สื่อสังคม จากความรู้สู่ความเข้าใจการสะท้อนคิดความเชี่ยวชาญเป็นขั้นตอนการปฏิบัติงานมาตรฐาน

Social Media : Form Knowledge to Knowing, Reflective Expertise into Standard Operating Procedure

สุภาพร สรสิทธิรัตน์[1] ***Suphaphon Sorasittirat***

อรจรีย์ ณ ตะกั่วทุ่ง[1] ***Onjaree Natakuatoong***

ธีรวดี ถังคบุตร[1] ***Theeravadee Thangkabutra***

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อพัฒนารูปแบบการจัดการความรู้สำหรับเครือข่ายชุมชนมืออาชีพด้วยสื่อสังคมเพื่อส่งเสริมสมรรถนะความเชี่ยวชาญของข้าราชการพลเรือน การวิจัยครั้งนี้แบ่งออกเป็น 2 ช่วงคือ (1) การสำรวจพฤติกรรมการใช้สื่อสังคมมีกลุ่มตัวอย่าง จำนวน 385 คน โดยใช้การสุ่มตัวอย่างแบบหลายขั้นตอนและเก็บรวบรวมข้อมูลด้วยแบบสอบถามและวิเคราะห์ข้อมูลด้วยความถี่ ร้อยละ (2) การสร้างรูปแบบการจัดการความรู้รับรองโดยผู้เชี่ยวชาญ จำนวน 5 คน โดยใช้การสุ่มตัวอย่างแบบเจาะจง (Purposive Sampling) และการเก็บรวบรวมข้อมูลด้วยแบบสอบถามแบบปลายเปิดจากนั้นจึงนำผลการวิจัยมาปรับปรุงเพื่อสร้างเป็นรูปแบบแนวคิด

[1] Department of Educational Technology and Communications, Faculty of Education, Chulalongkorn University.

รับต้นฉบับ 1 พฤษภาคม 2560 ปรับแก้ไขตามข้อเสนอแนะของผู้ทรงคุณวุฒิ 31 พฤษภาคม 2560
รับลงตีพิมพ์ 21 มิถุนายน 2560

ผลการวิจัยแสดงให้เห็นถึง (1) แนวโน้มด้านเวลา: ข้าราชการพลเรือนมีประสบการณ์ในการใช้สื่อสังคมมามากกว่า 4 ปี เข้าใช้สื่อสังคมน้อยกว่า 10 ครั้งต่อวัน ใช้เวลาเฉลี่ย 30 นาที-1 ชั่วโมงต่อครั้ง และช่วงเวลาที่เข้าใช้สื่อสังคมคือ 20.00-12.00 น.สถานที่และอุปกรณ์: สถานที่และอุปกรณ์ที่นิยมใช้สื่อสังคม คือ บ้านและสมาร์ทโฟน สื่อสังคมที่นิยมที่สุด คือ Line และเหตุผลและการใช้งานสื่อสังคม: ข้าราชการพลเรือนเขียนสื่อสังคม 1-2 ครั้งต่อเดือน ส่วนใหญ่ใช้ตัวอักษรในการสื่อสารและใช้สนทนาในห้องสนทนา และเหตุผลในการใช้สื่อสังคม คือ สื่อสังคมมีความรู้ใหม่ๆ และทันสมัยและ (2) รูปแบบการจัดการความรู้ฯ ประกอบด้วย 2 ส่วนหลัก คือ องค์ประกอบของโมเดล: บุคลากรกระบวนการเทคโนโลยีเครือข่ายและวัฒนธรรมชุมชนมืออาชีพและขั้นตอนของรูปแบบ: ปฐมนิเทศการประชุมเชิงปฏิบัติการการจัดการความรู้ของตนเองด้วยตนเองการจัดการความรู้แบบหนึ่งต่อหลายคนการจัดการความรู้แบบคู่ การจัดการความรู้แบบกลุ่มและการประเมินผลองค์ความรู้

Abstract

The purpose of this research aims to developknowledge management modelsfor networked communities of professionals using social media to enhance expertise competency of civil officers. This research was divided into 2 phases: (1) Social Media Behavior Survey, sampling 385 civil officers, using multi-stage sampling and collecting data by questionnaire, and analyzing data by frequency, and percentage. (2) Constructing the model, validated by 5 experts, using purposive sampling, and collecting data by open-end questionnaire,then the findings were used to improve as draw to concept model.

Results show that(1) there will alsosocial media behavior of civil officers tend to be Time: civil officers' experiences in social media more than 4 years, visit social media less than 10 times per day, average time spent on social media is 30 minutes -1 hour, and 8.01 p.m.-0.00 a.m. is period of the most time spent on social media.Place & Device, popular place and device using social media are

home and smartphone, popular social media is Line. And Reason & Usage, civil officers writing on social media 1-2 times per month, and mostly use alphabet for communication and chatting in chatroom, and reason for using social media is contains new and modern knowledge and (2) The result of the model consisted of two main partsthe component of model: personnel, processes, technologies, networks, and professionalscommunity culture, the steps of model: orientation, workshop, KM Manually, KM One-to-Many, KM Dyad, KM Group and KMEvaluation.

Keyword: Social Media, Knowledge Management, Expertise

Introduction

Web 2.0 applications and technological progress changed web pattern from contents only to generating social environment which is easy to connect and increase participation on web (Mueller et al., 2011). Users can easily interact with other people and create online content (Lai & Turban, 2008). With the growth of social media and online communities, individuals can easily share and access information (Chen & Whinston, 2011). Online communities and social networking sites are an effective web technology for social interactions, and communication mode can be applied to individual level and group level, sharing information online facilitates group communication extensively at all levels of communities (Lu & Hsiao, 2010).

Expertise is a core competency of Civil Service Competency Models that The Office of the Civil Service Commission (OCSC) introduced knowledge management (KM) as a tool to develop civil officers with the main goal to solve the problem of losing knowledge in retirecivil officers due to organizational structure changed, official ageand diversity of government agency. Implementing knowledge management system along with running operations without intermittent can capture knowledge from existing civil officers, especially tacit knowledge gainingfrom actual practices

and embedded in each individual in the form of skills and experiences.Therefore, knowledge management mainly focuses on practical routine operations and pays more attention to workers than educators or scholars. When civil officers can manage own knowledge has been continued for a while, it will generate to own expertise (OCSC, 2010, 2014).

An obstacle of core competency development is lack of motivation to develop knowledge and skillsuntilacquiring expertise in career or cannot apply knowledge and skills gaining from routine tasks to deploy organization benefits. Moreover, some civil officers are satisfied with their existing knowledge and traditional practices, and do not like studying or pursuing new knowledge or technologies related to their jobs. As a result, they are not active for creativity and achievement for either themselves or organization (OCSC, 2010). According to the study of Daniel, McCalla & Schwier (2008) and Bell (2011), causes of insufficient knowledge management arethe lack of interaction and lack of participation in the process,do not try to share knowledge and do not work together because they believe that they can learn from the internet themselves. Furthermore, the current practice of knowledge sharing does not work out as it should be because most of the existing knowledge sharing toolis simply documents whichcannot be truly used (Polanyi, 2009; Majewski & Usoro, 2011).

Social media as delivery and communication instrumental, provide learning space, building networking and distribute knowledgeto enhancecrystalized intelligence and construct cognitive for civil officers, therefore, receive knowledge that reflected many times in social media that distinctively to accumulate and formation expertise competency at last.

The main point of this article focuses on delivering social media behavior of civil officers in order to develop models for civil officer development in line with the civil service development strategy, systematically solve problems of competency development,encourage interaction between civil officers to engage in

learning, be able to manage knowledge in both individual level and organization level, reduce gap and increase work efficiency of personnel in the organization for better performance.

Literature review and theoretical background

Social media comprisesthe set of tools identified as Blogs, Wikis and other social network platforms which are enable people to connect, communicate and collaborate (Hemsley & Mason, 2012). It isnetworking tool or technologyfocusing onthe social aspect of internet as channels for communication, collaboration and creative expression through web 2.0 technology (Dabbagh, & Reo, 2011). Social media is categorized into 3 groups as follows; (1) Communication: social media in this group is personal communication tool displaying result list in chronological order. (2) Social networking: it is a tool to create network by writing and describing interests and activities which have been performed in groups of friends. Content is stored on their own pages, and (3) Content communities: it is a channel to share content, knowledge and video (Kaplan, & Haenlin, 2010).

Interaction levels in social media include; Level 1 Information management: Users are encouraged to use social media to engage the learning, be able to control their learning, create contents, use contents and produce outputs by themselves. Level 2 Socialinteraction and collaborative learning: Social media is used in sharing and learning activities, it expands learning space from individual level to social level by collaborative learning, sharing, commenting and discussion among users. And Level 3 Information gathering and management: It is the increasing level of social media usage by synthesizing data from Level 1 and Level 2 to reflect their overall learning experiences and encourage participation in the self-assessment process by reflecting on user's performance (Kitsantas&Dabbagh, 2010;Dabbagh& Reo, 2011; Dabbagh & Kitsantas, 2012).

Social media was developed based on the structure of Knowledge Management System including (1) knowledge creation (2) storage, access, sharing and knowledge distribution, and (3) knowledge application (Choo, 2006; Shin, Holden, & Schmidt, 2001; Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). New knowledge is created by building social relationships, sharing knowledge and working together. Social media is distributed network with platforms to exchange information, knowledge management works easier in online networks. So, it a knowledge management tool which creates flexible way to communication, reduces cost of exchanging ideas and makes flow of knowledge more effective (Hemsley, & Mason, 2012).

First of all, the term knowledge will be explained to derive from it a definition of knowledge management.Knowledge is management of essence of facts, principles, operational procedures and information that person has obtained at all times(Blanchard, & Thacker, 2013). Knowledge is organic because it changes continuously and it is transferred through human interaction (Nonaka, 1994). Knowledge management is a process of developing people in organization to be able to improve their work efficiency by using knowledge which leads to learning in individual level, group level and extends across the organization. Knowledge management level consists of knowledge transformation process (SECI Model), Knowledge Spiral and Knowledge Assets (Nonaka, & Takeuchi, 1995). Personnel in the organization are counted as knowledge worker but their type and extent of knowledge varies according to their assigned jobs (Drucker, 1999).

KM as process is the viewpoint of knowledge management focusing on flow and value of knowledge (Shin, Holden, & Schmidt,2001) because knowledge, both implied knowledge (Know-what) and practical knowledge (Know-how) (Hemsley, & Mason, 2012).In this viewpoint, knowledge management is the use of expertise in job and focus in flow and value of knowledge (Shin, Holden, & Schmidt, 2001).Social media is very important to knowledge management because it is used

to observe both within and outside organization. It makeslearning process and application of expertise is not limited within the organization as well as creating two-way understanding by creating communities of practitioners in online environment (Hemetsberger, &Reinhardt 2004; Herrema, 2011). In this century, knowledge management plays a big role for academics and practitioners who use social media as tools for knowledge management.

Expertise is a combination of tacit knowledge and practical intelligence that peoplecrystallizes their intelligence (Cianciolo, Mathew, Sternberg, & Wagner, 2006).Guskey (2000) stated that expertise development is ongoing reflection and systemic process contributing to the development of professional features. This equation can be written in the form Expertise = Reflection X Ongoing Process, similar to the Jennex's Pyramid Model which was developedbased on the knowledge pyramid of Ackoff (1989).Jennex (2009)'s Pyramid Model is a knowledge management model creating knowledge for learning organizations to make them conducive to learning by using social media to distribute knowledge across the organization. When the organization gains enough knowledge for transforming into their own expertise, wisdom or expertise in the knowledge pyramid will interpretattained knowledge to establish organization's expertise (knowledge asset). It is called reflection and knowledge transformation process and ongoing process is knowledge spiral of Nonaka, & Takeuchi (1995).

In addition, social media allows people to share information and knowledge, and build solid relationship among knowledge workers who have mutual interests, similar to the theory of "The strength of weak ties"(Granovetter, 1973). Networked Communities of Professionals is a Community of Practitioner (CoP) applying segmentation technique of Dyad, Sub Group and Plenary Group based on Wasserman, &Faust (1994) and Trentin (2010)'s Network Learning Models. The communication mode is designed with an emphasis on knowledge workers as the center to develop their reflection, interaction with peers and co-produce in ongoing

process. It is also an intellectual convergence leverage user's knowledge and skills to become expertise(Harasim, 1990; Bruffee, 1999; Daradoumis&Marqueès, 2000). It is clear that social media has been widely applied to all communities. In educational institutions, social media has been used as online learning materials to promote participation in social networks and build good relationship between users in online environment. Speed of communication has great influence on user's learning. So, social media has been used as a tool to reach out to users more quickly.In fact, social media changes the way of communication in organizationand it costs less compared to traditional methods.It also allows the organization to build community networks for immediate feedback or assistance.

Conceptual Framework

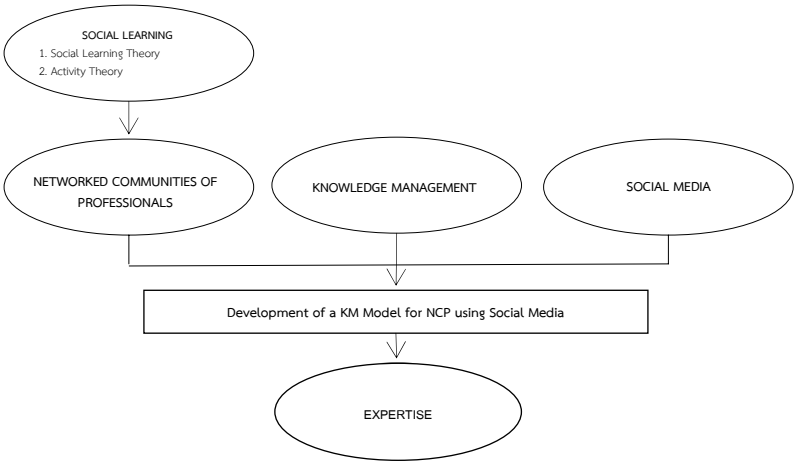

Figure 1 Conceptual Framework

Research Objective

1. To investigate civil officers' social media behavior.
2. To constructing KM Model for networked communities of professionals using social media to enhance professional expertise competency of civil officer.

Research Methodology

This research was divided into 2 phases:

Phase 1 Social Media BehaviorSurvey: This phase was to surveysocial media behavior of civil officersconsists4 group: knowledge type (K1, K2) and operation type (O2, O3) population is 317,601 personcategorized by National Government Organization Act, B.E. 2551, budget fiscal year 2014 (OCSC, 2016). Sample group of 404 persons (Krejcie& Morgan, 1970) were selected by multi-stage sampling; (1) Purposive sampling, selected target sampling, civil officer in knowledge and operation type because this group is thelargestgroup of civil officers and facing bottlenecks problem, and need to develop expertise competency to proficiency level (2) Cluster sampling, to separate proficiency level 4 subgroup, 101 person each subgroup (3) Simple sampling, to pick up 28 of 56 government agency (4) Stratified random sampling, to clustering sample size is 14-15 person in 28 selected government agency, and (5) Convenience sampling, sent questionnaire selected government agency pass through Public Participation Officeand Center of Public Service, The Prime Minister's Office, to collected data.

Phase 2 Constructing knowledge management model for networked communities of professionalsusing social media enhanced expertise competency of civil officers: In phase 2, constructing model by analyzed and synthesized theory and related research, accuracy and scope of models was validated by 5 experts who were selected based onpurposivesampling.

Instrument Development

The main instruments of this study were Phase 1: Questionnaire on social media behaviorfor targeting civil officers or equivalentadapted from ETDA (Public Organization) (2013) and National Statistical Office (2013) was used. This questionnaire consisted of 7 checklist questions, 3 multiple response questions, and 1 ordinal question (Weight ordinal scale: 3 places, 1stplace =3 points, 2ndplace = 2 points, and 3rdplace = 1 points). Content validity using index of item-objective congruence (IOC) of this questionnaire was 0.814. Phase 2:Open end questionnaire on the models, consists of 7 topics and open end questions proven by the advisor and co-advisors before collect data.

Data Collection

The questionnaires were distributed byPhase 1 sending questionnaires to sample group of civil officers via mail. It took 1 month for data collection and 333 (82.42%) questionnaires were returned. Researcher keep participants' information confidentially, try to guarantee that government agency cannot identify participants from their information and protect their identities. Phase 2 Sending questionnaires to 5 experts in the field of knowledge management, learning theory, instructional design and executive-level civil officers via mail.

Data Analysis

Phase 1 Using descriptive statistics including frequency, and percentage were applied for data analysis. Phase 2 Using index of item-objective congruence (IOC) for analyzed this questionnaire and conclude expert's opinion and advice to develop the model.

Results

Phase 1 Survey of civil officers' opinions on Social Media Behavior

Demographicconsist of**sex:** female (73%) andmale (27%),**age:**30-39years old (31%), 50-60years oldand (29%) 40-49years old (25%), **marital status:**single (53%), married (43%) andother (4%), **education:**undergraduate (48%),graduate (30%) and diploma (10%), **position:**Professional Level (29%),Experienced Level (28%) andPractitioner Level (26%), **year of service:** more than25years (26%), 1-5years (21%) and 6-10years (21%).

Result of Social Media Behavior survey revealed that

(1) Time: Length of social media experiencesmore than 4 years (54.1%),less than 1 year (13.8%) and 2-3 years (12.0%)**Frequency of social media visit per day** less than 10 times per day (43.8%), 11-20 times per day (38.7%) and more than 30 times per day (9.9%)**Average time spent on social media**30 minutes -1 hour (32.1%), less than 30 minutes (25.8%) and 1-2 hours (17.4%)**Period of the most time spent on social media** 8.01p.m.-0.00 a.m. (28.2%) 4.01 p.m.-8.00 p.m. (27.9%) and 12.01 p.m.-4.00 p.m. (22.5%).

(2) Place & Device: Placehome (53.5%),workplace (27.9%) and internet cafe (9.3%)**Device**smart phone (37.6%),desktop PC (36.9%) and laptop (15.0%) **Type of social media**Line (719 points) Facebook (673 points) andYoutube (229 points) accordingly

(3) Reason& Usage: Frequency of writing on social media 1-2 times per month (33.6%),never (31.5%) and 3-4 times per month(13.5%) **Type of information**Alphabet (61.3%), Animation (11.7%) and Audio (11.4%) **Social media Activities** Chat (23.2%), Trackingnews and information (21.0%) and Coordinatingwork and transmitting work related data (18.6%)**Reason of using social media** contains new and modern knowledge (19.1%),Interested in issues in social media content (16.7%) and can take advantage from social media for work (14.7%)

Table 1 Civil officers' opinions on Social Media Behavior

Question	Frequency	Percentage	Question	Frequency	Percentage
Length of social media experiences			**Frequency of social media visit per day**		
More than 4 years	180	54.1	Less than 10 times / day	146	43.8
Less than 1 years	46	13.8	11-20 times / day	129	38.7
2-3 years	40	12.0	More than 30 times / day	33	9.9
1-2 years	34	10.2	21-30 times / day	25	7.5
3-4 years	33	9.9			
Average time spent on social media			**Period of the most time spent on social media**		
30 minutes – 1 hour	107	32.1	08.01 p.m. – 00.00 a.m.	94	28.2
Less than 30 minutes	86	25.8	04.01 p.m. – 08.00 p.m.	93	27.9
1-2 hours	58	17.4	12.01 p.m. – 04.00 p.m.	75	22.5
2-3 hours	46	13.8	08.01 a.m. – 12.00 p.m.	63	18.9
More than 3 hours	36	10.8	00.01 a.m. – 08.00 a.m.	8	2.4
Devices			**Place of use**		
Smart phone	243	37.6	Home	178	53.5
Desktop PC	239	36.9	Workplace	93	27.9
Laptop	97	15.0	Internet cafe	31	9.3
Tablet PC	62	9.6	Other places	19	5.7
Other	6	0.9	On the way	12	3.6
Frequency of writing on social media			**Type of information**		
1-2 times / month	112	33.6	Alphabets	204	61.3
Never	105	31.5	Animation	39	11.7
3-4 times / month	45	13.5	Audio	38	11.4
5-6 times / month	37	11.1	Pictures	32	9.6
7-8 times / month	23	6.9	Document files	19	5.7
More than8times / month	11	3.3	Other	1	0.3
Chat	218	23.2	Containing new / modern knowledge	206	19.1
Tracking news and information	197	21.0	Interested in issues in social media content	180	16.7

Table 1 (Continue)

Question	Frequency	Percentage	Question	Frequency	Percentage
Coordinating work and transmitting work related data	175	18.6	Be advantage for work	158	14.7
Upload and share pictures / clips	100	10.6	Keep as knowledge storage	141	13.1
Show appreciation and share experiences	99	10.5	Build network	114	10.6
Store personal data and knowledge	95	10.1	Develop expertise	110	10.2
Reveal identity	55	5.9	Review the past experience	84	7.8
Other	1	0.1	Use as comment channel	80	7.4
			Other	3	0.3

Figure 2 shown that civil officers choose line in the first place, Facebook in the second place, and Youtube in the third place.

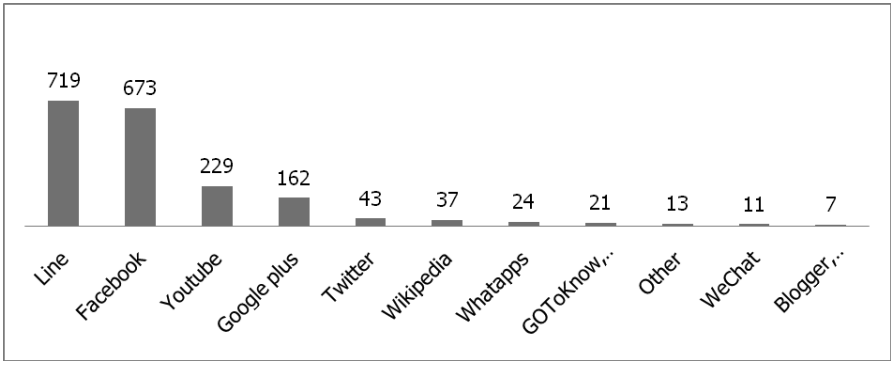

Figure 2 the order of social media used by civil officers

Summary of survey results, found that most of the samples have experiences of using social media, and using social media about 30 minutes to 1 hour per day, and using social media after working.Majority using social media at home, and using social media via smartphone, and using Line and Facebook primarily. Most of the samples posting in social media less, and using alphabet to communicate with others, using social media to chat and track information. In the last, reasons to using social media are contain new news and knowledge, and interesting issues, and using social media to work. Thus, researcher use this result to design activities to encourage participants' motivation and using group process to promote members' participation, researcher grab and using facebook as communication tool and learning space, it really can be a positive experience for participants.

Phase 2 The result of creating knowledge management modelsfor networked communities of professionals usingsocial media toenhanced expertise of civil officers.

Table 2 shown index of item-objective congruence (IOC) of this questionnaire was 0.875, and researcher gathering expert's opinion to develop the model as follows.

Table 2 Result of expert's opinion for constructing model

Module	Average expert's IOC score	Addition expert's opinion	Model Improvement
1. Orientation	1.00	- Considered participants' prior know ledge before entering program.	- Researcher choosing participants by purposive and requireproficiency level in level 2, and clarify orientation objective to lecturer.
2. Workshop	0.60	- Appropriate time to practice social media skill and appropriate time to conduct group dynamic activities for participants, and identify activities of group dynamic to enhance relationship for participants.	- Select necessary social media skill activities and insert group dynamic activities based on appropriate occasions and select brainstorming, words card, and role play for building relationships with participants

Table 2 (Continue)

Module	Average expert's IOC score	Addition expert's opinion	Model Improvement
3. KM Manually	0.80	- Instructor need feedback and two way communication to support participants to exchange and transfer knowledge appropriately.	- Setting instructor's role to facilitator and curator to support scaffolding and answer question when participants need help.
4. KM One-to-Many	0.80	- Clarify unit of message for observed participants' behavior clearly.	- Addition instruction message and unit of message for observed.
5.KM Dyad	1.00	-	-
6. KM Group	1.00	- The number of participants' in each group should be appropriate enough to create interaction among the participants. - Take into account the bad modelling that will be a role model for other participants.	- Researcher design mode of communication in KM group to amplifier individuals' practical knowledge and tacit knowledge to others. - Researcher motivated good modelling by appreciation and exemplify.
7. KM Evaluation	1.00	- Expertise competency appraisal must reflect the results of development activities.	- Researcher using self-assessment and criteria of reflective thinking to measure individuals' expertise, and using observation criteria for to measure participation and outcomes of collaborative learning

Model design concept

First, researcher interpret outcome (dependent variable) in this research are competency and expertise,individual competency characterized by knowledge, skill, and attitude, and competency look like visible and hidden thread. Moreover, expertise competency is a combination of tacit knowledge and practical intelligence that people crystallizes their intelligence, and being of expertise is ability to processing information, and in-depth knowledge to manipulate knowledge, and manage critical situation. In this research, researcher define operation definition of expertise is

knowledge acquisition and knowledge inquiry continually, using reflective thinking, through writing standard operating procedure and transfer knowledge between each other. Researcher classified expertise competency as follows:

Expertise	Tacit Knowledge	+ Practical Intelligence	Crystalized Intelligence
Being of expertise	Ability to processing information	+ In-depth knowledge and manipulate knowledge	Critical situation
Operational definition	Knowledge acquisition	and knowledgeinquiry continually	Using reflective thinking through standard operating procedure and transfer knowledge between each other.
Competency	Knowledge	Skill	
	Attitude		

Designing the model, researcher using 3 concept as follow: (1) Pragmatism by Dewey (1938) (2) Instructional design by Dick, & Carey (1996) and (3) Andragogy by Knowles (1984) are background theoretical of research conceptual framework, and researcher interpret theory as follow conceptual framework to practical or applying framework, as model design concept in this research.

Pragmatism, philosophy of Dewey (1938) said that learning by doing, it will making participants to adjust procedure suitable the problem or facing situation, and review their experiences for experiment or use instrument to solving problem and construct their cognition.

Designing instructional design by Dick, & Carey (1996) first, researcher identified purpose with needs analysis and conducting instructional analysis sequentially, to making understand target participants' behavior for create learning outcome as learning objectives consistent with the goals of instructional and set pedagogy according to the related theory, by interpret learning theory into effective practical. In this research, researcher develop instructional material and content with SOP, workflow, concept mapping and consequence matrix, to create worksheet,

and select instructional content with writing SOP and KM.

Designing andragogy by Knowles (1984), researcher create (1) Orientation module to set mindset and modified participant's attitude by revise andadjust participant's prior knowledge, especially making participants to understand method of writing standard operating procedure and workflow. Researcher divides development activities into 2 parts, traditional activities and social media activities, therefore group process enhance dynamic in group of participants initially, participants formed group on social media. (2) Workshop is practical activities, practice social media skills and practice participants to interact with each other, furthermore, workshop support participants' learning because participants have experiences on social media in not equal.

The researcher took information from the survey and open-end questionnaire to develop the models. The components and procedures of knowledge management models were constructed based on theories and results of phase 1 and 2 as follows:

(1) Componentsincluded personnel, processes, technologies, networks, and professional community culture (Marquardt, 1999; Probst, Raub, &Romhardt, 2000; Kucza, 2001; Turban, & Aronson, 2001):

Personnel, role of personnel in knowledge management to enhance and support activities include participants' role, Instructor role.

Processes, KM pattern, procedure, or activities, related participants learning, improvement, knowledge flow to supportedand effective participants routine workinclude KM process, social learning process, communities of professionals process, reflective process, and intelligence convergence process.

Technologies, tools for develop knowledge structure in organization into useful knowledge for personnel include communication technology, and content management technology.

Networks, coordination mode of individual, group, and organization that combine small networks to interact and exchange information with each other. Networks related to knowledge management include peer, collaborative, and knowledge worker.

Professional community culture, knowledge culture in motivation, trust and bonding, to create co-production and learning experiences based on knowledge exchange and transfer between participants.

(2) The procedure consisted of 7 modules including Orientation, Workshop, KM Manually, KM One-to-Many, KM Dyad, KM Group and KM Evaluation (Jennex, 2009;Trentin, 2010).Modules 1-2 wereface to face activities and modules 3-7 were social media activities. The details were as follows.

Table 3 Result of models procedure

Module	Objective	Learning outcomes	Communication Mode/ Technologies commonly used
1. Orientation	It was preparation by educating participantsabout KM and how to write Standard Operating Procedure.	Understand knowledge management andSOP.	-
2. Workshop	It was a practice to use social media technology, introduce communication strategies and organize group activities to build familiarity.	Social media skills and familiarity.	-Blog in Facebook call “Page” -Forum in Facebook call “Feed” -Chatroom in Facebook call “Messenger”
3. KM Manually	It was a practice to find and transform knowledge into their own process with reflected tacit knowledge to explicit knowledge.	Seeking a relevant piece of information and transforming-tacit knowledge into practical Intelligence(Idea Generating).	-Use one-to-one communication with the instructor in chatroom only. e.g. Messenger
4. KM One-to-Many	It was a practice to express opinions and listen to other people's opinions to solve their own problems.	Linking idea to relevant piece of information and understanding how to achieve SOP (Idea Linking).	Use many-to-many interactions on blogs only.e.g. Page and Feed.

Table 3 (Continue)

Module	Objective	Learning outcomes	Communication Mode/ Technologies commonly used
5.KM Dyad	It was a practice to exchange and transfer knowledge with working partner.	Understand their partner, either directly in regards to SOP and indirectly in tacit knowledge to re-create their own model of operating manual (Idea Structuring).	Use one-on-one communication in their chats only.e.g. Messenger
6. KM Group	To build expertise and produce outcomes from collaborative work and social learning within the group.	Understand others in the group and understand social conditions.	Use many-to-many interactions on group's blogs only. (4 persons/group)e.g. Page
7. KM Evaluation	To evaluate collaborative work to ensure that it contains character of new working and evaluate expertise.	Summative evaluation.	Use many-to-many interactions on blogs only.e.g. Page

Researcher identified measurement and evaluation both of formative and summative assessment, using measured SOP (measured reflective thinking and value of Co-production), self-assessment, and measured social media behavior of participants.

Designing evaluation, researcher design evaluation of model divided 3 groups as (1) individual evaluation: self-assessment, and reflective thinking through SOP. (2) Group evaluation: participant on social media, and co-production. (3) Organization evaluation: value of co-production, and measured each module differently.The researcher set measurements and statistics used in the model testing, as detailed in Table 4.

Table 4 The measurement and statistics used in the model testing

Instrumental	Measurement and Module	Statistic	Measured Variable
Self-assessment	Pretest and Posttest inModule 1, 7	t-test	Self-Realized
Writing SOP/Criteria of reflective thinking	Repeat 4 Times and add more tasks every times in Module 1, 3, 4, 5	ANOVA-Repeated	Reflection to Expertise*
Observation criteria for social media participation	Repeat 3 Times in Module 4, 5, 6	Formulation adapted from-Henri (1992) and Ho (2004) P = 3A+1.5B+0.5C **	Measure from interaction to participation
Observation criteria for outcomes of collaborative learning	Repeat 3 Times in Module 6, 7	ANOVA-Repeated	Knowledge assets in simulated enterprise (8, 16 persons)

*Expertise = Reflection X Ongoing Process

**Participation in social media = (A) Number of messages published in networks, (B) Number of messages related to learning together or mutual decision in networks, (C) Total number of messages.

Designing distribute channel, as research problem are lack of interact, lack of communication in organization, and lack of knowledge transfer and collaborative. Thus researcher select social media especially facebook as delivery and communication instrument, because facebook are learning space, storage area, creating content area, collaborative area, and sharing knowledge. Furthermore, facebook as online and offline bridge, offer an opportunity to maintain relationships, building networking, and knowledge distribute from inside group to outside group as follow knowledge amplified concept of KM, effective to constantly reflect on social networking

Discussion

Result of Social media behaviorsurvey of civil officers had to be completed before creating models. Apart from searching for social media behavior and necessary requirements, the researcher also explored in depth about innovation

adoption in terms of (1) factors of innovation characteristics and (2) factors of users(Rogers, 1995) because social media was considered as innovation. In fact, in the final stage of the adoption process, the knowledge workersare the decision makers and may not adopt the innovation (King, &Boyatt, 2015). Especially, in blended learning, users must be cautious since the first step. In other words, knowledge workers have to raise awareness oftheir benefits from the innovation (Step1 Awareness/Exploration). Then, they are able to make decision to adopt and apply innovation (Step 2 Adoption/Early implementation). This makes knowledge workers gain work experience and are mature after applying the innovation (Step 3 Mature Implementation/Growth) (Porter, & Graham, 2016).

Moreover, demography and culture is something that should be careful. Kozinets (2015: 25) mentioned that social media research has to study demographic and relative population to obtain socio-psychological information of knowledge workers' behaviors in social network andexperimental approaches. The obtained information is an indication of relationship in individual level and group level. It also gives more understandingabout process of engagement, culture and attention before researchers analyzeinformation and gather ideas, meanings, social practices, relationships, language, and symbol systems of social network group. Borgatti, Everett & Johnson (2013: 9) stated that researchers should match the same characteristics of knowledge workers (Homophily) which tends to tie Strength of the couple. Therefore, dyad or node groupingmaking persons in social network interact positively requires similar demographic characteristics.

The knowledge management model with social media requires blended learning, both classrooms learning and online learning becausecreating experiences before actual using social media is important to sharing their experiences in social media.Knowledge workers who work on social media obtain social cognition from experiences shared by others, create their own knowledgeandalso contributes to their participation in their performance reflection (Lee & Ma, 2012). Furthermore,

creating open learning environment in closed organization encourages workers to create new knowledge and share their tacit knowledge in the group. Social media is a knowledge management tool for sharing and learning within team (Ramalingam, 2006; Rao, 2011).

Hagen & Park (2016) said that orientation following by main hypothesis of andragogy, that connecting participants' experiences like neural and construct participants' remembrance and understanding basically before entering activities. In second module, Lee & Ma (2012) andJonas-Simpson, Mitchell, and Cross (2015) agree that workshop create learning space and possibility tolearn of participants with designing workshop for several stations and sub-stations, and participant from members is necessary in workshop. Activities in each station should be openness for participants to ask their question or express their opinions or creativity ideas.In KM Manually module, Qiu, Chui, &Helander (2008) found that individuals would use exploration, inquiry and knowledge management to build a cognitive schema that would result in the integration of natural knowledge systems into design and create product.Ricoy&Feliz (2016) state that social media learning willincrease interact and dynamic of group, KM One-to-Many, KM Dyad, KM Group module, it can be used to reflect participants' opinion and allow participants can interact more rapidly, and social media is also a communication tool that motivates members to participate in the group as well. In addition, meta-analysis research byAbdi & Simbar (2013) and Sriranganathan et al. (2012) agree that peer play an important role in the develop of psychosocial aspects of adult learning, peer to peer learning is a strategy to enhance participants' knowledge.Although, ChokchaiPuttan (2012) said that quality of participants' opinion and quality of contentsin social networking tends to favor expert identification and ranking of expertise.Finally, empirical research byWang, Noe, & Wang (2014) studying and evaluating the exchange and transfer of knowledge in KMS found that exchange and transfer of knowledge resulted from interactions between participants using various methods of measur-

ing and evaluating cognitive schema have been used to establish the validity of research.

However, this model requires social learning process because social media is a social network consisting of knowledge workers with various experiences and they can learn from observing, imitating, action and reflective thinking. It is an important part of building social cognitive knowledge focusing on transferring required knowledge and skills for self-control (Macionis& Gerber, 2011). Moreover, Trentin (2010: 61) stated that social learning process plays an important part in expertise development because it is a process of sharing experiences and tacit knowledge. Personnel can acquire tacit knowledge directly from others through living together in the same environment and observing each other (Billingham, 2007; Sloep&Berlanga, 2011; Bell, 2011). Nonetheless, a point that must be cautious in social learning is imitation of bad behavior within a group (Inhibition Modeling). Disinhibition Modeling should be applied to inhibit that behavior (Fischer & Gochros, 1975; Bogg, & Finn, 2010). Within that group, there are multi-functional knowledge workers who support and assist other users in the online network (Moore, & Rugullies, 2005; Reinhardt, Schmidt, Sloep, &Drachsler, 2011).

Fuchs (2014) pointed out that communication in social media is an important part of building relationships within a group. It drives social into a more cohesive community as well as Jonassen, et al. (2003) who determined that network learning creates knowledge from conversations, recognizing each other, learning together and reflection between each other. Interpersonal communication also enables knowledge workers to adopt more innovation (Dearing, Maibach, & Buller, 2006). Thus, the objective of interpersonal communication mechanism and applying this mechanism for participation in society is for social benefits (Swales, 2011)

Richardson &Mancabelli (2011) mentioned that learning network and digital tools are crucial to expertise development with ongoing process including

data access, data collection knowledge building. Instructors can employ blog, posting, group discussion and messaging to communicate with knowledge workers to make them deeply understand their content of works. Moreover, the users have access to digital resources, content adjustment and content sharing easily (Debowski, 2006). Knowledge exchange and transfer is the core competency of organization. Because it is a nature of organization that encourage experienced workers to exchange their experiences in groups to solve problems and share lessons learned in collaboration.

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