Use of Web 2.0 to Support Human Capital Creation: A Case of Indigenous Knowledge in Rural of Thailand

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Abstract

Indigenous knowledge (IK) has values for local in strengthening food, health and economic security, and sustainable society and ecological systems. It would be human capital for local communities, especially the young generation before they have been far from communities, in order to effectively utilize it. IK has specific characteristics. It is transferred and created based on oral transmission and informal methods within local environments and cultures. IK human capital creation for the young generation would be based on learning styles of the young generation known as the Net generation. This study aimed to apply Web 2.0 services to support IK human capital creation for the young generation in rural of Thailand. This study was conducted with action research at Baan Yangdaeng school in Sanamchaikate district of Chacheonsao province in the east-central region of Thailand. The population of the study was students at Prathom 5 and 6 which altogether 22 students and resource people for indigenous knowledge HC creation were the members of the Organic Agriculture in Sanamechaikate district who were community members. An action team chose four Web 2.0 services—blog, social network with Facebook, and multi-media sharing with Youtube and Flickr to support IK human capital creation processes. The study used the knowledge of indigenous vegetable as the IK for study. The study found that students were interested to use social network with Facebook,

and multi-media sharing with Youtube to learning and sharing. All the services would support both direct and indirect IK human capital creation processes.

Keywords: Human capital, Human capital creation, Indigenous knowledge, Web 2.0

Introduction

Human capital is an important resource for every person, organisation to perform activities, especially, knowledge driven activities. Human capital (HC) is considered as knowledge, skills and experience of humans. These elements can be used to increase the effectiveness of people's activities or to support them to achieve their goals. IK human capital is also important to societies, especially local communities. IK encourages the communities to be strengthening and sustainability of food, health and economic because communities would manage and develop by themselves (Jones, 2012). However, there are no any organisation including education institutes be responsible to develop IK human capital to communities members. This is because IK has specific characteristics which would be naturally transferred from a generation to a generation and created as human capital embedded in new generation. IK is fragile to be lost. IK has been threatened by western societies and not been interested by the young generation (Obomsawin, 2001). Therefore, in order to take attention from the young generation to create indigenous knowledge human capital, the human creation processes would be matched with the learning styles of the young generation. Web 2.0 services have been interested among young generation for both daily activities and education activities. Web 2.0 technologies and services have characteristics that match with learning styles of the young generation or internet generation. This study aimed to apply Web 2.0 to support indigenous knowledge human capital creation for a young generation.

Literature Review

Human capital

Human capital (HC) is an intangible asset which can be classified as an intellectual capital (Baron and Armstrong, 2007), and is considered as knowledge in the form of tacit knowledge including skills, competencies, experience (Hatch and Dyer, 2004). Beaker (1962)

considered HC includes behaviour, reputation and beliefs. This is because behaviour HC is useful for individuals to gain good jobs (Ehrenberg and Smith, 2003). Furthermore, several researchers have considered HC from the educational perspective in terms of the parents' education, and the education and learning investment of their offspring (Baron and Armstrong, 2007). Thus, HC can be viewed in several forms, (both explicit and tacit forms), which can be classified into three types—formal education, tacit HC and behaviour HC. First, formal education is an explicit form of HC including materials invested for education and parents' education (Coleman, 1988). This form of HC can be referred to as 'declarative knowledge' which shows the knowledge or HC particular individuals possessing (Nahapiet and Ghoshal, 1998). Second, tacit HC is concerned with skills, competencies, experience and talent that are embedded in humans (Baron and Armstrong, 2007). This kind of HC can refer to as the 'understanding and abilities of people' to do something. It can be compared with "know how" or procedural knowledge which is emerged from work experience and practice over a certain periods of time (Skyrme, 1999). Third, behaviour HC is concerned with behaviour which can be both words and motion that people do or say in order to response to internal and external events (Sarafino, 2001). Beaker (1962) explained that behaviour is considered HC because behaviour can be used to perform activities. Each activity and position requires different behaviour (Ehrenberg and Smith; 2003). Thus, people have to develop themselves to have some particular behaviour for particular activities. Both tacit and behaviour HC are referred to HC that people retain.

It can be seen that HC is referred to education, learning materials, knowledge and behaviour. Those can be classified into both tangible and intangible elements, or HC that people intake and HC that people retain in respectively. For local areas, they would have particular knowledge and behaviour as HC that is value to communities. Those types of HC would be obtained with particular activities or methods, and can be viewed in different forms according to the characteristics of traditional knowledge or indigenous knowledge.

Indigenous knowledge

Indigenous knowledge (IK) is referred to traditional knowledge possessed by groups of people living in particular areas for a long period of time. IK is not concerned with old-fashioned

or static knowledge (Langill, 2007). It is dynamic and collective, holistic, implicit, and subjective. First, IK is involved with long-term occupancy in a particular area together with adaptation to local conditions, including culture, environment and the local people's requirements for living. It is derived through the collaboration and interaction of people and the environment (Sefa Dei, Hall and Rosenberg, 2000). Second, IK is derived from the integration of complex components including individual components, local ecosystems and social context (Sefa Dei, Hall and Rosenberg, 2000). Third, IK is implicit and encompasses the skills, experience and insights of people (Obomsawin, 2001). It passes on to next generations through traditional methods—oral transmission, teaching and learning from community elders, and direct experience. Lastly, IK is rooted in personal and direct experience thru a long-term observation and understanding of the local environment and culture (Sefa Dei, Hall and Rosenberg, 2000). On this basis, IK is focused on occupancy and practice in particular environment and culture. It is more concerned with tacit and procedural knowledge which cannot be easily transferred, acquired, created and encoded through conventional methods and formal education. As a result, HC in the aspect of IK would be created in different ways from general HC or HC in an organisational aspect. Furthermore, IK human capital creation for a young generation would be considered more on the young generation or internet generation learning styles. For Sanamchaikate district, there are several indigenous vegetables that have been passed from generation to generation for local dishes and as a goods for selling.

Human capital creation

Many researchers, such as Hitt (2001), and Hatch and Dyer 2004) described HC as the result of the learning processes. Meanwhile, some researchers consider HC as the formal education and the learning materials they have owned, and consider HC creation as an education and learning resource investment. Becker (1962) indicated that HC creation is concerned with information and education investment in order to implant the information into people to create HC, and Coleman (1988) mentioned that HC creation is associated with learning resource investment and parents' knowledge enlargement. It can be seen that HC creation is concerned with information transferring and creating knowledge, skills and competencies within people. It is also

associated with behaviour modification regarding HC types. According to the literature review, HC creation could be grouped into two groups; direct human capital creation and indirect human capital creation.

Firstly, direct HC creation is concerned with processes that allow tacit HC and behavior HC to be emerged in people. This approach includes the processes of schooling, training, working, parenting and behaviour modification. Schooling is a general method to create HC for a youngster (Coleman, 1988). For adults, schooling is concerned with specialised areas of study or training programmes which provide values for learners. Working or on-the-job training is very important for HC investment in organisations. This method helps employees to gain new skills for working effectively, and organisations pay less cost for this method (Becker, 1962). Parenting is important for HC creation in children. This is because parents would be key people who transfer knowledge to their children while taking care of them. Furthermore, parenting is the part of behaviour modification. Regarding to psychological aspect, behaviour can be modified through Learning and cognitive processes, parenting, modeling and correcting and self-management (Sarafino, 2001). Secondly, indirect HC creation includes learning equipment investment and parent's education. Becker (1962) contented that HC investment includes investment in equipment, materials and information for school and training. For parent's education, Coleman (1988) indicated that parent's education can support HC creation in children because parents and also relatives are main resource people who provide information and knowledge for children in families. HC creation needs both processes without sequential. Regarding knowledge processes, to create tacit knowledge or profound understanding or useable knowledge requires declarative knowledge as a material for knowledge creation. Thus, HC creation would prepare materials or information for the one who wants to create HC and parents who would be the part of HC creation. However, materials and information provision would be suitable with the young generation.

Young generation learning characteristics

Nowadays, the young generation is referred to the Net generation who has borned in 1980 onward. They can be referred to generation Y - Z (Kennedy and et. al., 2007). These generations have born in the era that the internet was gradually developed. They have been

familiar with cyber spaces and online systems. Kvavik (2005) and Philip (2007) summarised the Net generation has four main characteristics: have good at computer literacy, online all time, communicate in interactive way thru instant message and access to information thru digital media. Regarding the characteristics of the Net generation, they have learning styles of interactive learning, learning by doing, learning with visual-spatial skills, learning in group with peer-to-peer networking, and attentional deployment in learning. In other words, the Net generation has been independent in learning, choosing interesting topics by themselves and fast in changing their interests. These characteristics match with the characteristics of Web 2.0 technologies and services. There are several research study have shown that Web 2.0 services support well in learning of the Net generation.

Web 2.0

Web 2.0 technology is referred to the second era of web services including computer structure, programmes or information systems, and the Internet users (Governor, Hinchcliffe and Nickull, 2009). From user points of view, there are more characteristics including free of charge services on WWW with collaboration, collective intelligence, interactive communication and rich multimedia experiences. 1) Web is a platform of Web 2.0 services for both Web 2.0 users and developers. Applications and software for Web 2.0 services have worked on the WWW as cloud computing (Tredinnick, 2011). Software for application development for Web 2.0 has the characteristic of light weight programming. 2) Web 2.0 is collaborative and sharing environment. Users are allowed to create or edit contents on Web 2.0 (Stephens, 2009). Most of contents on Web 2.0 created by users at age 7-34 years old who did not have any experts (Laudon and Traver, 2012). The services are focused on this characteristic including Wikis, blogs and social networks. 3) Web 2.0 became collective intelligence with rich media experiences. Web 2.0 that is focused on this characteristic is wikis, blog and media sharing. 4) Web 2.0 promotes interactive communications with real-time processing. This characteristic would stimulate information sharing and control contents (Radziwill and Duplain, 2009). Web 2.0 that is focused on this characteristic is social network and Wikis. 5) Web 2.0 is mobile. Any application allows user to use on many devices. For instance media sharing on Youtube channel and file sharing on dropbox or Skydrive can be used around over any computer (O,Rielly, 2005).

Regarding the characteristics of Web 2.0, most Web 2.0 services would support indigenous knowledge HC creation for the Net Generation. Cardoso, Carvalho and Ramos (2009) found that information sharing could stimulate learning processes. This is because group learning and communities including virtual community reinforce information sharing and cognitive processing of group members. Web 2.0 that would support HC creation would be grouped into two groups: Web 2.0 services focused on content collecting and sharing, and Web 2.0 services focused on collaboration. Firstly, Web 2.0 services that are focused on content collecting and sharing include Blog, Multimedia sharing, Folksonomy and file sharing. Blog is referred to open diary which allow user to acquire information and to share opinions (Stephens, 2009). Blog is normally comprises Really Simple Syndication (RSS) which could support users to follow up information presented at the blog. Multimedia sharing can be divided into three groups of services—photo sharing, audio sharing and video sharing--, for instance Picasa and Flickr are services for photo sharing, and Youtube is a service for video sharing. Secondly, Web 2.0 services that are focused on collaboration include Wikis and social network. Wikis are referred to open encyclopedia that allows users to edit contents on the Wiki pages. Meanwhile, social network allows users to present their profiles, share experiences which are associated with tacit knowledge (Cardoso Carvalho and Ramos. 2009). Popular social network that most people around the world used are Facebook, Twitter and LinkedIn (Laudon and Traver, 2012). Both multi-media sharing and social network are normally contain Folksonomy which is concerned with marking-up, and classifying information or indexing information with tag or the symbol of "#" which allows information or knowledge with the same tags or facet gathering together. In other words, folksonomy is associated with content collecting. It can be seen that there are several Web 2.0 services would support both direct and indirect processes of IK human capital creation for the young generation. The Web 2.0 services in the first group would support processes and the services in the second group would support the direct IK human capital creation processes.

Indigenous knowledge Human capital creation for the young generation

From the literature review, IK Human capital creation for the young generation needs to consider the characteristics of IK which are associated with local contexts and environment, and

the young generation learning characteristics. IK Human capital creation processes would comprise three processes—knowledge selection, knowledge transmission, and learning and understanding. 1) Knowledge selection is concerned with screening knowledge that matches with the young generation interests and community environment. 2) Knowledge transmission is concerned with two sub-processes—knowledge transfer from senior community members and knowledge acquisition by the young generation. Regarding indigenous knowledge would not be transferred thru formal education, the indigenous knowledge transfer would use informal activities. 3) Learning and understanding processes would focus on learning by doing, parenting and self-management which would support the young generation to understand knowledge acquired and create all types of HC for themselves. All IK Human capital creation processes, especially knowledge transmission, and learning and understanding would be applied Web 2.0 services to attract the young generation to learn on IK. These arguments would be a theoretical framework of this research as figure 1.

Methodology

This research used action research in the form of interpretive action research that allows researchers to participate in activity conducting and reporting the activities. This study focused on indigenous knowledge HC creation processes for the young generation with use of Web 2.0 services. A research site for this study was Baan Yangdaeng School in Sanamechaikate district, Chacheonsao province. The population of the study was students at Prathom 5 and 6 which altogether 22 students and resource people for indigenous knowledge HC creation were the members of the Organic Agriculture in Sanamechaikate district who were community members. The study would select and developed Web 2.0 services that matched with the learning styles of the young generation in the rural areas of Thailand as tools of this research. Data collection for this study was focus group, observation, in-depth interview and questionnaires. The questionnaires were used for HC measurement in order to evaluate the result of HC processes with use of Web 2.0 services.

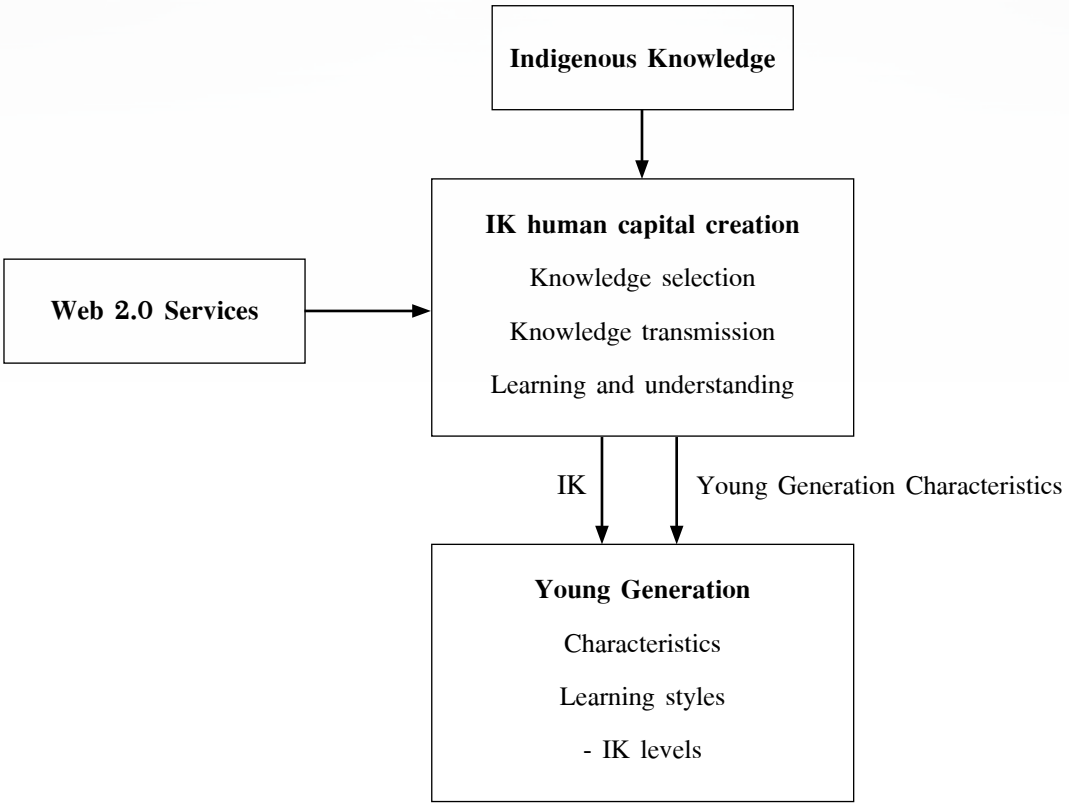

Figure 1 A theoretical framework (Modified from Jonjoubsong, Thammabunwarit and Lertkamolruk, 2017)

Results and discussion

Web 2.0 services for indigenous knowledge HC creation

This paper aims to present the research results in the part of use of Web 2.0 services to support IK human capital creation for the young generation which was developed by Jonjoubsong, Thammabunwarit and Lertkamolruk (2017). Web 2.0 services that were chose to support the HC creation processes—knowledge selection, knowledge transmission, and leaning and understanding—have major features that support three learning characteristics of the young generation—1) to support interactive learning, 2) to support visual experience learning, and 3) to support group learning. There were Blog, photo albums, video sharing and social network which were developed

as Indivegies Blog, Flickr Indivegies albums, Indivegies Youtube channel and Indivegies page on Facebook. Figure 2 shows all Web 2.0 services that were developed for the HC creation.

1) Indivegies Blog was served HC creation process as contents or knowledge preparing. This is because blog has the feature of knowledge collecting place for web users (Funk, 2009). The study of Shang, Li, Wu and Hou (2011) indicated that blog was used as knowledge transfer media for organisations. The blog was maintained by research assistants. Indivegies Blog presented IK of indigenous vegetables (IV) of Sanamchaikate district, Chachengsao province. The knowledge comprises 4 areas— types of IV, IV cultivation and harvesting, and IV dish and how to cook. Indivegies Blog consisted of RSS which allows users to directly follow up information up-loaded to the blog. Even though, the scholar insisted that blog is a good tool for knowledge collecting and sharing among network, Thai students at the research site where is considered as rural area was not interested to use it.

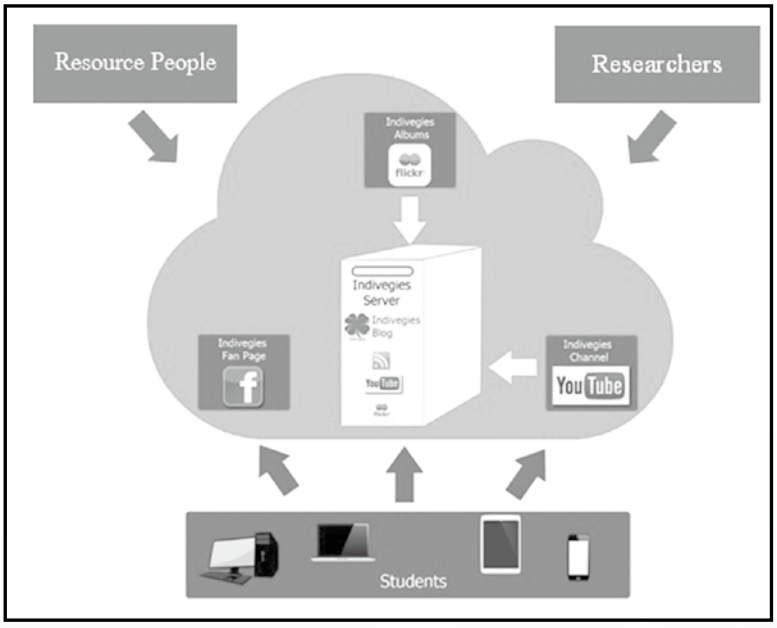

Figure 2 Web 2.0 services for indigenous knowledge human capital creation

2) Indivegies Albums were developed thru Flickr as photo inventory of indigenous knowledge HC creation project. All participants of the project who we stayed in different places could access the albums to use the photos for other services, such as blog and social network. From the researchers' observation, it was the same as Indivegies Blog that the students were not interested. The students preferred to use photos that they took.

3) Indivegies YouTube channel was used as a rich media experience channel to transfer knowledge of IV. The IK human capital creation project produced 4 video clips concerned with IV types, IV cultivation and harvesting, and IV dish and cooking. Students were interested to use Youtube clips as tools to review knowledge after field work. The clips could influence the students to discuss about IV knowledge that they learnt. This is because they were actors in the locations that they were familiar, and Youtube is powerful rich media experience of Web 2.0 services (Funk, 2009). The result was related to the note of Radziwill and Duplan (2009) that Visual-spatial skills can influence the Net generation in interactive learning, and the study of Dogan, Gilgic, Duman and Seferoglu (2012) that Youtube channels were attracted high school students in Turkey in learning a lot of information.

4) Indivegies page was Facebook page that the indigenous knowledge HC creation created as a platform for students and communities experts to share knowledge and experience of IV knowledge. Social network with folksonomy or tag (#) allows members of the network directly obtain information from other members and stimulate interactive among members (Stephens, 2009). Indivegies page with Facebook was the most interesting services among the students. Most students in the project who could afford the internet at home became friend of the page and regularly follow the pages. The interests of the students were match with the Thai society that 88.6 per cent of the Internet users preferred to use social network (National Statistic Office, 2015) and Facebook is the most popular social network in Thailand in 2014 (It24hrs, 2014).

Regarding the characteristics of Web 2.0 technology and services, Web 2.0 services that support interactive learning includes blog, multi-media sharing (Youtube) and social network (Facebook) allow students to share their experience. These services have features that allow users to share their experience and opinions over information dissemination (Stephens, 2009). Youtube is multi-media sharing that was popular among the young generation in many countries in Asia, Australia and America regarding the results of the study of Williams and Chinn (2009), Dogan, Gilgic, Duman and Seferoglu (2012), Mao (2014), and Sigala and Chalkiti (2014). Web 2.0 services that support visual-spatial learning includes multi-media sharing (Youtube and Flickr). Both services have a feature of rich media experience (Funk, 2009). Lastly, Web 2.0 services that support group learning includes social network and multi-media sharing (Youtube) which have a feature of collaboration. Both services allow users to create their services with tag or Folksonomy that involve other users to shape the contents. In terms of HC creation processes, all Web 2.0 services chosen for the IK human capital creation project support all HC creation processes—knowledge selection, knowledge transmission, and learning and understanding, and both direct and indirect HC creation. All services would support knowledge selection because students could make decision in order to participant in any services and information by themselves. The same as knowledge selection, all services supported knowledge transfer, and leaning and understanding. This is because all services allow both resource people and students to share experience and learning from each other through sharing, comments and tagging. Sharing and comments on the Web 2.0 services show the understanding, or the results of learning and understanding. This is because users need to expresses some opinions which would come from experience and understanding. Regarding to sense-making processes explained by Trice and Beyer (1993) understanding of people can come from cognitive processes which create understanding of things or events through perception and interpretation. In terms of direct HC creation processes—schooling and training activities, working and behaviour modification—the discussion above has shown that the students liked to review the studying thru Youtube, and the resource people stimulated the students to use all service for indigenous vegetable studying at the school and on their free time. For behaviour modification, all services provided information and examples for the students to modify their behavior. Information and example or model are important resource for

behaviour modification as suggestion of Sarafino (2001). Secondly, all services supported indirect HC creation as resources or tools for HC creation processes

Conclusion and suggestions

Indigenous knowledge human capital creation for the young generation model with three main processes—information screening, knowledge transmission, and learning and understanding—were applied to the students at Baan Yangdaeng school with the use of Web 2.0 services—blog, media sharing and social network—to support learning of the young generation. The study found that all Web 2.0 services selected in this project could support IK human capital creation for the young generation, but the young generation who are children in rural areas of East region in Thailand, were interested to use only media sharing thru Youtube and social network on Facebook. Thus, researchers on IK human capital creation for the young generation would study more on how to influence the young generation to use other services that are powerful for sharing and collaboration, and Web 2.0 features and design that attract the learning of the young generation in rural area.

เอกสารอ้างอิง

Baron, A. and Armstrong, M. (2007). Human capital management Achieving added value through people**.** London: Kogan Page.

Becker, G.S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*. 9-49.

Cardoso, M., Vidal, J. and Ramos, I. (2009). Open innovation communities...or should it be "Networks"?. In M. D. Lytras, E. Damiani and P.O. de Pablos (Eds.). *Web 2.0 The business model.* page 53-74. New York, NY: Springer.

Coleman, J.S. (1988). Social capital in the creation of human capital. *AJS.* 94. S95 – S120.

Dogan, D., Bilgic, .G., Duman, D. and Seferoglu, S.S. (2012). Frequency and aim of web 2.0 tools usage by secondary school students and their awareness level of these tools. *Procedia-Social and Behavioral Sciences***.** 47(2012) 540-551.

Ehrenberg, R.G. and Smith, R.S. (2003). *Modern labor economics.* Boston: Addison Wesley.

Funk, T.(2009). *Web 2.0 and beyond Understanding the new online business models, trends, and technologies.* London: Praeger.

Governor, J., Hinchcliffe, D. and Nickull, D. (2009). *Web 2.0 Architectures.* Sebastopal, CA: O'Reilly Media.

Hatch, N.W. and Dyer, J.H. (2004). Human capital and learning as a source of sustainable competitive advantage. Strategic Management Journal. 25. 1155 – 1178.

Hitt, M.A., Blerman, L., Shimizu, K. and Kochhar, R. (2001). Direct and moerating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management journal.* 44 (3). 23-28.

It24hrs. (2557). *Thailand Zocial Award 2014 เผยสถิติบนโลกออนไลน์และพฤติกรรมการใช้ Social Network ของคนไทย [Online behavior of Thais statistice].* Retrieved 26 January 2014, from https://www.it24hrs.com/2014/thai-social-network-2014.

Jones, G.N. (2012). The importance of indigenous knowledge and good governance to ensuring effective public participation in environmental impact assessments. *ISTF News*.

Jonjoubsong, L., Thammabunwarit, N. and Lertkamolruk, K. (2017). *การใช้เทคโนโลยีเว็บ 2.0 ในการสนับสนุนการสร้างทุนมนุษย์ความรู้ท้องถิ่นให้คนรุ่นใหม่ผ่านกระบวนการถ่ายทอดความรู้ [Use of Web 2.0 to Support Human Capital Creation in the Area of Indigenous Knowledge in Young Generation through Knowledge Transfer Model].* Unpublished Research Report of Huachiew Chalermprakiet University, Samutprakran.

Kennedy,G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., Maton, K., Krause, K., Bishop, A., Chang, R., and Churchward, A. (2007). The Net generation are not big users of Web 2.0 technologies: Preliminary findings**.** Proceedings ascilite, Singapore.

Kvavik, R. (2005). Convenience, communications, and control: How students use technology. In D.G. Oblinger and J.L. Oblinger (Eds.), *Educating the Net Generation*. Educause E-book. page. 7.1 – 7.20.

Langill, S.(2007). Introduction to indigenous knowledge. *The Overstory Agroforestry Journal*. (82).

Laudon, K. and Traver, G. (2012). *E-commerce: business technology, society***.** 8th ed. Boston: Pearson.

Mao, J. (2014). Social media for learning: A mixed methods study on high school students' technology affordances and perspectives. *Computers in Human Behavior*. 33(2014). 213-223.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management***.** 23(2). 242-266.

National Statistic Office. (2015). สรุปผลที่สำคัญสำรวจการมีการใช้เทคโนโลยีสารสนเทศ และการสื่อสารในครัวเรือน พ.ศ. 2558 [Summary of information and communications technology in household in 2015]. Bangkok: National Statistic Office.

O'Reilly, T. (2005)**.** What Is Web 2.0 Design Patterns and Business Models for the Next Generation of Software. Retrieved 2 June 2016, from http://www.oreilly.com/pub/a/ web2/ archive/what-is-web-20.html.

Obomsawin, R. (2001). Indigenous knowledge and sustainable development. Development Express. (3). 1-3.

Radziwill, N. and DuPlain, R. (2009). A model for business innovation in the Web 2.0 world. In M.D. Lytras, E. Damiani and P.O. de Pablogs, (Eds.). *Web 2.0 The business model.* page 75 - 88. Springer.

Sarafino, E.P. (2001). *Behavior modification: Understanding principles of behavior change.* Mountain View, California: Mayfield.

Sefa Dei, G.J., Hall, B.L. and Rosenberg, D.G. (2000). Introduction. In G.J. Sefa Dei, B.L Hall, and D.G. Rosenberg (Eds.), *Indigenous knowledge in global contexts.* Toronto: University of Toronto Press. page 3-17.

Shang, S.S.C., Li, E.Y., Wu, Y. and Hou, O.C.L. (2011). Understanding Web 2.0 service models: A knowledge-creating perspective. *Information & Management.* 48(2011). 178 – 184.

Sigala, M. and Chlkiti, K. (2014). Investigating the exploitation of web 2.0 for knowledge management in the Greek tourism industry: An utilization-importance analysis. *Computers in Human Behavior.* 30(2014). 800 – 812.

Skyrme, D.J. (1999). *Knowledge networking: Creating the collaborative enterprise.* Oxford: Butterworth-Heinemann.

Stephens, R.T. (2009). Empirical analysis of functional Web 2.0 Environments. In M. D. Lytras, E. Damiani and P.O. de Pablos (Eds.), *Web 2.0 The business model.* New York, NY: Springer. page 1-20.

Skyrme, D.J. (1999). *Knowledge networking: Creating the collaborative enterprise.* Oxford: Butterworth-Heinemann.

Tredinnick, L. (2011). Web 2.0 and business A pointer to the intranets of the future?. *Business Information Review.* 23(4). 228-234.

Trice, H. and Beyer, J.M. (1993). *The cultures of work organizations.* Englewood Cliffs: Prentice-Hall.

Williams, J and Chinn, S.J. (2009). Using Web 2.0 to support the active learning experience. *Journal of Information Systems Education.* 20(2). 165-174.