

A STUDY ON THE CURRENT STATUS OF THE UTILIZATION OF WEB 2.0 TECHNOLOGY AMONG POPULAR THAI WEBSITES

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ABSTRACT

A study on the current status of the utilization of Web 2.0 Technology among the popular websites in Thailand has been carried out. This aims to investigate the spread of Web 2.0 Technology and to determine quantitatively the existing Web 2.0 Technology being used. This project adopted a quantitative method in surveying on a number of Thai popular websites in ten business categories according to <http://truehits.net> website. The ten categories of websites include Business, Education, and others. This paper also considered eight types of technology used among these websites. This includes Blogs, Wikis, Social Networking and a number of other facilities. The research finding provides an overview of the current status of utilization of Web 2.0 Technology in Thailand. The use of Web 2.0 Technology in other countries is also considered with reference to the situation in Thailand. This study aims to encourage and promote Web 2.0 Technology and subsequent study will lead to the next phase of further investigation and recommendations.

Index terms – Web 2.0 technology, Thai websites

1. INTRODUCTION AND BACKGROUND OF RESEARCH

Web 2.0 Technology has been introduced and is beginning to become popular in Thailand. However, Web 2.0 Technology is not a single technology nor it is only used for limited purposes. Rather, it is a collection of technologies and they have been utilized in many areas. Recently, various communities in Thailand are beginning to adopt and increasing the use of Web 2.0 Technology. This includes business, education and professional bodies, however, there has not been any

projects to evaluated or assess the status of the utilization of Web 2.0 Technology in Thailand. This therefore provided the motivation of this study.

The term 'Web 2.0' was officially coined in 2004 by Dale Dougherty, vice-president of O'Reilly Media Inc. during a team discussion on a potential future conference about the Web. The team wanted to capture the feeling that despite the dot-com boom and subsequent bust, the Web was 'more important than ever, with exciting new applications and sites popping up with surprising regularity' [1]. Understanding "the Web" and "Web 2.0" helps to consider the issues associated with each of these technologies. For example, Tim O' Reilly identifies what he considered to be the factors contributed to the success of "Web 1.0" and "Web 2.0". He was concerned that, "Web 2.0 has become widespread that companies and organizations are now pasting it on as marketing buzzword, with no real understanding of what it means" [1]. In order to express the concept of Web 2.0 Technology, he listed and described seven principles as: the Web as a platform, Harnessing Collective Intelligence, Data is the next "Intel inside", End of the software release cycle, Lightweight programming model, Software above the level of single device, and Rich user experience [1]. Moreover, it was noted that companies that had survived the dot-com firestorms of the late 90s have appeared to be stronger and have a number of common characteristics in general. Thus it is important to note that the term was not coined in an attempt to capture the essence of an identifiable group of technologies, but an attempt to capture the developments which are far more amorphous.

Web 2.0 Technology consists of a variety of applications implemented using diverse technologies. In general, the

variety of Web 2.0 Technology applications can be classified as follows [2]:

- 1) Rich Internet Application (RIA), these applications are very much easier to install and easy to use while having the characteristics or features of most desktop applications.
- 2) Collaboration tools, these include asynchronous collaboration tools such as wikis and blogs allowing collective exchange of information among a community.
- 3) User-contribute content databases, these are large-scale environments such as video posting, web site and photo sharing.
- 4) Integrative technologies enabling the web as a platform. There are abundant services and data sources over the Internet.

1.1 Characteristics of Web 2.0 Technology services/applications based on this study

There are a number of web-based services and applications that demonstrate the foundations of the Web 2.0 Technology concept, and they are already being used to a certain extent in the education sector [3]. These services and applications are allowed users to utilize technologies in the form of building blocks based on open standards on the Internet and the web. These include blogs, wikis, multimedia sharing services, podcasting and tagging services. In this part of paper we will introduce and review some of the well-known services with an aim to provide a common ground for comparison and discussion.

Social Networking: a social network is a form of social structure. The actual structures are determined by the users [4] which are made up of individuals (or organizations) called "nodes," which are in turn tied (connected) by one or more specific types of interdependency. The users fill in the details about themselves and the connections they have with other objects or attributes. In addition, social networking can be used to find peers with similar interest. They have been used extensively among the school and college students, and also vocational learners and professionals [5].

Collective Intelligence: refers to any system that attempts to tap the expertise of a group rather than an individual to make decisions. Technologies that contribute to collective intelligence [6] include collaborative publishing and common databases for sharing knowledge.

Peer-to-Peer Networking: is a technique for efficiently sharing files such as music, videos, or text) either over the Internet or within a closed set of users. Unlike the traditional method of storing a file on one machine – which can become a bottleneck if many people try to access it at once, peer-to-peer distributes files across many machines, often those of the users themselves and some systems retrieve files by gathering and assembling pieces of the document from many different machines [6].

Podcasts: are mainly audio recordings usually in MP3 or equivalent formats. This includes, talks, interviews and lectures, which can be played either on a desktop computer or on a wide range of handheld MP3 devices. A podcasts is made by creating an MP3 format audio file uploading the

file to a host server, and then making the world aware of its existence through the use of RSS. They are often distributed through an aggregator, such as iTunes [6]. Another major type of podcast is video recording and this is becoming more common and popular with the increasing bandwidth and at low cost.

Blogs: the term web-log, or blog, was coined by Jorn Barger in 1997 and it refers to a simple webpage consisting of brief paragraphs of opinion, information, personal diary entries, or links, called posts, arranged chronologically with the most recent first, in the style of an online journal [7] [8].

RSS: is a family of Web feed formats which allow users to find out about updates to the content of RSS-enabled websites, blogs or podcasts without actually having to go and visit the site. Instead, information from the website (typically, a new story's title and synopsis, along with the originating website's name) is collected within a feed (which uses the RSS format) and 'piped' to the user in a process known as syndication. [9].

Mash-ups: is a web page or application that combines data or functionality from two or more external sources to create a new service. The term mash-up implies easy, fast integration, frequently using open APIs and data sources to produce results that were not the original reason for producing the raw source data. An example of a mash-up is the use of cartographic data to add location information to real estate data, thereby creating a new and distinct Web service that was not originally provided by either source [9].

Wikis: is a simple web collaborative-authoring (or content management) systems for creating and editing content. It let any one add new articles or creating the content. An example is the Wikipedia [9]. Wikipedia's popular success has meant that the concept of the wiki, as a collaborative tool that facilitates the production of a group work, has already been widely accepted. Wiki pages have an edit button displayed on the screen and the user can click on this to access an easy-to-use online editing tool to change or even delete the contents of the page in question. Simple, hypertext-style linking between pages is used to create a navigable set of pages. However, wikis have some limitations that need to be addressed, before they can be widely deployed [9].

Tagging, tags, folksonomy, and tag clouds: Tags are keywords that are added to a digital object (e.g. a website, picture, bogs or video clip) provide a description of the object, but they are not as part of any formal classification system. Folksonomy refers to users-centred taxonomies of information. It is an ad hoc classification scheme that web users create as they surf on the Internet to categorize the content that they found online [9]. A tag cloud is a visual depiction of a list of content tags used on a website or Blogs with some kind of visualization. Popular website such as Digg (<http://www.digg.com>) use tagging in their websites.

2. RESEARCH METHODOLOGY

The main focus of this study is to carry out an initial investigation on the current status and spread of Web 2.0 Technology in Thailand. This study conducted by surveying a number of websites and to determine the technology they are using. The selected websites were selected among 100

most popular Thai websites according to <http://truehits.net>. The initial investigation was executed during May to June 2009 and the information was collected from the websites online by using averages, percentage, and check lists.

2.1 Selection of 100 Thais' popular websites

This research has selected 100 Thais' popular websites based on the statistics from <http://truehits.net/> which is recognized as realizable website providing ranking of the popular websites and statistics. The reason is why using this website's information to carry out the research, is that this website has shown the information of the frequency of visitors have visited these websites.

2.2 Defining ten categories of websites

The ten categories of website being used in this research defined by <http://truehits.net> are Education, Entertainment, Travelling, Shopping, Organization, Business, News/Media, Banking and Financing, Computer and Health as its shows as websites directory on <http://truehits.net> that easy to grouped and categorised the type of websites.

2.3 Categorizing eight Web 2.0 Technologies

This research has selected the number of characteristics of Web 2.0 Technology which are currently being used in Thailand which are Collective Intelligence, Peer-to-Peer Networking, Social Networking, RSS, Podcasts, Wikis, Blogs, and Mash-ups.

2.4 Limitations of this research.

This research was conducted during May to June 2009 and the 100 popular websites were based on the data at such time. It is expected that the situation may have changed after June 2009. In addition, the popularity of the websites was based on data from <http://truehits.net> which could be different from other websites. In addition, the websites examined in this study are limited only to the members of <http://truehits.net>.

3. RESEARCH RESULT

Information from 100 websites in Thailand has been collected during May to June 2009. The websites defined into ten categories and Web 2.0 Technology currently used in these sites was identified and the results are shown below in listed.

3.1 Considering the types of business websites that are used Web 2.0 Technology

From this research, it is observed that 27.6% of popular websites in Thailand using Web 2.0 Technology in their websites. Hence, the top three types of popular websites are using Web 2.0 Technology extensively are Entertainment websites (4.5%) follow by Education (4.4%), Health and News/ Media at 2.8%. On the other hand, the type of popular websites that used the least Web 2.0 Technology is Business website at 1.8% and Shopping, Traveling, and Banking/Finance at 2.1%. The information is summarized in Table I.

Table I
 An overview of the utilization of Web2.0 Technology by different types of websites

Type of Websites	Using Web 2.0 (%)	Not using Web 2.0 (%)
Education	4.4	6.6
Entertainment	4.5	5.5
Travelling	2.1	7.9
Shopping	2.1	7.9
Organization	2.4	7.6
Computer	2.6	7.4
News/Media	2.8	7.2
Business	1.8	8.2
Health	2.8	7.2
Banking/Finance	2.1	7.9
Total	27.6	72.4

3.2 Which characteristics of Web 2.0 Technology have used in these websites?

B.1 Social Networking is the most popular technology that is used at 52%. Moreover, Collective Intelligence and Peer-to-Peer Networking are used in websites at 48%. The most interesting aspect from this study is that all these 100 popular websites do not use Wikis in their own websites (0%). The information is shown in Table II.

Table II
 Results of utilization of web2.0 technologies among the 100 websites

Characteristics of Web2.0 Technology	Using Web 2.0 (%)	Not using Web 2.0 (%)
Social Networking	52	48
Collective Intelligence	48	52
Peer-to-peer Networking	48	52
Podcasts	24	76
Blogs	23	77
RSS	19	81
Mash-ups	6	94
Wikis	0	100
Total	27.6	72.4

B.2 Among the websites, it can be seen that the popular websites such as Entertainment (36%), Education (35%) and News/Media (22%), are using more Web 2.0 Technology than Traveling (17%), Shopping (17%), Banking/Finance (17%) and Business (17%) websites. An overview of the information is presented in Table III and Table IV below.

Table III

An overview of the top three types of website and their associated Web 2.0 Technology

Type of Websites	Entertainment (%)	Education (%)	News/Media (%)
Web2.0 Technologies			
Social Networking	10	8	4
Collective Intelligence	10	8	1
Peer-to-peer Networking	9	7	5
Podcasts	6	2	4
Blogs	1	6	7
RSS	0	3	0
Mash-ups	0	1	1
Wikis	0	0	0
Total	36	35	22

Table IV

An overview of bottom four websites that associated with Web 2.0 Technology

Type of Websites	Traveling (%)	Shopping (%)	Banking/Finance (%)	Business (%)
Web 2.0 Technologies				
Social Networking	5	5	4	3
Collective Intelligence	3	5	3	1
Peer-to-peer Networking	6	5	1	3
Podcasts	1	0	2	2
Blogs	1	0	2	2
RSS	1	2	3	3
Mash-ups	0	0	2	0
Wikis	0	0	0	0
Total	17	17	17	14

B.3 from Table V as reported in [6] as can be seen in the table follow this paragraph, it shows the percentage of respondents who are using or planning to use Web 2.0 Technology across the world. It can be seen that the most popular Web 2.0 technology is Peer-to-Peer Networking and Collective Intelligence. This is followed by Social Networking and Blogs, in the third and fourth places respectively. Comparing to the current status of utilization Web 2.0 Technology in Thailand, there are different in the utilization of Web 2.0 Technology. In particularly, the use of Blogs and Wikis, in various countries like countries in North America or Europe are frequently used, then in the case of Thailand. This could be a subject for further investigation on the cause and effects of this phenomenon.

Table V

The comparison of the utilization of Web2.0 Technology in other countries [6]

Countries/Regions	Asia-Pacific (%)	China (%)	Europe (%)	India (%)	Latin America (%)	North America (%)	Other developing markets (%)
Web 2.0 Technologies							
Blogs	25	20	26	29	23	32	19
Collective Intelligence	32	37	35	33	31	30	35
Mash-ups	7	6	8	10	5	8	6
Peer-to-peer Networking	43	50	38	39	43	37	39
RSS	19	20	20	18	17	25	20
Social networks	22	36	30	29	28	27	29
Wikis	19	10	23	26	17	20	12

4. CONCLUSION AND DISCUSSION

The utilization Web 2.0 Technology in Thailand could lead to changes in the society culturally as more people are using the technology which requires less time to publish and create the contents, and enabling more participation and interaction. An example is the use of Blogs to express the community's opinion and Peer-to-Peer Networking (P2P Networking) for information.

The philosophy behind Web 2.0 Technology is that social interaction is the key. In other words, Web2.0 Technology performs that is built on emergent behavior such as openness, trust, and accessibility by users or customers. However, the current status of using Web 2.0 Technology in Thailand is limited. Only 27.6% of the popular organization portals are using Web2.0 Technology and the majority of 72.4% have not integrated Web 2.0 Technology in their websites as can be seen on Table I.

This study also presents an overview of the use of Web 2.0 Technology with the idea of the investment of Web 2.0 Technology of others countries across the world by the statistic from report as shows on Table V [6]. The significant fact is that all the 100 Thais' popular websites are not using Wikis (0%). In contrast, North America recorded participation rate of about one third at 20%. Among other countries in Asia, the figures are China at 10%, India at 26% and other Asian Pacific countries at 19% (the information from Table V).

Moreover, the utilization of Peer-to-Peer Networking and Collective Intelligence is more widespread in China (50%), Asian-Pacific Countries (43%), and India (39%) as looking to Thailand rate at 48% in this research. On the other hand, there is lower utilization of Peer-to-Peer

Networking and Collective Intelligence in North America and Europe (the information from Table V). This is arguable that could be due to issues on copyright and protection of intellectual properties.

Another aspect of the significance in this finding is the use of Social Networking in Thailand (52%) (the information from Table II) is more common than North America (27%) (the information from Table V). This could be due to differences in cultural background and behaviors. However, although it appears in China where the similarity has cultural environment to Thailand shows that the using of Social Networking is around 36% (the information from Table V).

This initial finding may lead to further study in helping both public and private organization with their planned utilization of Web 2.0 Technology. The current status in using Web 2.0 Technology in Thailand when looking to the use this technology among the other countries will also lead to another study from the cultural perspectives. The issue is not limited to the design of the websites but the study should focus on the effectiveness and influencing factors due to Web 2.0 Technology in diverse disciplines such as business, teaching, and learning. This will have the desirable consequences of encouraging more participation in the future-business areas.

5. APPENDIX : A SAMPLE LIST OF 20 THAIS' POPULAR WEBSITES

1. <http://www.eduzones.com>
2. <http://gotoknow.org>
3. <http://www.sanook.com>
4. <http://www.kapook.com>
5. <http://moohin.com>
6. <http://www.thai-tour.com>
7. <http://www.pramool.com>
8. <http://www.weloveshopping.com>
9. <http://www.obec.go.th>
10. <http://www.rd.go.th>
11. <http://www.pantip.com/tech>
12. <http://www.bcoms.net>
13. <http://www.manager.co.th>
14. <http://www.thairath.co.th>
15. <http://www.siamhrm.com>
16. <http://www.jobth.com>
17. <http://www.thaihealth.net>
18. <http://www.thaiclinic.com>
19. <http://www.settrade.com>
20. <http://www.kasikornbank.com>

6. REFERENCES

- [1] O' Reilly. T. (2005). What Is Web 2.0? Design Patterns and Business Model for the Next Generation of Software. <http://oreilly.com/web2/archive/what-is-web-20.html> (l.v. 2009-06-10).
- [2] Anderson, P. (2007). What is Web 2.0? Idea, technologies and implementation for education <http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf> (l.v. 2009-06-11).
- [3] Kei-Hoi C., Kevin Y.Y., Jeffrey P. T., and Matthew S. (2008). HCLS 2.0/3.0: health care and life sciences data mash-ups using Web 2.0/3.0: The Analysis of Directional Time Series: Applications to Wind Speed and Direction. *Journal of Biomedical Informatics* Breckling, Ed., vol 41, No.5, p. 1
- [4] Wilde, E. (2007). Declarative Web 2.0. <http://ieeexplore.ieee.org/Xplore/defdeny.jsp?url=http%3A%2F%2Fieeexplore.ieee.org%2Fstamp%2Fstamp.jsp%3Ftp%3D%26arnumber%3D4296688%26isnumber%3D4296571&denyReason=-134&arnumber=4296688&productsMatched=null> (l.v.2009-06-10)
- [5] Ullrich, C., Kerstin, B., and Heng L. (2008). Why web 2.0 is good for learning and for research principles and prototypes. International World Wide Web Conference Committee (IW3C2) pp.5
- [6] Martin, J. (2007). How business are using Web 2.0: A McKinsey Global Survey. <http://www.mckinseyquarterly.com/PDFDownload.aspx?ar=1913>. (l.v. 2009-06-10)
- [7] Doctorow, C., et al. (2002). Essential Blogging. Seastopol, CA, O'Reilly & Associates.
- [8] Scot. D.T. (2004). Blog Invasion! What Are They? Where Did They Came From? <http://homepage.mac.com/dtraversscott/Academics/Blog History/BlogsScott.pdf> (l.v.2009-06-11)
- [9] Murugesan, S. (2007). Understanding Web 2.0 - Second Generation web technologies. [publish by the IEEE Computer Society] Downloaded on March 20, 2009 from IEEE Xplore via Murdoch University.