

## Top Tweet News

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### Abstract

*Twitter is a worldwide social media website. The technology of Web 2.0 such as the Internet has made it possible to reach people around the globe in a single click of a button on personal computers or mobile phone devices. Twitter helps us easily share any ideas in the form of fewer than 140 characters messages which are called "tweet". Even though the message is short but if we usually follow many Twitter accounts, there will be too many short messages. This kind of problem may cause it to be difficult to read all the tweets in our timeline. Thus, in this study we present the system call "Top Tweet News" which can automatically collect the information of the twitter users we follow from Twitter API, ranking the most significant tweets as the top ten tweets and be able to automatically post the up to date news via account @topthainews, then deliver the top ten tweets via email and also show the results on a webpage. To evaluate the system we have conducted the online survey page, the results have shown that about 63.18% is satisfied, 30.96% is neutral, 5.86 % is dissatisfied with the system.*

**Keywords:** Twitter, Social Media, Social Network, New Media, Microblogging, Web 2.0

### 1.Introduction

Social media is a media for social interaction [1]. The idea of which allows users to create and exchange content or we so-called "user generated content" has been slowly developed in the era of Web 1.0 because of being connected to the network it has never been easier than it is today. Nowadays we live in the era of Web 2.0 after the Internet has made it possible to reach people around the globe with a single click of a button or on hand-held devices. Social Media has already exploded into one of the biggest innovation of our time. Examples of Social Media tools such as

Facebook, Hi5, LinkedIn, and Twitter. In this study we focus on "Twitter" which is categorized in Microblogging [2] among Social Media tools.

The Twitter company finally revealed its long mysterious registered user number, speech by Co-founder Biz Stone during his opening remarks in kicking off Twitter's Chirp developer conference, April 2010[3]. It is 105,779,710 registered users.

Twitter is basically a simple social media web site. It is a hybrid of microblogging site, email, instant messaging and SMS messaging all rolled into one neat and simple package. The idea behind twitter is that we broadcast to anyone who chooses to follow us, simple messages also known as "tweets". It could be as simple as what we are doing now or we may ask a question to our followers. Likewise we can choose to follow people and receive their messages. Twitter also has some unique characteristics such as the ability to send direct messages to users instead of broadcasting to everyone, mobile options to send and receive tweets via SMS messaging on our mobile phone, search options allowing us to find other Twitter users near our location, and APIs that allows 3rd party developers to develop some great applications. One significant difference between blog and Twitter is the size of the message – the character that puts Twitter into microblogging. Twitter messages are limited to 140 characters, the reason for this restriction is that Twitter is designed to be used via SMS (Text message) on mobile phones. These short messages are called "Tweets" and when the short messages are forwarded by the other Twitter users, we call such messages as "retweets".

As we enter into the Twitter world our first question is likely to be "who to follow?". Who usually provides useful and interesting content? Some ideas about "who to follow" have been proposed [4]. Suppose we already know who to follow, the problem of reading the information still happens. Even though the messages are short but if the twitter users we follow continually tweet the message 24/7 there will be too many messages shown in our timeline. This kind of

situation is more serious especially when we follow some popular newsperson that use twitter as News Media [5] to deliver the latest news to their audience. Thus, the problem is that there are too many tweets to catch up with. For example, for some people who do not use twitter every day, it is inconvenient to go back from the current timeline to read the old tweets.

Therefore in this study we propose and develop a system that can solve the problem mentioned above. We named our system as “Top Tweet News” which is automatically run 24/7. The output consists of 1) processing the interesting tweets in the news area 2) automatically posting to @topthainews 3) pushing the content of the top ten tweets to the given email and 4) showing the top ten tweets via a web page. The top ten tweets are updated every hour.

## 2. Related Work

Several papers have been presented about Twitter research field. The Twitter characteristics have been studied in [6, 7, 8, 9, 10]. The study of social media as new media in education and medical education are in [11,12,13,14, 15]. Twitter also says that it is seeing 600 million search queries per day.

## 3. Research Methodology

This study was conducted by separating it into two parts. First, we developed the system which can automatically collect data via Twitter APIs, process the data as top ten ranking significant Tweets. Secondly we created the online survey page to receive the evaluation and suggestions from users.

### A. System Development

To study and to solve the problem that we state above we design our system as show in figure 1. The system was divided into 3 main parts.

**Input Unit:** The function of input unit is to collect data. As shown in Figure 1. The system input is payloads(informations) that we get from Twitter APIs. We created the system which automatically provoke the Twitter APIs to get and save input to database.

**Processing Unit:** The function of the processing unit is to rank the tweet by the ‘retweet\_count’ DESC(descending). As shown in Figure 2, the status of tweet shows that the number of times the tweet has been retweeted.

**Output Unit:** The function of output unit is to automatically post the top ten ranking tweets in the processing unit in the period of one hour, There are three channels to be delivered :

- Timeline of @topthainews: top ten tweets can be updated via Twitter API called “Tweet Resources: Post status/update” method.
- Email: top ten tweets can be delivered to user email via Google mail SMTP services.
- Web Page: show the results via a web page written in PHP language. The general users (Twitter users and non-Twitter users) can request the result via URL.

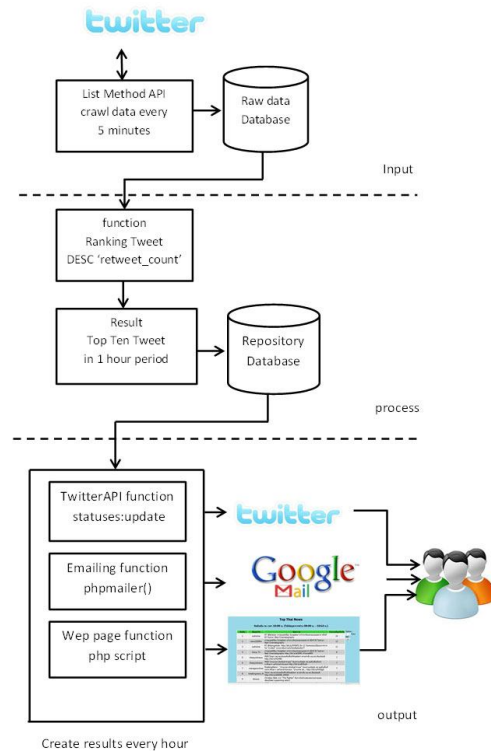


Figure 1. Conceptual System Design and Development

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in_reply_to_status_id_str: null,
in_reply_to_user_id: null,
text: "RT @jin_nation: เช่่วพันใจ!!! RT @Cake_NBC: ผลงานวิจัยผลการค้นพบ83 ทุกางวัล http://bit.ly/dUS1Hp",
contributors: null,
retweeted: false,
in_reply_to_user_id_str: null,
retweet_count: 31,
geo: null,
source: "<a href='\"http://www.tweetdeck.com\"' rel='\"nofollow\"'>TweetDeck</a>",
created_at: "Mon Feb 28 04:46:19 +0000 2011",
id_str: "42083149840257024",
place: null,
in_reply_to_status_id: null,
coordinates: null,
truncated: false,

```

Figure 2. The retweet\_count status.

**B. Survey Page**

In order to evaluate this study, we have created an online survey page to ask the users' opinions and to receive the comments and suggestions from the users. In the survey page there are 7 questions.

**General data of questionnaire responder**

What is your gender? What is your career?  
 What is your age? What is your highest educational degree?

**Opinion of questionnaire responder**

Are you a Twitter user? Are you satisfied with the result of Top Tweet News? Do you think Top Tweet News is useful and delivers the up to date news?

The survey page is randomly sent via email, posted on the page on some popular web board communities of Thailand and mentioned on the newsperson Twitter accounts.

**4. Experimental Results**

In this study we choose to focus on Twitter accounts who work as newsperson in Thailand, who provide news resources. As a result, all tweets in the processing unit are only about news. The experimental results are described below.

**A. Automatically post via timeline @topthainews**

Figure 4. shows the result of @topthainews timeline. The tweet messages have ranked by the system. The 'rt=' is used to indicate that how many times the tweet has been retweeted.



Figure4. @topthainew automatically posted every hour

**B. Deliver Top Ten Tweets to Email.**

Figure 5 illustrates the results via email. Sometimes we cannot login into Twitter to read the news. We decided to create a system that can send tweet to emails, so the users can keep the top ten tweets in users' email and later go back to read them.

อันดับ	ชื่อผู้ทวีต	ข้อความ	จำนวนที่ถูกรีทวีต
1	suthichai	RT @ktnews: ภาพยนตร์เรื่อง Inception คว่ำรางวัลกำกับภาพยอดเยี่ยม ครั้งที่ 83 ในสาขา Best Cinematography	24
2	news1005fm	ภาพยนตร์เรื่อง Inception คว่ำรางวัลกำกับภาพยอดเยี่ยม ครั้งที่ 83 ในสาขา Best Cinematography	13
3	suthichai	RT @idongphoto: http://bit.ly/9YR6FZ อีก 12 วันครบรอบ1ปีของการจากไป "จาเพ็ญ" พวกเราร่วมกันรำลึกหรือยังครับ??	11
4	Voice_TV	ภาพยนตร์เรื่อง Inception คว่ำรางวัลกำกับภาพยอดเยี่ยม ครั้งที่ 83 ในสาขา Best Cinematography http://bit.ly/eD89Pj #VoiceBRK	8
5	thaiquicknews	MGR:โฆษก ศอ.รส. ยืนยันขอคืนพื้นที่พันธมิตรฯ ตามคำสั่ง ผบ.ตร. เรียบร้อยดี http://bit.ly/fCb48h	7
6	thaiquicknews	MGR:"ปานเทพ-ประพันธ์-คำคุณ" ร้องผ่านเฟซบุ๊ก ดร.ขอคืนพื้นที่หน้าก.ศึกษา แต่ไม่ก... http://bit.ly/eEWuzh	7
7	manageronlines	BreakingNews - "ปานเทพ-ประพันธ์-คำคุณ" ร้องผ่านเฟซบุ๊ก ดร.ขอคืนพื้นที่หน้าก.ศึกษา แต่ไม่ก... http://bit.ly/fv0Qg0	7
		โฆษก ศอ.รส. ยืนยันขอคืนพื้นที่พันธมิตรฯ ตามคำสั่ง ผบ.ตร. เรียบร้อยดี	

Figure 5. Top ten tweets that are delivered via email

**C. Web Page**



Figure 6. Result web page written by php language to show top ten tweets

Figure 6 shows the results of the system via webpage. This page shows the top ten tweets in one hour. The content will be refreshed in every one hour. This page is opened to every one who wants to read the news. It can be requested by any users. At the bottom of the page users can subscribe or unsubscribe to receive news via email.

#### D. Survey Results

The online survey page has been randomly sent to Internet users via email, randomly mentioned to Twitter users to answer the questionnaire and leave the survey page in the some popular webboard communities of Thailand. There are 250 responses and 239 usable so the overall response rate is 95.60%. Figure 7. shows the results of the question “Do you think that Top Tweet News is useful and delivers the up to date news?” The result is that 33.05% is very useful, 43.10% is useful, 20.50% is neutral, 2.09% is not useful and 1.26% is very not very useful.

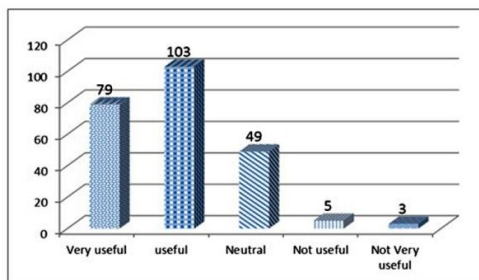


Figure 7. Do you think that Top Tweet News is useful and deliver the up to date news?

Twitter is easily accessed by mobile phones, thin clients and web applications. From the online survey some users leaved theirs comments that it is fast to receive news via Twitter. Some offices did not permit the employee watch television on working hours, thus they used twitter on mobile phone as an alternative communication tool.

#### 5. Conclusion

Twitter is a worldwide Social Media website. The Internet made it possible to reach people around the globe. The tweet messages are short but if we follow many twitter accounts there will be too many short messages. This study presented the idea of how to solve the “short but too many tweets”. In this paper we have separated our study into two parts, First, we created the application system named as “Top Tweet News” which automatically gives us the Top Ten Tweets about news in every hour and 24/7. Secondly we have the system evaluated by the users. The results of the survey implies that 63.18% is satisfied, 30.96% is neutral, 5.86 % is dissatisfied. Most users were satisfied with the system because top ten tweets were important and easy to read while the reasons of dissatisfaction were that the top ten tweets were not in real time which are due to time for ranking tweets.

#### References

- [1] Wikimedia Foundation Inc. “Social Media” [Online] Available from: [http://en.wikipedia.org/wiki/Social\\_media](http://en.wikipedia.org/wiki/Social_media) cited 2011 February 27.
- [2] Wikimedia Foundation Inc. “Microblogging” [Online] Available from: <http://en.wikipedia.org/wiki/Microblogging> cited 2011 February 27.
- [3] Mashable, Inc. “Twitter Has 105 Million Registered Users ” [online] Available from: <http://mashable.com/2010/04/14/twitter-registered-users/> cited 2011 February 27.
- [4] Wit Krutkam ,Kandu Ruanpongsa Saikew, Amut Chaosakul, “Twitter Accounts Recommendation Based on Follower and Lists,” Jictee 2010 Luang Prabang ,Lao PDR Dec 21 – 24 ,2010 pp. 98–102.
- [5] Haewoon Kwak, Changhyun Lee, Hosung Park and Sue Moon, “What is Twitter, a Social Network or a New Media?” WWW2010 ,April 26-30 2010, Religh, North Carolina, USA, pp 591-600.
- [6] Balachander Krishnamurthy, Phillipa Gill and Martin Arlitt, “A Few Chirps About Twitter”, WOSN’08 ,2008, Seattle ,Wachington,USA, pp 19-24.
- [7] Courtenay Honeycutt, Susan C. Herring, “Beyond Microblogging: Conversatin and Collaboration via Twitter” Proceeding of the 42th Hawaii International Conference of System Sciences-2009,
- [8] Bernardo A. Huberman, Daniel M. Romero and Fang Wu, “Social Networks that matter: Twitter under the microscope”, Social Computing , HP Laboratories, Palo Alto ,CA, December 4,2008.
- [9] Funda Kivran-Swaine, Priya Govindan and Mor Naaman, “The Impact of Network Structure on Breaking Ties in Online Social Networks: Unfollowing on Twitter” ,CHI 2011, May 7-12, 2011, Vancouver , BC, Canada,
- [10] Bernard J. Jansen and Mimi Zhang, Kate Sobel and Abdur Chowdury, “Twitter Power: Tweets as Electronic Word of Mouth” Journal of the american society for information science and technoloy , pp.2168-2188, May 2009.
- [11] Anotoliy Gruzd, Barry Wellman, and Yuri Takhteyev, “Imaging Twitter as as Imagined Community”, American Behavior Scientist on Imagined Community.2011.
- [12] BMJ publish Group Ltd, “The other Twitter revolution: how social media are helping to monitor the NHS reforms” [online] Available from :<http://www.bmj.com/content/342/bmj.d948.full?sid=138215cd-dc11-45f5-b91e-fc4e3cc7bf46> , cited 2011 February 27.
- [13] Wolfgang Reinhardt, Martin Ebner, Gunter Beham and Cristina Costa, “How People are using Twitter during Conferences”, Creativity and Innovation Comptencies on the Web conference , Salzburg , 2009, pp.145-156.
- [14] Gariela GROSSECK and Carmen HLOTESCU, “Can We use Twitter for Education Activities”, The 4<sup>th</sup> Internation Scientific Conference eLSE elerning and Software for education, Bucharest, April 17-18,2008.
- [15] Akshay Java, Tim Finin , Xiaodan Song, and Belle Tseing, “Why We Twitter: Understanding Microblogging Usage and Communities” Joint 9<sup>th</sup> WEBKDD and 1<sup>st</sup> SNA-KDD Workshop ,August 12,2007 , pp 56-65.