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The Effectiveness of Social Media as Knowledge Management Sharing Tool in Government Agency: A Case Study

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Abstract
This paper reviews the effectiveness of social media as knowledge management sharing tool in a government agency, which is Department of Chemistry Malaysia. As technology evolves, the tools to share knowledge have diversified. From just using the usual way of sharing information like discussion, distribution of documents via postage, sharing information via electronic media, social network or media is now trending as an information sharing tool. The research reviews the situation regarding the effectiveness of using social media as a knowledge-sharing tool in a government organization which is filled with red tapes, rules and regulations. Also included a brief conclusion and variety sources of references cited for better understanding and clear thoughtful.
Keywords: Knowledge Management, Knowledge, Social Media

INTRODUCTION
Knowledge management is the process of gathering raw, unprocessed data, sharing the processed information and using the information effectively. It is a mixture of people, technology and processes. According to Oxford Dictionary, knowledge management is handling of information and resources efficiently within an organization. However, Alan Frost (2010, 2012) explains that knowledge management is the systematic management of an organization's knowledge assets for the purpose of creating value and meeting tactical and strategic requirements.

To ensure that knowledge management is implemented throughout the organization, the organization must plan the activities. Knowledge management activities in an organization can be anything that is able to manage knowledge. It could be in the form of system used, programs planned, a collaboration efforts and others. To share the knowledge, tools must be used whether it is ICT based, or non ICT based. The purpose of this case study is to identify an organization and the effectiveness of using ICT based tools to share knowledge in the organization of choice.

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The organization chosen is The Department of Chemistry Malaysia. This department is Malaysia's leading provider in chemical and forensic services. They provide comprehensive and effective analytical, consultative and investigative scientific service primarily to government agencies and private sectors. Therefore, the type of information generated by this department is classified and cater to specific organization.

As technology evolves, the tools to share knowledge have diversified. The world jumps from one knowledge management sharing tool to another. Further investigation reveals that Facebook is the number one social network of choice. It appeals to all ages, gender and cut across country boundaries. Therefore, it is essential to know whether social media can be used effectively to share information in a government agency and whether types of information shared reflects the organization itself.

Individual, friends, families, organizations, countries share knowledge every day. Knowledge is a valuable intangible asset that enables organizations to create and sustain its competitive advantages. Usually, knowledge-sharing activities are supported by knowledge management systems. However, technology is just a factor among many that affect knowledge sharing in organizations. It is a challenge to share information in knowledge management because there seem to be resistance to share it between employees within the organization.

Why do we need to share knowledge? What is the benefit that we can gain from this activity? As quoted by Benjamin Franklin, "An investment in knowledge pays the best interest". It is important to share knowledge so that we can progress to a better future. With knowledge, we can build an empire or even destroy a country. Organizations understand that by managing knowledge effectively, they can have more advantages against competitors and stay on top of the game.

According to Nonaka (2007), knowledge sharing is the process of exchanging tacit knowledge to explicit knowledge to come out with new knowledge. Tacit knowledge is knowledge that is within an individual, acquired by experience and skills. It is hard to decode and transfer because it resides within the individual itself. Explicit knowledge is knowledge that has been documented in forms like manuals, reports and minutes of meetings and can be easily shared with others in the organization. Knowledge is abundance in the organization, but its existence does not mean it is used for the right reason or even being acknowledged of its importance. Knowledge can be shared or transferred using knowledge management tools.

BACKGROUND OF THE ORGANIZATION CHOSEN FOR THE STUDY
The Department of Chemistry, Malaysia was established in 1909 and has evolved over the past 105 years to achieve recognition as a leader in analytical chemistry and forensic science. As of 2017, Department of Chemistry Malaysia has a network of 13 branch laboratories across Malaysia with its Headquarters in Petaling Jaya, Selangor.

Department of Chemistry Malaysia is recognized as Malaysia's leading provider in chemical and forensic services. They provide comprehensive and effective analytical, consultative and investigative scientific service primarily to government agencies such as Ministry of Health, Ministry of Domestic Trade, Co-operatives and Consumerism, the Royal Malaysia Police and the Department of Environment, and private sectors. Their role in Malaysian community is a vital one, assisting various government agencies in enforcement and monitoring of legislation to ensure public safety, protection of the environment and well-being of the nation. Department of Chemistry Malaysia is committed to make contribution to society through the following core services, as shown in Figure 1:

Figure 1: Department of Chemistry Malaysia 's Organizational Chart

a. **Forensic Science**

This division provides Malaysian authorities with defensible, high quality forensic science service and expertise for the purpose of upholding justice through analysis of trace evidence, forensic toxicology, forensic DNA and drugs, and independent expert witness in the courtroom.

b. **Environment Health**

This division offers analytical and consultancy services to safeguard the health and safety of the community and protect the environment. This is delivered via outstanding environmental chemistry services focused on providing legally defensible information to ensure sustainable development.

c. **Industry and Trade Tariff Classification**

This division performs scientific analysis for the purpose of collecting government revenue in trade tariff classification, monitoring government tender and supply samples against

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contract specifications, as well as maintaining the safety of workers through implementation of Occupational Safety and Health (OSH) programmes.

d. Research and Quality Assurance
This division engages in method development to meet customer needs and continuously improving the department's quality and technical management systems.

e. Development and Information Technology
This division manages the upgrading of infrastructure of instrumentation and maintaining the laboratory information management system.

f. Service and Management
This division provides supports to the organization core function in areas of finance, human resource, facility management, asset management, administrative matters and security management.

g. Department of Chemistry Malaysia Training Centre (PLKM)
This division arranges training programmes to enhance staff competency for human capital development.

The information generated by Department of Chemistry Malaysia is in the form of analytical chemistry and forensic science report is in accordance with client's need. However, it is highly classified and not easily shared because of rules, regulations and acts that binds it. There is an information system created to share specific information like Sample Registration System (SPIM) used by the Forensics Division to manage sample registration for analysis. However, this system can only be accesses by certain client like the Royal Malaysian Police, and cannot be shared to general public for safety reasons. With its desire to be known to the public, certain knowledge management activities must be planned carefully in order to relay the right information to the public but at the same time the highly classified information must be secured and shared on a need to know basis.

Based on the above scenario and problem, the researcher could provide a clearer picture as regards to the problem faced in Department of Chemistry Malaysia. As the department is gearing to achieve its vision to be a leader in analytical chemistry and forensic science services for societal wellbeing, the right knowledge sharing tools must be chosen. There is a real need to provide them with the required information so that effort, time and costs are not wasted. Moreover, taking into account that the research's findings are an essential part of the decision making process, this research has become a vital necessity to aid the top management in decision making.

BACKGROUND OF THE SOCIAL MEDIA CHOSEN FOR THE STUDY

As stated by Lin (2007), Van den Hooft *et al* (2012) and Ardichvili *et al* (2003), knowledge sharing is an important process of social interaction in organizations and it occurs at organizational, group or individual level. Knowledge sharing is designed to transform individual knowledge into organizational knowledge (Foss *et al* (2010)). Knowledge sharing involves using personal and collective knowledge and turning it into new knowledge by using media platforms. Within this study, social media platforms refer to the usage of technological platforms by the organization such as Facebook, Whatsapp or Intsagram to facilitate communication within the organization, collaboration efforts and knowledge sharing. The organization that has been chosen is a government agency which is Department of Chemistry Malaysia.

There are various definitions of social media. According to Merriam-Webster, social media are forms of electronic communication like usage of websites for social networking and microblogging, which users create online communities to share information, messages (personal or general), ideas, videos, audios and other format of information.

Recent studies by Simon Kemp (2016) have measured the social media growth. It is found out that social media usage has grown 21% year-on year, with 482 million new user signing up over the course of 2016. This growth was dominated by five countries which are China (134 million users), India (+55 million users), Indonesia (+27 million users), the USA (+22 million users), and Brazil (+19 million users).

In January 2017, in terms of social media penetration, Asian countries dominate 4 out of 5 top position rankings as shown in in Figure 1[1]. Africa, Central and South Africa record the lowest level of social media penetration. The social penetration rate in Malaysia is 71%, which is above the global rate of 37%. This shows that social media is highly trending in Malaysia.

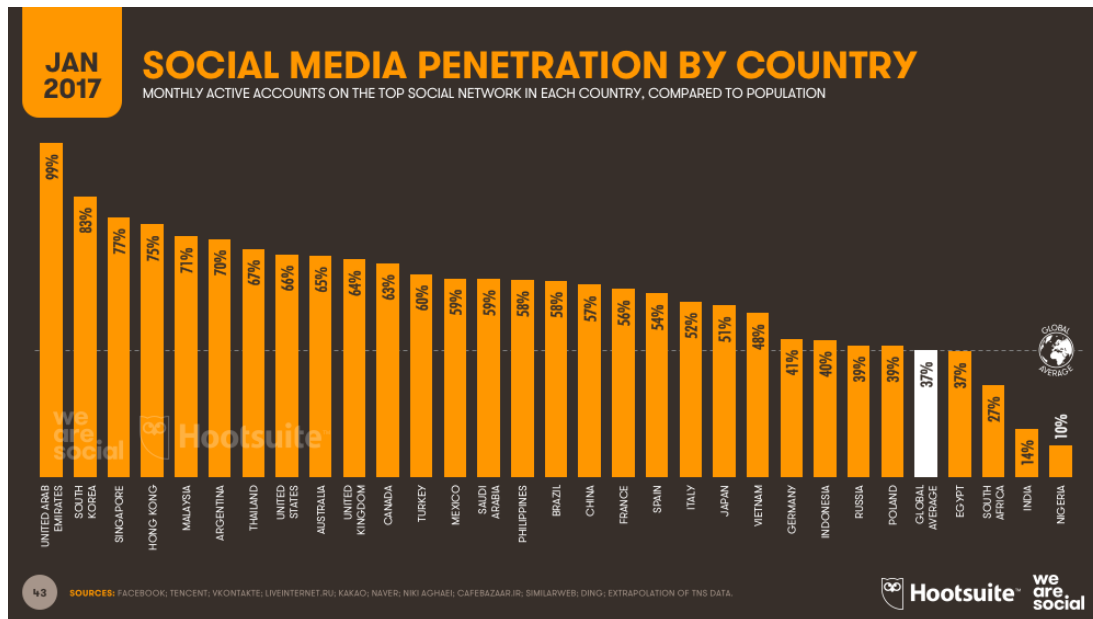[1] Simon Kemp (2016), Digital in 2017: Global Overview

Figure 1: Social Media Penetration by Country

In January 2017, there are several social media platforms that are more popularly used around the world which are Facebook, Youtube, Whatsapp, FB messenger, Instagram, WeChat, Google+, Line, Twitter, Sino Weibo, Linkedin and Skype. As shown in Figure 2[2], Facebook is the most active social network with active usage of 72%, compared to Youtube (69%), Whatsapp (64%), FB messenger (47%), Instagram (40%), WeChat (33%), Google+ (29%), Line (25%), Twitter (24%), Sino Weibo (29%), Linkedin (28%) and Skype (17%). It looks like Facebook is the preferred choice for users all around the globe for social networking.

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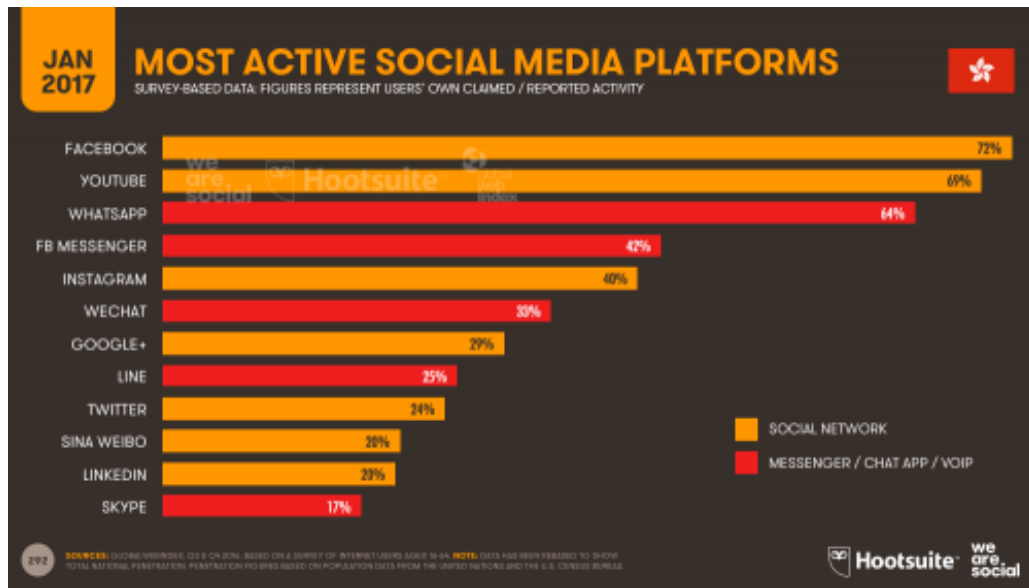[3] Simon Kemp (2016), Digital in 2017: Global Overview

Figure 2: Most Active Social Media Platform

For the purpose of this study, a social media or social networking tool that is chosen would be Facebook. What is Facebook? It is a social networking website that has more than 1 billion active users, and available in more than 30 countries in more than 100 languages. Based on the statistic of most active social media platforms in Figure 2, Facebook tops the list as the most preferred social network. Facebook appeals to the masses because of these factors:

- It can be assessed various ICT devices like desktops, laptops, tablet, computers, smartphones and smart television. As long as you can connect to the Internet and mobile networks, you can access Facebook.

- The account is free and users only need to register and create their profile which includes name, location, education information and others.
- Users are able to conduct activities like adding friends, exchange messages, post status and updates, upload digital photos, share videos, receive notifications when other people update their status, play games and others.

- Users can create or join in groups that have the same or common interest that can be in various categories like work-related, school, hobbies, commerce and others. This eliminates the borders between countries.

PROBLEM STATEMENT

Department of Chemistry Malaysia is not a very well-known department in Malaysia. As stated before, based on their main core function, they provide comprehensive and effective analytical, consultative and investigative scientific service primarily to government agencies such as Ministry of Health, Ministry of Domestic Trade, Co-operatives and Consumerism, the Royal Malaysia Police and the Department of Environment, and private sectors. Even though with

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their tagline "We are a part of you", Department of Chemistry Malaysia is only known to a certain group of people that needed their service.

During the research, it is discovered that Department of Chemistry Malaysia used Social Networking as Knowledge Management tool like Facebook, Twitter, Youtube, Instagram and RSS Feed, to reach out to global community of the same interest with the intention to share their knowledge and encourage discussion. However, the knowledge that is shared makes a difference in whether interest of the people can be initiated. Based on the observation on Facebook, among the information shared are more on activities being conducted like OSH Week, courses on auditing, visitation by higher institution of learning and job promotions. This type of information doesn't attract the public. This matter should be further address if Department of Chemistry Malaysia wishes the public to be interested to know more about them.

FINDINGS

Among the problems found in Department of Chemistry Malaysia are:

a. Unwillingness to share Information

Within any organization, it is important to share the knowledge that the employees have acquired or created. Studies have indicated that there are two types of knowledge sharing which are full knowledge sharing where the knowledge is given freely and partial knowledge sharing where some of the information is protected of withheld. Therefore, is it discovered that Department of Chemistry Malaysia is unwilling to share classified information that is related to their core function which is chemical analytical and forensic science. This is because there are rules, regulation and acts that governs that information. However, the type of information that the department is willing to share are activities that have been conducted like Corporate Social Responsibility Programmes, OSH activities, club activities, job promotion announcements, training courses conducted and other general information. To the public, these types of information are not interesting enough and doesn't concern them. In the social media, the public doesn't comment much on the activities, so there is not much interaction between the public and the organization.

b. ICT Network and Infrastructure failure

To enable the knowledge to be shared, organizations must have means to make the knowledge available to others within the organization. However, it is discovered that the existing ICT Infrastructure in Department of Chemistry Malaysia just focuses on the core function of the organization like lab analysis, forensics report system and others. The network is not stable and if it is available, access to social network sites are restricted during office working hour. If the employees used their own mobile devices to access the social network via the organization wireless connection, the access is still limited. This is not an attractive option for the employees within the organization.

c. Lack of Trust by Senior Officers
    The Senior Officers in the organization have little trust on the social media. Since social media is actively used by the younger generation for communication, relay information, acquire information and promoting their wares, the older generation feels there is no need to use social media as a knowledge sharing tool. Their perception is the social media is too complicated to use and you are obligated to respond to every post there is. Apart from that, the information shared in the social media is not trustworthy and accurate.

DISCUSSION

1. Unwillingness to share Information
    Since there are two types of knowledge sharing which are full knowledge sharing and partial knowledge sharing, Department of Chemistry Malaysia must identify which knowledge that they have is suited to what category. There must be an internal policy implemented so that information linked to partial knowledge sharing gets a clearance form top management before it is shared.

    Since all information that is shared online stays there forever, top management of Department of Chemistry Malaysia must dictate which general information can be shared. So far, the information that is shared in Facebook is vetted by the top management. However, they must also decide on how the information should be presented to make it more interesting.

2. ICT Network and Infrastructure failure
    In order to enhance the available ICT infrastructure in the organization, the top management must make available the financial means to acquire it. ICT software and hardware are not cheap. The organization also must enable employees to have reliable, fast and full access to the network so that they can use social media to share knowledge. However, rules and regulations must also be implemented so that the employees balance out work and social media usage.

3. Lack of Trust by Senior Officers
    Since the senior officers in the organization have little trust on the social media, this problem must be rectified. The organization can conduct classes or briefing session to the senior officers so that they are more confident in using the media social network. The organization also must relay any dictation or regulations by the Government of Malaysia regarding the content of what can be shared on social media, so that the content is trustworthy. Code of conduct also must be informed to the officers so that they know how to handle information that they came across on social media network.

CONCLUSION

Social media can be used as a knowledge management sharing tool. It is free, easily accessible through various devices and can support many types of information format like text, graphic,

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audio, video and live interactions. But there are weaknesses found when social media is used like the availability of ICT infrastructure, unwillingness to share information by the organization itself and lack of trust by senior officer on the social media network.

To rectify this, the organization can dictate which information can be shared and present it more attractively. Apart from that, the organization must upgrade existing ICT infrastructure to enable faster and stable access to ICT network. Usage of the social media during working hours must be governed by internal policy. To increase participation of social media usage in senior officer, the organization can conduct classes or briefing session to help build their trust and confidence.

RECOMMENDATIONS

Department of Chemistry Malaysia can adopt these alternative solutions which are:

a. Upgrade existing ICT infrastructure. By implementing this solution, the employees are able to actively use the social media as knowledge management sharing tool during office hours. Thus, information can be shared more quickly and effortlessly.

b. The organization must sift through the content and choose the ones that attracts other most. They don't have to reveal classified information just how to present it in a more creative and attractive manner. Current information that is being shared just focuses on job promotion, CSR activities, club activities and training programmes which does not appeal to everyone.

IMPLEMENTATION

To implement the suggested solutions, there are factors involving monetary and manpower.

a. To upgrade existing ICT infrastructure would involve financial cost of RM200,000 for purchasing of firewall and software to secure the safety of information and intrusion from outside, to upgrade current bandwidth of internet line so that high speed access is available. The ICT Unit must prepare the procurement document according to procurement financial requirement. The whole procurement process will take about 6 months and the implementation of firewall and upgrading of internet bandwidth will take another 6 months.

b. The Corporate Communication Unit must create the information and submit it to the top management for approval. The time taken would be a day up to seven days depending on the content of the information. The time taken to create the information would involve working overtime and there is some costs involved in terms of over time claims. After that, the information should be uploaded on social media network, which would require two days' work, depending on the complexity of the information format and the knowledge of the employee on the usage of the social media.

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