Factors Affecting Learning Organization and Innovative Organization

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Abstract

This paper is aimed firstly to explore factors which affect organizations to become learning organization and innovative organization; secondly, to study the correlation among those affecting factors. This paper has gathered concepts about affecting factors and reviewed of previous studies. The findings of this study indicate affecting factors including leadership, organizational culture, technology utilization, knowledge management, and those factors affect each other. Organizations can apply the findings into their planning and managing of policy and strategies for becoming learning organization and innovative organization and for sustainable development.

Keywords: Learning Organization; Innovative Organization; Leadership;
Organizational Culture; Technology Utilization; Knowledge Management

Introduction

Organizations no matter what types and sizes they are, nowadays, are encountering problems and competitions due to rapid and severe changing circumstances of today's world. They need to adjust themselves and find the most appropriate development methods for surviving in this fast changing social context. Hence, innovation plays an important role in running business and competition, and it helps, in some ways, organizations become successful. Innovation can be developed for any business sectors such as products, performance, service, management, and marketing. If an organization cannot develop and transform itself through innovation, in a long run, it is impossible for the particular organization to be successful. (Yosyingyong, 2009; Decharin, 2004) The significance of innovation in doing business can be explained in a variety of aspects. Firstly, it enhances competitiveness of the organization because innovation does not only make

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products or service of a company different from the others' but it also provides a firm place in the market for the company. In addition, by adding value to the products, it modernizes business operation and replaces traditional style of business operation which emphasizes on price monopolizing policy. Secondly, innovation increases company effectiveness. By being leading and initiating company offering new business option and products to the market, the products can catch customers' attention more easily and rapidly which reduces cost for establishing customer's recognition. At the same time, the products price can also be set in the high level. Thirdly, innovation can reinforce overall economic growth. Becoming innovative organization can elevate national economy in a sustainable way. This is because the rate of increasing value into business operation and products has become an indicator of competitiveness in organizational level and international level. (Chaiprasit, 2010)

Innovative organization is the organization that reforms its characteristics and behavior. For so doing, the organization promotes intellectual stimulation for developing and increasing effectiveness of its apparatus, system, process, policy, and service for the progress of the organization, for economic benefit of the society, for globalization context, for customer's needs and satisfaction, for survival and competitiveness of the organization in the world market. (Yosyingyong, 2009; National Innovation Agency, 2010; Wittayapanyanon, 2005; Wutthirong, 2010; Trakulhoon, 2007; Thongpan, 2008; Sherwood, 2002)

To be innovative organization, it starts from being a learning organization. Learning organization is a new type of organization which depends on holistic view. This means simultaneous visionary transformation in all levels of human resources (individual, team, and organization) development. It is important to emphasize on individual's working life-long learning and exploiting working experience as an essential knowledge base. (Na-Takuatoong, 2001; Senge, 1990)

The concept of learning organization is important for both organizational development and human resources development. It is initiated for effectively dealing with the challenge of changing world and for consistently enabling organization to respond customer's needs. The knowledge of modern technology, environment, and complexity of competition in both domestic level and international level enables organization to reform its operation and to increase its competitiveness in a sustainable way which, eventually, modernizes the organization to cope with changing environment. (Sinsoongsud, 2006; Thianthai, 2007; Sungkhawan, 2008)

To become a learning organization and innovative organization is not an easy task. It involves a number of facilitating factors and correlation among those factors, and these are the purposes of this paper.

Factors affecting Learning Organization

<u>Leadership</u>

Sanguanprasit (2000) stated that leadership was a factor promoting successful learning organization. Leaders have to continuously promote learning environment. Empowerment is essential. The leaders need to decentralize their directional authority to the supervised, and sensitivity to the changing environment needs to be initiated. (Thianthai, 2007; Hemtasilpa, 2000)

Gilley & Maycunich (2000) stated that leadership found in learning organization was dissimilar to those found in traditional organization. Leaderships found in learning organization are likely to be transactional leadership and transformational leadership. Marquardt (1996) proposed that leaders in learning organization must be those individuals who can conceptualize and ease complicated matter and process, and can create motivation. These are important attributes of transformational leader. Kecharananta (2008) mentioned administrator's roles in building learning organization that the leaders had to be transformational leader and created organizational innovation. Srimuang (2005) stated that in order to built the learning organization must had the ability to became a leader of change. Bass (2000) proposed that transactional and transformational leaderships were essential for building and maintaining learning organization.

In addition, Reece (2004) conducted a qualitative research using 32 university staffs in universities in southern Australia to study the method to become learning organization of universities in Australia and found that leadership was an essential factor bringing universities in Australia to become learning organization. Singteantrakul (2008) had explored factors facilitating learning organization of public health center at 235 centers and using Stepwise Multiple Regression to analyze the data, the result also confirmed the significance of leadership.

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Organizational Culture

Tawuttanakul & Sribannasarn (2006) stated that organizational culture could create a learning organization to be successful. Thongpan (2008) proposed that learning culture affected learning organization.

To be a successful learning organization, it is necessary to transform the organizational culture which facilitates information share among personnel. Shared benefit gained from harmonious cooperation and development, and mutual understanding among all staffs and all departments needs to be emphasized since they are all jumping into the same boat. All parts will gain benefit if the organization is well-organized and successful. Learning environment cannot happen in the organization that trustworthiness among staffs and colleague is less or none. What individuals have learned will not be shared, transferred, or acknowledged. (Thianthai, 2007; Saritwanich, 2006)

In addition, Chao Chang & Shing Lee (2007) conducted research using 134 staffs in industrial sector to study about leadership, organizational culture, learning organization and job satisfaction and found that organizational culture had a positive influence on learning organizations. Chamnannarongsak (2004) conducted research on leader behavior and organizational culture on learning organization development. The study sample consisted of 550 managers and employees in public and private hospitals. Data were analyzed with LISREL. The result showed that organizational culture had directly influenced on the learning organization.

Technology Utilization

Information technology (IT) is an important tool for learning organization; in other words, the organization relies a lot on modern technology which is accurate, easily accessible, convenient for sharing, and instant. This kind of technology helps respond to change and increases working effectiveness which eventually leads to well respond to customer's and staff's needs. (Thianthai, 2007) Implementation of information technology; for example, making a web board for staffs to share their working knowledge and to post new useful articles which improve their work, promotes learning organization and in a certain organization where technology is employed for improving their work, new knowledge is constantly developed and self-learning and self-improvement of personnel are also sustainably enhanced. (Koonsri, 2005)

In addition, Phinaisup & Kampan (2007) conducted research on organization and

management. The study sample consisted of 70 business organizations. The result showed that knowledge management technology and team management technology could predict becoming the learning organization. Chandavimol (2001) conducted research on selected variables that affect the learning organization. The study sample consisted of training staffs of the private sector. Data were analyzed by analysis of multiple regression. The result showed that the internet could explain the variation in the learning organization.

Knowledge Management

A number of scholars have mentioned the objectives of knowledge management in the same direction that it is a form of management process or tool for leading organization to become learning organization. (Kecharananta, 2008; Kultanan, 2005; Panich, 2005; Sangraksa, 2007; Lorsuwannarat, 2006; Mudpongtua, 2006) Knowledge management is to reshape the working concept to be active-working oriented which is useful for reinforcing competitiveness of the organization. The organization with high ability to enlarge and to develop knowledge based on its collected knowledge and experience can maximize its competitiveness, and this kind of organization, finally, can become learning organization. (Office of the Public Sector Development Commission, 2006; Pitsuwan, 2005)

Yosyingyong (2009) proposed that working performance of personnel in an organization could be improved if serious and constant knowledge management was promoted and this led to becoming learning organization. (Punthai, 2007) For so doing, internal knowledge management had to be well-organized for actual and continuous learning. Knowledge management is a crucial tool activating organization to achieve its 3 goals: working goal, human resources development goal, and goal for becoming a learning organization. (Tassanapoonchai, 2007; Tawuttanakul, 2005; Klankaew, 2008)

In addition, Akkadechanan et al. (2010) conducted research on potential to develop into learning organizations. The study group consisted of 478 staffs in 17 hospitals participating in a knowledge management project. The result showed that knowledge management can predict the learning organization. Phinaisup & Kampan (2007) conducted research on organization and management. The study sample consisted of 70 business organizations. The result showed that knowledge management is forecast to become a learning organization.

Factors affecting Innovative Organization

<u>Leadership</u>

Successful innovation depends on leadership: being leader in thinking out of the box, being leader in experimenting, and being leader in transforming to the better. Leadership with the support of good management can redirect organization into what we have expected. It can also empower people in the organization and reinforce cooperation in the organization to steadily and rapidly make the vision come true. (Uthairat, 2003) Innovative organization does not occur by chance but by appropriate leadership and management. (Adair, 2009)
Clegg et al. (2005) stated that transformational leaders stimulated people to be creative and innovation. Using their skills, they systemized and created innovation to empower their people for them to participate in organizational transforming process. (Shukla, 1997)

In addition, Piriew (2007) conducted research on the role of human resource development with changing to innovative organization. The study sample consisted of 7 administrators, working groups and experts in True Corporation's innovative project. Data were analyzed by qualitative method. The result showed that the factors contributing to innovation within the firm including the executive make supporting innovative policy in the enterprise.

<u>Organizational Culture</u>

A number of organizational culture objectives emphasis on innovation and risk taking; however, because of fast changing environment nowadays, organizations have to create innovation and take risk at an acceptable level. To gain personnel's cooperation in terms of creating and implementing innovation, organizations have to build organizational culture which emphasizes the importance of innovation elevating organization value. (Want, 2007; Kananurak, 2008)

Von Stamm (2003) stated that building appropriate organizational culture is a key gear stimulating innovation. To build sustainable innovative organization, it depends very much on innovative culture which is the organizational culture that promotes and values innovation. (Chantaraprapalert, 2008)

In addition, Thongwan (2010) conducted a research examining the correlation of factors facilitating innovative organization in 3 working groups (managerial group, academic and

research group, and practical group) at National Science and Technology Development Agency. It was found that organizational culture has a great impact on becoming innovative organization. This is confirmed by the result of Bates & Khasawneh's research (2005) conducted in 28 organizations in Jordan that organization's learning culture had an influenced on innovation in organization.

Technology Utilization

According to Sakonnakhon Rajabhat University, Faculty of Science and Technology (2009), innovation is the term often attached to the term technology due to their tight interwoven relation. Innovation involves invention or creating new things for make change in the better way which is probably in the process of proposing idea or experimenting and is not generally familiar. Meanwhile, technology emphasizes on implementation for maximizing working performance or for solving problems. When an innovation is applicable, that innovation can be considered technology. Contradictory, if the implementation of technology creates new method or new thing, this can be considered innovation. Therefore, these two terms (innovation, technology) are concurrent. An important factor enhancing innovation in organization is implementation of technology in working. In an organization, when innovation increasingly and constantly occurs, that organization becomes innovative. (Vicharn, 2007; Wutthirong, 2010)

In addition, Thongwan (2010) conducted a research examining the correlation of factors facilitating innovative organization in 3 working groups (managerial group, academic and research group, and practical group) at National Science and Technology Development Agency. Data were analyzed by structural equation modeling (SEM). The result showed that learning technology had an influenced on becoming innovative organization. Nutasarin (2007) conducted a qualitative research about the factors facilitated to innovation. The data collected from secondary sources by reviewed of theory, research and the case study of organizations, and primary sources by interviewed of administrators and employees of Thaiyamaha Motor Company Limited. The result showed that tools (time, opportunities, e-learning, internet) promoted the innovation. Wutthirong (2010) studied about external environment factors for create innovation. Data were collected by depth interviewing with experts in government and academy. The result showed that technology had an influenced on creating innovation.

Knowledge Management

Innovation is the outcome of knowledge management by developing new knowledge or extending gained knowledge and implementing it. (Suanpleng, 2009) Knowledge management is the tool to enhance learning in organization and creates innovation to drive the organization to cope with the changing situation of business world. (Waiwanichakij, 2010) Organization needs to develop knowledge management process for all personnel to be able to apply knowledge into their work and to create innovation which lead to increasing production and service effectiveness. (Wipawin, 2003)

Knowledge management can be mentioned in terms of arranging searching system, storing knowledge, providing accessible and instant knowledge, systematically retrieving expertise and knowledge from human resource, and sharing knowledge and experience in the organization. The main purpose of knowledge management is to extend knowledge base for organization's intellectual improvement. This improvement brings about potential for organization to overcome obstacles, to deal with instable situations, and to reinforce competitiveness and products success. (Limpattanasamran, 2005; Banyati, 2007; Sangraksa , 2007; Saritwanich, 2006; Gibson et al., 2006; Ribiere, 2008; Stankosky, 2005) Managing collected knowledge not only maintains organization operation but it also develops innovation; therefore, effective knowledge management will lead the organization to become innovation organization. (Malee, 2008)

In addition, Wen Huang & Hui Li (2009) conducted research on the mediating of knowledge management on social interaction and innovation performance. The study sample consisted of 176 firms in Taiwan, listed in the yearbook published by the China Credit Information Service Incorporation. The result showed that knowledge management had a positive effect on technical innovation performance. Ju et al. (2006) conducted research on a contingency model for knowledge management capability and innovation. The study sample consisted of knowledge management manager in semiconductor, LED, precision machinery, communication and biotech industry. The result showed that knowledge management capability had a direct effect on organizational innovation. Wichittayarn (2009) conducted research on the innovation process and the factors that affect success of The Siam Cement Group (SCG). The study sample consisted of The Siam Ceramic Group Industries Company Limited (SGI), a subsidiary of The Siam Cement Group (SCG). Data were collected by interviewing of 2 administrators, 4

engineers, 3 marketers and 3 customers. It was found that knowledge management affecting the innovative success of the company.

Correlation of Factors

Leadership and Organizational Culture

Organizational culture transformation takes time and needs cooperation among all staffs; also, leadership is significant. (Maharatsakul, 2004) Leaders need to be able to promote transformation in the organization by making staff to understand, to admire, and to follow the organizational culture. (Yavirach, 2007)

According to Kaplan (2001), leaders are in charge of indicating strategic direction and supervising staff's performance. They have also a great impact on organizational culture. They standardize organizational behavior and empower staff to follow the behavior. (Alvesson, 2002; Bass & Riggio, 2006; Yenyuak, 2007) In other words, leadership indicates organizational culture: leadership of an individual leader affects others to follow what the leader has assigned. Leaders need to employ a variety of methods for inducing staff, and leadership can affect organizational culture in those different ways. (Mondy et al., 1993)

In addition, Zhu & Sun (2010) conducted research on dynamic relationship and impact mechanism between corporate culture, leadership styles and knowledge management in organizations based on literature review. The result showed that leadership style had a direct impact on the formation and components of corporate culture.

Leadership and Technology Utilization

In knowledge management, leaders need to develop knowledge management supporting system and promote implementation of information technology. Many large organizations assign people in charge of information system called chief information officer. They are a group of people who have clear understanding in business or mission of organization and technology. They must be able to feature organization's vision about information technology of the organization, and must be able to develop and to maintain basic structure of information technology and data base. (Wutthirong, 2007) One of essential factors for the success of information technology is

senior executives who have to pay serious attention and provide suitable support. This support must be in Top-down pattern, the support is given to lower practitioners by senior executives, because this matter is confidential and involves massive people. If the policy is launched and support is firmly provided by senior executives and descended to knowledgeable staff, after these staff recognize the benefit of the project supported by the senior executives, they will be willing to cooperate which finally produces unidirectional performance. (Liewpanich, 2009)

In addition, Hughes & Zachariah (2001) conducted research on an investigation into the relationship between effective administrative leadership styles and the use of technology. The study sample consisted of 40 teachers in public schools in Ohio. The result showed that leadership styles had an impact the implementation and use of technology as an instructional tool in the classroom. Wingworn & Piriyakul (2010) conducted research on PLS path model for effects of entrepreneurship, leadership, information technology and guanxi on SMEs performance. The study sample consisted of 450 customers using the SMEs service. Data were analyzed with structural equation modeling (SEM). The result showed that leadership had a direct effect on organization's information technology utilization.

Leadership and Knowledge Management

Leadership is a strong guarantee of the success of knowledge management. (Pethsong, 2005; Wongprasert, 2005; Stankosky, 2005) Knowledge management cannot be successful without the support from the managerial administrators of the organization. Building leadership in the administrators of organization is necessary. The administrators need to have a clear understanding about concepts and need to recognize benefit the organization gained from knowledge management for them to be able to communicate and promote knowledge management. The administrators with appropriate leadership are those who specify the direction, connection, and shared value to establish organization ambition and to assess the expected outcome. Most importantly, those administrators must be transformational leaders and be role model for the followers. (Boonyakit et al., 2005; Suanpleng, 2009; Mudpongtua, 2006)

Kowledge management also depends on strategic leadership with strong vision, and exchanging and synthesizing of knowledge are at the core of increasing the value of organization which stimulates cooperation and readiness for transmitting knowledge to others. (Debowski, 2006; Frappaolo, 2002)

In addition, Plooksang (2007) conducted research on factors influencing towards the success of knowledge management. The study sample consisted 279 Meteorological Officers. Statistical tools employed for data analysis were One-way ANOVA and multiple regression. The research result revealed that leadership had positively influenced the achievement of implementing knowledge management. Suktanarug (2007) conducted research on factors affecting knowledge management. The study sample consisted of 120 head nurses in Chon Buri hospitals. Data were analyzed by Pearson product moment correlation coefficient and stepwise multiple regression analysis. The result showed that an predictor of knowledge management was transformational leadership. Wisuppakarn (2009) conducted research on the factors that influence knowledge management. The study sample consisted of operation and network employees of Government Savings Bank. The result showed that leadership contributing to the knowledge management. Thunyasoontornkul (2011) conducted research on the role of knowledge management and organizational learning in the transmission of influences between transformational leadership and innovation achievement. The study sample consisted of 400 large and medium manufacturing firms in Thailand. The result revealed that transformational leadership had a positive influence on knowledge management capability.

Organizational Culture and Leadership

Culture manipulates leadership in organization. Cultural value and norm influence leader's attitude and behavior. (Wibbeke, 2009) Reviewing and transforming some necessary parts of culture need to be emphasized because culture stimulates self-development to build leadership. (Adair, 2007) Organizational culture is as important as leadership which affecting organizational culture. In other words, in any organization in which value and guidance for becoming autonomous are low, management cannot increase personnel's potential. (Bass & Riggio, 2006)

In addition, Tsai et al. (2009) explored about relationship between organizational culture and style of leadership. Date were collected by 241 structural questionnaires. The result showed that organizational culture had an influenced on the style of leadership.

Organizational Culture and Technology Utilization

Cravens (2003) stated that all technologies are shaped by their particular cultural con

text. Different physical environments and geographies create different needs that require solutions. Bartol et al. (2001) proposed that organizational culture affects technology. It accelerates achievement of implementation of technology. (Intuchanyong, 2006) However, transforming the organizational culture takes time and is not easy. It needs cooperation from all staffs to create environment of transformation. If organizational culture can be transformed rapidly, it will ease organization to adopt and to implement technology. (Srinutapong, 2007)

In addition, Kongchuay (2011) conducted research on the linear structural equation model of causal factors influencing higher education management effectiveness. The study sample consisted of 500 teachers in Rajabhat University

in Southern Regional Area. Data were analyzed by LISREL. The result showed that organizational culture had an influenced on information technology.

Organizational Culture and Knowledge Management

It has been said that knowledge is power and, with this power, we will be in higher and more important than others. Because of this deep-rooted attitude, knowledge share does not happen in organization. Staffs in organization do not publicize their knowledge because they are afraid that their importance to organization will be lessened if others are more knowledgeable. This practice obstructs knowledge share. Organization needs to learn obstacles and try as hard as possible to eradicate those obstacles. Knowledge share needs to be supported by administrators. The administrators have to make staff realize the significance and necessity of transformation. (Boonyakit et al., 2005)

Knowledge management starts from building organizational culture to the degree that it can be implanted into value, norm, and mindset of organization, and organizational culture needs to be transformed for enabling knowledge management. (Liewpanich, 2010; Wutthirong, 2007) Success of knowledge management depends a lot on organizational culture transformation and the transformation is very important for redirecting personnel's attitude towards expected goal. Organizational culture is a mold forming personnel's behavior to satisfy organization's norm. Transforming organizational culture affects personnel's adjustment and behavior reformation towards expected direction which is the culture promoting trustworthiness in knowledge sharing. It is a horizontal and explicit culture which every involved person recognizes the benefit of knowledge and is willing to share their knowledge. It calls for participation, flexibility, and

adjustment of personnel in the organization. Organizational culture has a very crucial impact on personnel's knowledge management because knowledge management facilitates innovation for organization benefit which promotes effective and sustainable growth, and competitiveness in the global level. (Sripanwit, 2006)

In addition, Plooksang (2007) conducted research on factors influencing towards the success of knowledge management. The study sample consisted of 279 Meteorological officers. Statistical tools employed for data analysis were One-way ANOVA and multiple regression. The research result revealed that organizational culture had positively influenced on the achievement of implementing knowledge management. Wisuppakarn (2009) conducted research on the factors that influence knowledge management. The study sample consisted of operation and network employees of Government Savings Bank. The result showed that organizational culture contributing to the knowledge management. Bunpuang (2008) conducted research on organizational culture affecting knowledge management. The study sample consisted of 97 schools under the Ratchaburi Educational Service Area   Office 2. The respondents were administrators, head of the academic department and teachers, 388 respondents in total. The statistics applied in data analysis was stepwise multiple regression analysis. The result showed that organizational culture, as a whole, affecting the knowledge management.

Technology Utilization and Leadership

Stankosky (2005) stated that knowledge management technology affects leadership. Reddin (1986) stated that one of 5 contingency components determining leadership. One of them was technology. Information technology was helpful for modern leaders because 1) it helped leaders specify vision, strategy, mission, and action plan which were coincidental with current complicated situation, 2) it helped leaders make the most effective with the least problematic decision, enabled leaders to accurately predict direction of situations and problems, and solved the problems instantly, and 3) it helped leaders supervise and follow up performance of organization to make it in accord with prescribed vision, strategy, and plan. (Rattanangkun, 2009) Technology enabled leaders could overcome many of the challenges and constraints of traditional leadership to engage in leadership actions that are more open, collaborative and dynamic. (Rutherford, 2011)

In addition, Couzins (2011) surveyed about impact of technology on leadership

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development. The survey of more than 180 organizations in the private, public and not for profit sectors, representing more than 35,000 leaders and managers, showed that learning technology supported leadership (coaching, action learning programmes, workshops).

Technology Utilization and Organizational Culture

Bartol et al. (2001) proposed that information technology affected organizational culture. Davenport (1993) stated that information technology was a factor promoting organizational culture in terms of supervision and empowerment. Kaplan (2001) proposed that technology affected innovative culture.

Technology is a factor partially building organizational culture. It is related to staff's working performance, work design, and organizational structure design including administrative structure design. The advance of technology is directly related to staff's knowledge and competency levels. The more modern the technology is used, the more skillful specialist the organization needs. Working culture is highly based on working skill, and technology enables rapid organization development, transformation, and approachability. (Maharatsakul, 2004; Koonsri, 2005) Technology also has deep impact on culture, thought, and problem solving of people. It is administrator's task to make decision on information technology utilization for the highest benefit of business and organization including enhancing organization's competitiveness. (Konechanawan, 2007)

In addition, Wanapaibool (2009) conducted research on impact of technology on organizational culture and office space planning. The study sample consisted of police of local and provincial police station in Prajuabkirikhan, the condition of which is commonly found throughout Thailand. The result showed that technology used in office effects on organizational culture, enhancing the power of decision making more effectively, reducing communication between office itself, boosting the value of organization's branding, reducing paper document filing space and time's consuming of transportation and changing ways of working toward faster and more thoroughly performance.

Technology Utilization and Knowledge Management

To improve knowledge management system, information technology is required as a tool

for supporting and increasing effectiveness of knowledge management system; for example, in searching information, analyzing data, and organizing utilizing knowledge. (Stankosky, 2005; Kecharananta, 2008; Numprasertchai, 2002; Sakrungpongsakul & Yuttanawiboonchai, 2006; Inthawadee, 2005) Although knowledge management emphasizes mostly on the procedure and on people, it is impossible to conduct knowledge management effectively without the support from technology. (Liewpanich, 2009)

Technology factors including computer and network system, and information technology for knowledge management facilitate convenient and rapid use of knowledge. (Suanpleng, 2009) Technology advance, especially the internet and intranet, is a force easing knowledge share; moreover, modern data base system and knowledge portal are other facilitating factors. However, it is necessary to make sure that implemented technology is merged into existing knowledge of the organization and truly responds to the user's needs. (Boonyakit et al., 2005)

Nowadays, modern knowledge management is inseparable from information technology because the latter makes knowledge publicizing more convenient. It also helps measure, control, integrate knowledge, and guarantee accuracy of knowledge. Web-based application, internet, intranet, turbo note, web board, groupware; for example, are used for enabling real-time communication and knowledge transmission among all staffs. This informal network reduces lavish stages of control and equalizes knowledge share. Technology promotes knowledge utilization by collecting and organizing knowledge, encoding, and publicizing both explicit and tacit knowledge and the processed knowledge can be repeatedly used. Organization can use Best Practice data collecting technology to publicize to all staffs and to help develop best practice which enhances training, connection, and sharing knowledge among staffs. (Wutthirong, 2007)

In addition, Yaemprang et al. (2008) conducted research on the factors that contribute to knowledge management. The study sample consisted of 186 officers in Office of the Higher Education Commission. The result showed that the information technology affecting knowledge management. Wisuppakarn (2009) conducted research on the factors that influence knowledge management. The study sample consisted of operation and network employees of Government Savings Bank. The result showed that technological factors contributing to the knowledge management. Yoopetch (2009) conducted research on the knowledge management performance of bank branches in Thailand. The study sample consisted of 76 percent of bank branches in Bangkok. Data were collected by using 277 questionnaires, analyzed using Structural Equation Modeling (SEM). The result showed that knowledge management performance is affected by information technology support.

Knowledge Management and Leadership

Knowledge management and human resources management are two methods for developing leadership and managing for sustainability. (Gloet & Martin, 2004) Knowledge manager must be able to motivate staffs to help and share knowledge among each other for the profit of the organization. This method brings about leadership. (Nelke, 2010)

In addition, Crawford (2003) conducted research on exploring the relationship between knowledge management and transformational leadership. The study sample consisted of 845 students taking class in a non-traditional graduate degree program. Data were analyzed by regression analysis. The result showed that knowledge management behaviors were a predictor variable for transformational leadership.

Knowledge Management and Organizational Culture

Awad and Ghaziri (2004) stated that knowledge management affected organizational culture; good knowledge management leads to transforming of working behavior and building knowledge-oriented culture such as knowledge share, knowledge exchange, and knowledge management commitment in all sections of the organization. (Piboonrat, 2009; Lorsuwannarat, 2005; 2006) Knowledge management was also about fostering an organizational culture that encourages the creation, sharing and utilization of knowledge. (Awati, 2008) In addition, Rasheed (2005) proposed that knowledge management was a philosophy that effects corporate culture. The main purpose of implementing knowledge management technique is to transform organizational culture from independent culture to be sharing culture in which community is built in workplace and in organization. Knowledge management and vertical knowledge sharing culture support each other. (Panich, 2003; 2005) New working method and organizational culture in terms of power decentralization are built when effective knowledge management is achieved. (Klankaew, 2008)

Knowledge Management and Technology Utilization

Knowledge management is a philosophy that effects tools and technology. (Rasheed, 2005) Information technology is an important factor increasing effective of knowledge

management process especially the internet. It accelerates knowledge search, knowledge share, knowledge diffusion. Meanwhile, knowledge management affects information technology: the higher degree of knowledge management is implemented, the more information technology is needed. The main purposes of knowledge management are to systematize knowledge and to strengthen both internal and external knowledge. (Awad & Ghaziri, 2004; Lorsuwannarat, 2006)
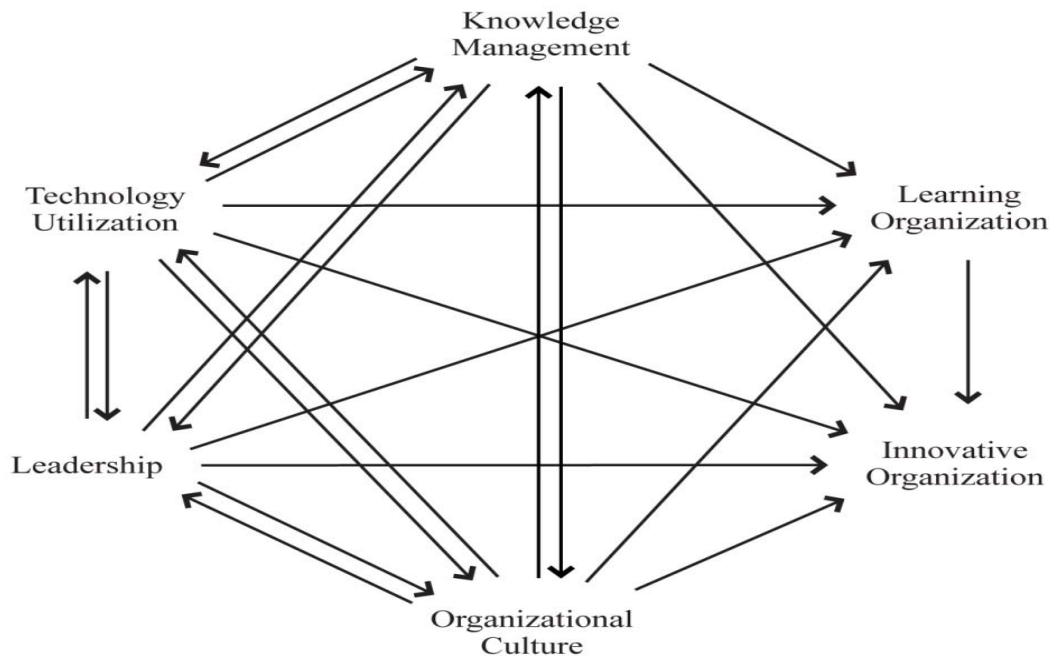
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Modernized organization leads to learning organization. Being learning organization, knowledge is adopted and applied for thoroughly transforming organizational behavior through innovation to increase competitiveness and internationalize the organization. Motivating and managing human resources to be able to introduce new things and to create innovative organization are the responsibility of leaders. They need to promote learning atmosphere in the organization. (Suanpleng, 2009; Yosyingyong, 2009; Thoucharee, 2010)

People in learning organization can learn new things all the time. Knowledge is constantly exchanged and transferred to other members in the organization; also, organization members can apply their experience and expertise for creatively increasing products and service values. This leads to maximization of products innovation, process, and management in the organization and business. (Thepphawan, 2005) Concept of learning organization is widely recognized as a management concept used for maximizing potential and competency of organization which is encountering challenge and changes all the time. Learning organization can be developed to innovative organization. This development is done by constant learning in terms of mutual learning or learning from researching to extend knowledge of the organization. The knowledge collected from thinking out of the box and searching new knowledge of members introduce innovation which is beneficial for the organization and nation. (Sungkhawan, 2008)

In addition, Wichittayarn (2009) conducted research on the innovation process and the factors that affect success of The Siam Cement Group (SCG). The study sample consisted of The Siam Ceramic Group Industries Company Limited (SGI), a subsidiary of The Siam Cement Group (SCG). Data were collected by interviewing of 2 administrators, 4 engineers, 3 marketers and 3 customers. The result showed that learning organization affecting the innovative success of the company.

Conclusion

From the review of concepts and studies related to factors affecting organization to become learning and innovative organization including correlation between those factors, it is found that: 1) Leadership has a direct impact on becoming learning organization and innovative organization. 2) Organizational culture has a direct impact on becoming learning organization and innovative organization. 3) Technology utilization has a direct impact on becoming learning organization and innovative organization. 4) Knowledge management has a direct impact on becoming learning organization and innovative organization. In addition, the interrelation among affecting factors is as followed. 1) Leadership is affected by organizational culture, technology utilization, and knowledge management. 2) Organizational culture is affected by leadership, technology utilization, and knowledge management. 3) Technology utilization is affected by leadership, organizational culture, and knowledge management. 4) Knowledge management is affected by leadership, organizational culture, and technology utilization. The findings of this study can be extended for further studies in terms of exploring causal factors affecting organization to become learning organization and innovative organization by applying SEM (Structural equation modeling) into analysis framework. Data can be collected from governmental organizations, state enterprising organizations, or private companies. The studies can be conducted to determine whether or not those causal factors affect organization to become learning organization and

innovative organization, and if they do, to what extend? The result can be used for developing strategic plan reinforcing organization to become learning organization and innovative organization.

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