mentioned by our ex Prime Minister, Tun Dr. Mahathir Mohamad in Eighth Malaysia Plan: "In pursuit of information, knowledge and wisdom, we must be prepared to face reality. We must embrace change, pursue novelty, crave innovation. We must learn. Even harder still, we must unlearn. We must remember to forget old ways. We must force ourselves into new habits. We must build new processes, institutions and organizations that are necessary for the Information Age." In other words, for Malaysians to thrive, they must be prepared to adopt new ways of thinking and applying it to the way they work and do business.

Knowledge Management (KM) is a product of the 1990s and a hot topic in organizations, with many practitioners in different disciplines, including business, engineering, information management, communications, education, and epistemology, among others.

Over the last few years, KM has emerged explosively through an interdisciplinary approach dealing with all aspects of knowledge in organisations, organisational learning, knowledge creation, codification, organisation, sharing and application (Srikantaiah, 2004a). In general, KM deals with capturing the collective expertise of an organisation. Some examples of definitions are as follows:

- KM is a broad process of locating, organising, transferring, and using information and expertise within an organisation (Broadbent, 1998).
- KM is the systematic process of identifying, capturing, and transferring information and knowledge people can use to create, compete and improve (American Productivity and Quality Centre, 2002).
- Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework foe evaluating and incorporating new experiences and information. It originates and is applied in the mind of "knowers". In organisations, it often becomes embedded not only on documents or repositories but also in organisational routines, processes, practices, and norms (Davenport and Prusak, 1998).
- KM is about creating systems that enable organisations to tap into the knowledge, experiences, creativity of their staff to improve their performance (Davidson and Voss, 2003).

Benefits of Km

There are numerous benefits of the KM programme to organisations from various industries. The Australian Standards Authority provides the following list of ways a KM strategy can tailor particular kinds of benefits to the core business of an organisation (Rollo and Clarke, 2001:13):

- Industries based on innovation can use KM to accelerate the process of research and development, and to manage intellectual property.
- Companies offering professional services can use KM to enhance (by broadening or deepening) their expertise.
- Industries founded on creation of intangibles (such as entertainment and publishing) can employ KM to develop creative skills and networks, and to protect intellectual capital.
- Industries relying on relationships (such as retail) can use KM to enhance customer service and offer greater product and service depth and quality.
- Companies dependent on the value of brands (such as fashion) can use KM to improve their market intelligence.
- Companies requiring good coordination of complex activities (such as manufacturing) can use KM to increase control.

Unfortunately, all of the benefits can only be achieved by having all the strategic elements in KM that are human, technology and culture. KM is highly dependent on the quality of human capital or intellectual capital, in terms of creativity, insight, entrepreneurship, and innovation as the most critical source of an organisation's or a country's competitive advantage. Meanwhile, Davidson and Voss (2003) stated that "Computers are fast, accurate but dumb; on the other hand, human are slow and sloppy but smart!" Therefore, it is very crucial to focus on the most critical element that is human which include the education and training for the knowledge worker.

Education and Knowledge Worker: Malaysian Universities and the Knowledge Economy

Evidence of the importance of the knowledge economy in Malaysia comes largely from the relative growth and superior remuneration of highly educated people in the workforce. The New Economy is the dramatic increase of university graduates in the labour force over the last four decades in all fields (Fong, 2001). The 20th century saw a growing demand for intangible capital represented by education and research, compared with the 19th century, which was marked by a strong demand for physical capital in the form of buildings and machines. In the words of Ariff Kasim (2001), two distinguished American economic historians, in the 20th century highlighted that:-
"The bias of technological innovation has been intangible capital-using and, in particular, has increased the relative demand for human capital formed through investments in education."

The knowledge economy generates a strong demand for university graduates because of the very nature of scholarly activity in universities. These institutions are good places because learning takes place in an environment of research and scholarly innovation. By education, researchers and scholars can share their knowledge, experience and can develop skills and competencies in various fields. Various skills are required for occupations in order to thrive and survive the knowledge economy.

The workers can be grouped into four levels of skills which are as follows:

- Professional workers (skill level A): occupations for which a university degree (bachelor's, master's, or postgraduate level) is required
- Specialized technical workers (skill level B): occupations requiring two- three years of post secondary education at a community college or technology institute; two - four years of apprenticeship training; or three to four years of secondary school and more than two years of on-the-job training, specialized training courses, or specific work experience
- Intermediate workers (skill level C): jobs requiring one to four years of secondary school education or up to two years of on-the-job training, specialized training courses, or specific work experience
- Unskilled workers (skill level D): up to two years of secondary

The Ministry of Education expects the entire higher education sector in Malaysia to produce more than 10,000 knowledge workers every year. In the Eighth Malaysian Plan, it is stated that the Malaysian government is spending more than RM 3 billion annually in order to be competitive in the knowledge economy. The cost includes university facility, appropriate course/programme, staff training etc.

Moreover, the Malaysian education system is committed to providing a comprehensive, thorough and high quality level of education. The school attendance in Malaysia is significantly high compared with other countries. This high number of enrolment is also apparent in the higher education institutions, which means Malaysia has a large pool of skilled workforce capable of innovative activities.

Relationship between Knowledge and Skills

Information technologies may be affecting the boundary of knowledge, and might be increasing the importance of acquiring a range of skills or types of knowledge (Nonaka, 1998). In the knowledge economy era, computer literacy and access to information have the tendency to become more important than literacy. The knowledge-based economy is characterized by the need for continuous learning of both codified information and the competencies to use this information (OECD, 1996). When we have skills and competencies to get the information, the process to get it becomes easier and less expensive. Tacit knowledge in the form of skills needed to handle codified knowledge is more important than ever in labour markets (Bayliss, 1999).

Codified knowledge might be considered as the material to be transformed, and tacit knowledge, particularly know-how, as the tool for handling this material. Capabilities for selecting relevant and disregarding irrelevant information, recognizing patterns in information, interpreting and decoding information as well as learning new and forgetting old skills are in increasing demand. The gathering of tacit knowledge needed to develop maximum benefit from knowledge codified through information technologies and smart information management can only be done through learning. This is the proof how skills might be of effect to the knowledge searching and learning of knowledge.

The Role of Education and Training for K-Worker

Education and training is a medium production in the knowledge economy, as a creator, customer and export earner (David, 2000). The education and training industry produces skilled people, create knowledge, provide access for the community to the lifelong benefits of online learning and is an enabling force for other industries. Tertiary education provides the foundation knowledge, skills, attitudes and values. Education and training equip Malaysians for work and enhance workers with knowledge and skills. Education and training encourages workers and enterprises to increase their investment in training.

The role of knowledge and training within the economy is leading to a whole range of new industries and new developments in biotechnology, new materials science, informatics, computer science, etc. Derrick (2000) mentioned that, "at least ten components that should be included and or enhanced in knowledge, education and learning". Each of these components is briefly described below:-

- A focus on abstract concepts
- Uses a holistic, as opposed to discrete, approach
- Enhances the student's ability to manipulate symbols
- Enhances the student's ability to acquire and utilise knowledge
- Produces an increased quantity of scientifically and technically trained persons

- Blurs the distinction between mental and physical labour
- Encourages students to work in teams
- Uses virtual teams around the world
- Is an agile and flexible system
- Break the boundaries of space and time

Universities also motivated in an internationally competitive environment. They supply the professionals and experts required for many highly skilled occupations, leadership and management. Meanwhile David Kemp (2000) added "universities make a major contribution to all countries' research and development effort. Higher education is the second largest research and development performer after the business sector. Many of the innovations that were created through the Research and Development department of the information economy have originated in higher education institutions".

Pedro and Manuel (1999) classified the roles of the university in the knowledge management and economy edge generally as:-

- R & D (Research and Development) Centre – which aims at the accumulation of ideas through convergent learning process.
- R & T (Research and Teaching) – in which research functions as a way of developing teaching materials, as well as of improving the teaching skills of the teaching staff.
- R & L (Research and Learning) – in which the value of the research is not necessary in the creation of ideas but the development of skills that enhance opportunities for learning.

Knowledge Management: Education and Training

Knowledge management (KM) training is offered worldwide by a wide variety of organizations. They include academic institutions, software vendors, consulting firms, and professional organizations. Training for KM also exists at both individual and organization levels, geared for both experienced KM practitioners and novices who wish to gain a better understanding of the field. In academic institutions, training in KM was developed at various levels: academic degree programmes, concentration in KM in degree programmes, certificate programmes, continuing education programmes, workshops, and seminars. Universities from all over the world are offering KM programmes at various levels. United States of America, Canada, United Kingdom, New Zealand, Australia, and Malaysia are among the countries that offer KM programmes at their universities. In Malaysian universities the MSc. in KM programmes are available in Multimedia University (MMU) and Universiti Teknologi MARA (UiTM).

There are several differences which exist between KM Graduate Degree Programmes offered in Library and Information science schools, Engineering and Computer science schools and Business schools. Curricula in KM for graduate programmes can vary widely depending on the focus of the training and school that administers it. A review of the graduate degree that offers a more rigorous and longer term commitment indicates that three schools dominate in KM training: library and information science schools, engineering and computer science schools and business schools (Srikantaiah, 2004b).

Library and information science schools regard KM as an extension of information management where the basic premises revolve around identifying information needs, locating information sources, selecting information sources, organizing information, developing taxonomies and classification schemes, and disseminating information. They are primarily concerned with textual (semi structured) data and information; secondly with structured information; and only marginally with tacit information.

However, engineering and computer science schools train KM specialists with an emphasis on technology (especially software). Engineering schools view KM through IT and computer science. They train individuals in coding techniques, networks, and technology application packages, and cover knowledge production, acquisition, storage and dissemination.

On the other hand, business schools emphasize organizational analysis and design, and organization learning aspects, in their KM training. In some cases, there is a management information system (MIS) emphasis. Some business schools also offer executive management training in KM.

Knowledge Management (Km) Initiatives at the Faculty

We at the Faculty of Information Management (FIM) have long been aware of the importance of knowledge. Hence this is one of the reasons for looking at the possibility of setting up KM initiatives at the Faculty and the setting up of the Master of Knowledge Management (MKM) programme. In today's information economy, knowledge is a valuable organizational asset. It may even decide the survival of an organization. Knowledge does not just come from what we learn from books, television, school and college but it gained and refined through all our activities, relationships, experiences and observations. Knowledge is more than data or information. It involves:

- Beliefs and values
- Creativity
- Judgments
- Skills and expertise
- Theories
- Rules
- Relationships
- Opinions
- Concepts
- Previous experiences

Though we at the FIM are aware of the importance of Knowledge, the practice of a proper KM is yet to be seen. KM as perceived by most of us is the process by which we consciously seek to build, shape and exploit the body of knowledge within our organization. It will involve inquiring the following questions:

- Who has it?
- Where do they keep it?
- How do we encourage them to share it?
- How is it created?
- Who else needs it?
- How is it communicated?
- How is it kept up to date?
- How and where is it stored?
- How is stored knowledge accessed?
- Which knowledge is relevant, now and in the future?
- How much is it collectively worth?
- Which is most valuable?
- Is it used in the appropriate areas/situations?

Overview of the Km Practice

As mentioned earlier, the proper practice of KM at the FIM is yet to be seen but the FIM do get involved with one of the 6 core processes that is K-creation activities. This is expected as it is in the conducive environment due to the fact that its core business in academic learning, teaching, knowledge enhancement and educational development. Though K-Creation activities are there, it is not done in a systematic and proper manner.

Realizing this, the FIM has set up a Special Interest Group (SIG). Faculty members were sent to attend courses related to KM. The FIM too has a research unit, which will be an avenue for Research and Development activities. It is hoped with all this development, it will make possible for the conversion of intellectual assets of faculty members into more productive assets that can form into forces for competition, power and added value.

Core Processes in Km

In order to develop a complete and comprehensive KM practices in the FIM, all the 6 core processes should be taken into consideration. The 6 core processes are:

1. Knowledge Identification
2. Knowledge Acquisition
3. Knowledge Application/Utilization

4. Knowledge Sharing
5. Knowledge Creation/Development
6. Knowledge Retention

It will assist towards the successfulness of KM practices in the organization. However it is impossible to run all the 6 core processes at one time. Hence only 2 core processes will be discussed as a starting point to implement a proper and systematic KM practice. The two are K-Sharing and K-Creation. K-Sharing The practice of KM advocates knowledge sharing. Sharing of best practices will encourage constant innovation and this will benefit the FIM. It will not be an easy task in promoting K-Sharing at the FIM because people will try to keep some of what they know to themselves. They do not want others to be more knowledgeable. This is in view of competing for promotion later on. It is not easy to cultivate this knowledge culture, but by sharing and using knowledge that we have around us will make us understand the most valued resources.

In an article by Patricia Hunt Dirlam: "Knowledge sharing bridges the gap between ideas and results and turns strangers into colleagues and customers into partners." Robert Stuert added: "Sharing of knowledge allows both parties not only to retain the resources but also to expand it through the exchange process itself. It changes the circle from a source of information and turns it into a web of ideas, inspiration and influence. Knowledge does not behave like natural resources as it can replicate and multiply. Natural resources deplete with use but knowledge expands with use".

In promoting K-Sharing the most important thing is to have an environment of trust, mutual respect, self-accountability where recognition shall be given to the creation and innovation of knowledge. A series of colloquium or intellectual discourse among the faculty members is one way towards promoting K-Sharing. The ability to share and reuse knowledge will not only enhance the day-to-day operation but it will also add values to the FIM's profile and future growth.

K-Creation

The aim of this activity is to identify the type of information flow that exists in the FIM. Aside the traditional flow which is through the dissemination of hardcopy notices and bulletin board, attention should also be given on various types of information flow at the FIM. The first is from tacit to explicit. Here a lecturer who has gone for training and courses will be required to transfer the knowledge and skills to the other lecturers when he/she comes back. The transfer of knowledge can be done through colloquium. Lecturers too are encouraged to attend conferences and workshops both at the national and international level. Besides this the teaching faculty are also allowed to go on industrial attachment with industries pertaining to their area of expertise. The idea is to form an industrial linkage which will result in partnership and joint research. All these will lead to innovation and creation of new knowledge.

Next is from explicit to tacit. It involves the transferring of documented knowledge to the individual head. This is done through reading and digesting the information before churning into knowledge. The most common and simplest way of transferring knowledge is from tacit to tacit. Informal discussions during lunch time or between tea-breaks are amongst the medium of transferring knowledge among faculty members.

Master in Knowledge Management (Mkm) At the Faculty of Information Management (Fim), Uitm.

KM caters to the critical issues of organizational adoption, survival and competence in the face of increasing discontinuous environmental change; essentially it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings (Malhotra, 1997).

From Malhotra's definition of KM we can see that the human element or aspect is of equal importance as information and data bases organization. So at the FIM, we hope to be able to train students to become familiar with the current theories, practices, tools and techniques in KM, and later combine the acquired skills in Information Management (IM) related subjects in order to assist students in pursuing a career in the information sector for public and private sectors. In most organizations, the tacit knowledge of their top management staff is of vital importance. However they are facing the problems of their senior staff retiring and the knowledge of their jobs is not being recorded in a systematic and comprehensive manner. As Michael Porter mentioned "People are your firm's repository of knowledge, skill and experience base that makes your firm competitive." The students of the MKM Programme will be taught on the basic theories and concepts on KM and IM.

However more emphasis will be given on KM subjects. The FIM realised the importance of having the MKM Programme after conducting a research study on 50 MSC status companies on their needs for knowledge workers. From the data collected it showed that 19 of the respondents or 34% held positions as knowledge managers. 32 of the respondents or 64 % mentioned that it was difficult to employ k-workers as there is an inadequate supply of employees who have a background on the studies of KM. The respondents also indicated that institutions of higher learning should offer courses in KM at Masters or Doctoral level so that more professionals with KM background can fill up the vacant posts available in both public and private sectors.

In addition, based on a recent finding by the MDC from the 2004 Impact Survey (Figure 1) indicated that 620 companies reported that they employed 19,061 employees in 2003 which translates into an average of 30.7 employees per company. This ratio per company was higher that the ratio recorded in 2002 which was 26.7 employees per company; an increase of 15%. The total employment figure is expected to increase by approximately 17% next year to 22,293. It is also anticipated that the trend will continue to be positive in the near future with more than 85% of the staff employed categorized as knowledge workers holding high value jobs. Of the 19,061 people employed more than 16,000 of them are classified as k-workers. 82% of these k-workers are Malaysians.

Figure 1: MSC Total Employment

Moreover, the 2004 Impact Survey (Figure 2) also found that more than 54% of staff employed by MSC status companies has at least a first degree whilst the remaining 19% have at least a Diploma, 8% with Masters and 1% with PhD. The survey findings indicated increments in all categories of qualifications except, for professional certificate, with the number of PhD holders increased by 26%, 24% for Masters, 6% for Degree, 10% for Diploma and 49% for Non-Degree. The FIM strongly believe that the M KM programme will be able to supply more k-workers especially at the post graduate level which will be highly demanded by the MSC status companies as they are focusing more on the research and development activities.

Figure 2: Employees Qualification

The demand for professions which require KM background from KM is indeed most encouraging and promising. Looking at the present situation the demand for positions such as Chief Information Officer (CIO), Chief Knowledge Officer (CKO), Knowledge Management Executive, Knowledge Manager, Directors and Executives who are truly qualified to handle information sources and knowledge are still very much lacking.

The situation can be further heightened with the establishment of the MSC which was created from the aspirations of Tun Dr Mahathir bin Mohamed, the Ex Prime Minister of Malaysia. Tun Dr. Mahathir mentioned that the purpose of MSC is to enable Malaysia to leapfrog into the information age and to create an ideal environment that will attract world class companies to use as a regional multicultural information age hub. The 7 flagship applications developed in MSC are electronic government, multipurpose card, smart school, tele-health, R & D clusters, e-business, technopreneur development. In order to see through all these projects the demand for knowledge workers will be critical at the developmental stage that is in the year 2005, 2010, 2015 and so forth. MSC will expand its applications to the whole nation in the year 2020 and there is no doubt that knowledge experts will be required to assist in the various projects. Hopefully Malaysia can reach the same level as the other developed countries. In future we hope not to rely strongly on expertise from overseas as in the long run it will be unprofitable. If the country depends greatly on overseas experts, in due course the economy might face a gradual decline. Eventually the resources of the country which is being exploited continuously will be transferred overseas. Due to this factor the Malaysian government has planned a strategy via E-economy in order to ensure and manipulate the knowledge assets from various sources and to channel production activities for certain products or services.

Government departments such as INTAN, corporate companies such as Maxis and statutory bodies for example Bank Negara, Malaysian Palm Oil Board (MPOB) SIRIM, MDC, Klang Port Management and others have established special units in their organizations to manage knowledge resources. KM in fact has existed for some time in prominent companies operating in this country such as Microsoft Corp., Intel, Ernst & Young, Price Waterhouse Coopers, Arthur Andersen, Buckman Laboratory, Hewlett Packard, Texas Instrument, Fuji Xerox Corporation, Texas Instruments, Toyota, Honda, Royal Shell, BP Amoco, Federal Express, Johnson & Johnson, Levi Strauss and others.

Furthermore, Badruddin (2004) based on his research finding on KM Initiatives in Malaysian organizations stated that 46% of the respondents were reporting that they have established formal KM initiatives in their respective organisations. The respondents are including the companies listed in the Kuala Lumpur Stock Exchange (KLSE), government Ministries and Departments, educational institutions, the electronic industries, and government-owned agencies.

Economist experts are of the opinion that Information and knowledge are the main instruments to be used in order to remain competitive from the economic point of view. Information and knowledge are regarded as highly valuable and priceless which is comparable to raw materials, big factories and physical resources. In order to stay competitive only giant companies which can handle information and knowledge efficiently and effectively will be able to succeed. This is in tandem with the statement made by Peter Drucker, "The most valuable assets of the twenty-first century company are its knowledge and k-workers". Hence based on this reason, it is most appropriate and timely that the MKM has been introduced at the FIM, UiTM. The main objective of starting this course is to assist the public and private sectors to work closely in building a strong economy through knowledge management. Through KM corporate bodies/companies can remain viable, be better organized and in return are able to provide services which are more effective and efficient.

The MKM programme at the FIM hopes that by introducing subjects which are related to KM, graduates from this programme who are 'bumiputras' will be able to fill up the vacancies for the positions of k-workers (at managerial level) in this country.

The job opportunities in the field of knowledge management are available in the public and private sectors which have carried out knowledge management principles in their organizations. Numerous job opportunities can be occupied by our graduates from the MKM based on the current market scenario. The positions related to KM can be designated as below:

1. Knowledge Manager
2. Chief Knowledge Officer
3. Knowledge System Engineer
4. Knowledge Process Manager
5. Knowledge Transfer Engineer
6. Knowledge Community Leader
7. Intellectual Capital Manager
8. Performance Measurement Engineer
9. Knowledge Assurance Manager
10. Knowledge Research Engineer
11. Knowledge Architect

All these professions require expertise and specialized technical skills in the field of KM compared to Information Management (IM).

Conclusion

The transformation from existing environment into a new one invites challenges. Thus the plan of implementation needs to be systematically managed. The challenges are from human aspect, bureaucracies, infrastructure and a sort of things. Below are the potential challenges of the application of KM in the FIM.

• Staff Awareness

The perception and acceptance of staffs toward KM may vary, because of their academic background, knowledge and the sense of sharing information. There might be some staffs of the FIM who are not exposed to the concept of KM and are not ready for it. Their consciousness toward knowledge acquisition, sharing, development and creation may be at low level. They do not understand the benefits and the imperative of these practices. Some of them prefer not to share their experiences (considered their advantage), because of competition in term of getting treatment from the management.

In order to resolve this problem, a series of seminars, talks and consciousness session need to be held. All the staffs must attend the course and they will be exposed to the real concept of KM and the benefits that can be gained from it.

- **Infrastructures and Facilities**

The existing info structure, infrastructure and facilities are also the challenges of KM implementation. Even though, the basis is there, a lot of improvement and upgrading must be done. The physical infrastructure and facilities that are available currently be increased to meet the needs of KM practices. It must be designed according to suitability of KM application.

- **Inadequate Model**

The support is much related to the history of victory of this practice implemented by other similar type of organizations. To the date, there is no university in Malaysia who has fully implemented this KM in it. That is, there is no model to be followed. Thus, as a pioneer in the KM initiative, there will be a lot of problems to be considered.

However, it is hoped that the implementation of KM could benefit the FIM in every area. The full commitment from various levels of staffs in the FIM will make the implementation of knowledge management become worthwhile. To quote what has been said by the CEO of Hewlett Packard, "Successful companies in the 21st century will be those who do the best job of capturing, storing and leveraging what their employees know".

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