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A study on the User Experience Design of Mobile Twitter Application

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***Abstract*—**The number of people using SNS with their mobile devices is soaring. This research focuses on the Twitter service that has the most third-party applications and delved into the fact that there were not sufficient studies on the UX design aspects of Twitter applications.

Among social network services which have emerged as a major social topic lately, this research try to analyze the UX design of the Twitter application which is also called micro-blogging service.

Therefore this research sets its goal to draw components of the UX design aspect of the Tweeter application on which there are not enough analysis yet. Moreover, this research suggests improvement of mobile application which will assure better users' experience.

In order to analyze the UX design aspect of the mobile twitter application, with relevant document and user research, evaluating factors of the UX Design which would affect users' experience were organized.

The subjects for cases were selected among six paid and free social networking applications that had been consistently ranked from 1st to 100th in the Korean application store during May, 2012 after closely monitoring the rank.

From May 15th to May 11th in 2012, in accordance with the evaluating standard, surveys were conducted in a form of interviews with 20 subjects who have used the Twitter application to find out problems and solutions for the UX design of the mobile Twitter application.

***Keywords*—**Social Network Service, Twitter, User Experience Design, Interface Design

I. Introduction

A. Background and Goal of the Study

E-MARKETER, a market research institution, announced there were more than one billion and two hundred million people using SNS as of February, 2012. The result means that one out of five people in the world is SNS user, and a half of internet users are using SNS [1].

The number of South Korean SNS users is dramatically increasing as well. Especially, in case of the Twitter service , which is also called micro blogging site, the increasing rate is the highest in the world. In comparison with the record of 50,000 users in November, 2009, it jumped into 6.5 million in May, 2012. This is the fastest growing case in the world [2].

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The widely-distributed smart phones helped the number of SNS users grow because the instant SNS service was a good fit for smart phones which are controllable anytime and anywhere.

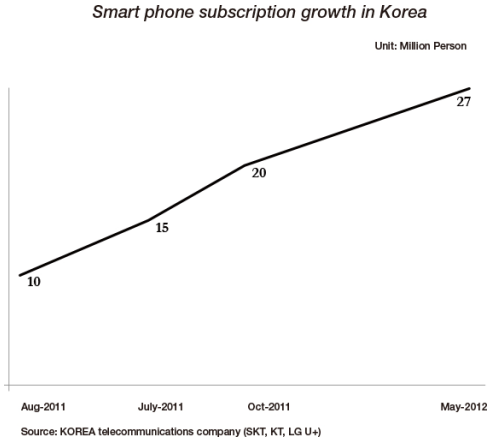

Fig.1 Smart phone subscription growth in Korea

In South Korea, since 2009, the number of smart phone users was started to grow, and as of 2012, the ratio of smart phones exceeded 50% of entire phone devices. When it comes to the number, it can be said that more than a half of the population are using smart phones [3].

Dick Kostolo, the CEO of Tweeter, said "the most of Tweets popping up everyday come from mobile devices." Besides according to the analysis of ComScore, the time spent on SNS by mobile users are longer than that of those who uses the Twitter service by PC. They analyzed that those who used the service by mobile devices spent more than two hours a month while PC users spent only 20.4 minute [4].

According to Ranking.com, the trend from April to June in 2012 showed that the mobile users have been consistently increased whereas PC visits have plummeted. It is because mobile devices have more convenient means to take/upload pictures or videos. Consequently, the number of mobile users is expected to exceed that of PC users any time soon.

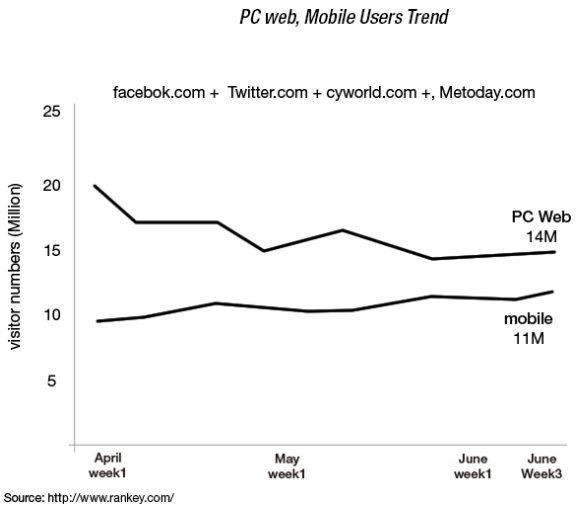

Fig. 2 PC web, mobile users trend [5].

This research focuses on the Twitter service that has the most Non-official applications and the fact that the service traffic caused by the NOA accounts for 42% of the entire traffic [6].

As of May, 2012, there were 590 mobile applications relevant to the Twitter among 650,000 applications in the Apple Korean application store, which is currently considered most active application store. In 2011, the case where Twitter took over TweekDeck, a popular application development company in U.K, implied that the market of the Third-party application development was an emerging industrial model.

The mobile application of the social network has already become a substitution rather than a complement to the web.

In fact, however, there have not been enough researches for the UX design including interface design, social interaction, reading experience and functions. Because the mobile application is getting close to that of web in terms of functionality, it is apparent that usability plays a crucial role in competitiveness of mobile application.

Throughout analysis of the UX design, this research delves into what the UX design components it should consider while developing applications. In addition, according to the analytic standard, the goal of the research is to draw a solution to the Twitter application which can offer users better users' experience in terms of the UX design.

B. The scope of the research and the method

This research proceeded focusing on the Twitter service in which the most third-party application developments were occurring in other various SNS services. The followings are the methods which were adopted for this research.

Firstly, the environments and characteristics of the application market were examined through documents and web research, and then based on the research, the value of third-party application market was evaluated.

Secondly, theoretical points in typical users' experience design to analyze the UX design were examined. Then, in order to analyze the UX design of applications, after document analysis and user research, the components that could influence users' experience were subsequently identified and organized.

Thirdly, monitoring the rank among applications during the May of 2012, six consistently high-ranked free and paid applications have been chosen. The final six applications were Twitter, Osfoora, TwitBird, TweeBot, and Twitkr.

Based on the drawn analysis components, interviews were executed along with 20 users who had experience of Twitter application in the past one week.

From the analysis, solutions which are useful not only in mobile twitter applications, but also in the UX design of Third-party application of SNS were deducted.

II. The Theoretical Background

A. Pondering for Twitter Service

1. The Summary of Twitter and Status of Domestic Use.

In March, 2006, Ovius, a U.S blogging technology company, started the service and Twitter caught on with trend as smart phones were distributed to the public. It is helping to increase the twitter's usage rate because smart phones can be used for internet regardless of time and space, and enable immediate participation and responses [7].

In 2010, which can be called an insane year for SNS service, the social network service dramatically transformed the form of official and unofficial communication route. The SNS enabled us to talk to old friends whom had not been able see often, to check out the news that major presses had missed and to glance at private daily lives of celebrities. Besides, people tend to participate in corporations' marketing events. If email was called a killer application that spread internet to the public, following email, SNS is said to rewrite the entire history of internet, which means the growth rate of internet usage increased at an exploding rate so that no one could ever imagine the current number of users, time spent on internet and the amount message [8].

According to Oikolab, the Korean Twitter statistics site, as of May of 2012, there are 6.4 million people registered in Twitter. This kind of increasing rate has to do with popularity of smart phones. In May, 2012, the number of people who owned smart phones is more than 27 million and the figure is 51.4% out of 52.55 million registered phone users, which accounts for more than a half [9].

2. Open System and Third-Party Application

API, which stands for Application Programming Interface, is open API where not only can internet users be provided with web-searching result and users' interface, but also they are able to develop applications and services [10]. That is, Twitter API includes Twitter clients' data and it is also used for making applications that allow us to log in Twitter from the Twitter website.

The third-party application allows products made by other companies to access twitter or other data. That is, the third-party application refers to an applications developed by a third party (individuals or corporations) using API open to public by another company.

Even though twitter started with only two developers, thanks to the open API, thousands of ideas and developers' effort have been added to become one of the global company these days.

This is the reason why pursue open API. The site obviously becomes more affluent with external data. Then, the data from the original site can have more value to its customers when the data is transferable to other sites where the data can be consumed more conveniently.

Facebook, Flickr, Google map, and Yahoo were other major open API cases.

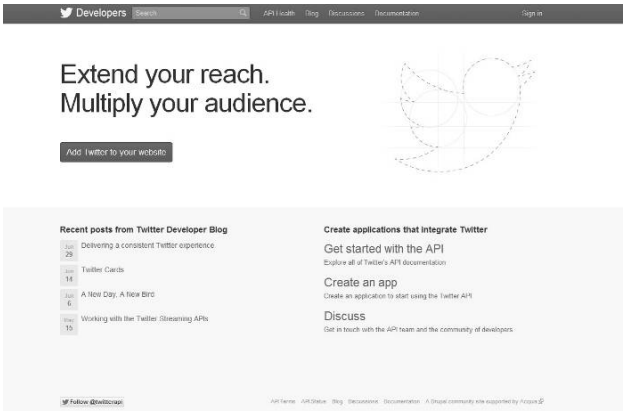

Fig. 3 Twitter Developers' portal for supporting developers

3. Trend of Third-Party Application Market of Twitter

Twitter is more optimized to mobiles than web in that the twitter provides service with limited 140 characters. Due to the synergy effect between smart phones and twitter service, the combination among web-smart phones- third party application is considered vital and emerging as a new model in the industry. In fact, the statistics shows that only 20% of twitter users accessed twitter from web, and the rest of them did from mobile service with smart phones. The statistics support the phenomenon [11].

As the number of people accessing the SNS service with mobiles increases, various sorts of mobile-based third-party applications are consistently coming out. In the most active application store which has the most applications, it turned out that there were 590 applications relevant to twitter. This figure is twice as many as the Facebook (300 applications), which is the largest social networking service in the world [12].

In addition, the case in which Twitter took over TweetDeck to keep the market share of the Third Party Applications in check reassured the influence and marketability of the third party applications.

B. The study for User Experience Design

1. The concept of the UX Design

A series of activities that organize experience components for better experience are called "Experience design". The activities that have something to do with products are called UX design. Thus, as a subcategory of experience design, the UX design is a series of activities or methods that plan design factors for users to have good experience with the products. In this case, the "products" means interactive products including software, website, machine, system and computer, all of which have the concept of "use".

Users experience means anything internalized while using products and includes feelings, memories and satisfaction as well as experience [13].

The UX design that designs user experience is comprehensive experience which users go through while using certain systems, products, and services either directly or indirectly. This is precious experience achieved not only by simple functional or procedural satisfaction, but also mutual interaction along with users' participation and observation in a comprehensively perceptible aspect [14]. Therefore, the user experience is not created by us, but it is formed with private experience in individuals' minds. During a process of interaction, the experience of private mind occurs [15].

2. Components of the UX design

Because user experience is generally formed by mutual interaction between users and system, it cannot be explained by only a partial attribute. This means the UX design has more to consider than conventional UI designs.

The keywords for designing better user experience include "Useful", "Usable" "Desirable" Findable" Accessible", "Credible" "Valuable", and those factors should be implemented in balance to provide good user experience.

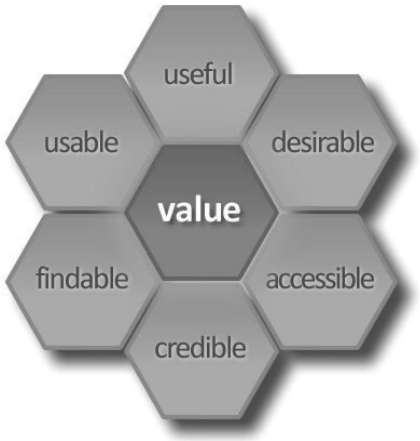

Fig. 4 User Experience Honeycomb [16]

III. Analysis of the Mobile Twitter Application in an Aspect of the UX Design

A. Subjects Selection

The subjects for cases were selected among paid and free social networking applications that had been continuously ranked from 1st to 100th in the Korean application store during May of 2012 after closely monitoring the rank. The finals were Twitter as an official application, Osfoora, TwitBot, Twitkr, Twitbird and TweetList.

Fig. 5 Selected Application Icons (Twitter, TweetBot, TweetList, Twtkr, Osfoora, Twitbird)

B. Drawing Analysis Components

1. Definition of Gestures

TABLE I
GESTURES USERS MAKE TO INTERACT WITH IOS-BASED DEVICES [17].

Gesture	Action
Tap	To press or select a control or item (analogous to a single mouse click)
Flick	To scroll or pan quickly

2. Definition of Primary Functions

Despite subtle functional differences in main role to the user experience in terms of names and icons among applications, primary functions of the official application were organized because they are the first ones that have been faced.

3. Drawing UX Design Analysis Components

In order to analyze the UX design aspect of the mobile twitter application, evaluating components of the UX Design with relevant document and user research were organized. [19].

By implementing secondary research, the list became more sophisticated, and following final analysis components subsequently were deducted and organized through removal and integration of overlapping factors.

TABLE II
DEFINITION OF OFFICIAL APPLICATIONS' PRIMARY FUNCTIONS [18]

Symbol/Name	Item
Tweet	A message posted via Twitter containing 140 characters or fewer (Noun) Tweet, tweeting, tweeted. The act of posting a message, often called a "Tweet", on Twitter (Verb)
@	The @ sign is used to call out usernames in Tweets, like this: Hello @Twitter! When a username is preceded by the @ sign, it becomes a link to a Twitter profile
interaction	The Connect tab lets you view interactions, mentions, recent follows and Retweets. Using the Connect tab you're able to view who has favorited or retweeted your Tweets, who has recently followed you, and all of your @replies and @mentions.
Direct Message	Also called a DM and most recently called simply a "message," these Tweets are private between the sender and recipient. Tweets sent over SMS become DMs when they begin with "d username" to specify who the message is for
Favorite	To favorite a Tweet means to mark it as one of your favorites by clicking the yellow star next to the message
Follow	To follow someone on Twitter is to subscribe to their Tweets or updates on the site.
Folloer	A follower is another Twitter user who has followed you.
Timeline	A real-time list of Tweets on Twitter. See also Home Timeline
Interaction	A timeline in the Connect tab displaying all ways other users have interacted with your account, like adding you to a list, sending you a @reply, marking one of your Tweets as a Favorite, retweeting one of your Tweets.
Lists	Curated groups of other Twitter users. Used to tie specific individuals into a group on your Twitter account.
Mention	Mentioning another user in your Tweet by including the @ sign followed directly by their username is called a "mention". Also refers to Tweets in which your username was included.
Profile	A Twitter page displaying information about a user, as well as all the Tweets they have posted from their account
Retweet /RT	A Tweet by another user, forwarded to you by someone you follow. Often used to spread news or share valuable findings on Twitter. (Noun) To retweet, retweeting, retweeted. The act of forwarding another user's Tweet to all of your followers. (Verb)
Search	A box on your Twitter homepage that allows you to search all public Tweets for keywords, usernames, hashtags, or subject
# Hashtag	The # symbol, called a hashtag, is used to mark keywords or topics in a Tweet. It was created organically by Twitter users as a way to categorize messages.

TABLE III
ANALYSIS COMPONENTS

Group	Item	
Function	Tweeting	Picture attachment function
		Positional information sharing function
		List editing function
		Function to compose long messages (more than 140 chracters)
		Usability of Reply function
	Quotation Retweet Function	
	Convenience and intuitiveness in Gestures for Retweet and Favorite	
	Preciseness in definition of gestures	
	Viewable list straight from the timeline.	
	Sound effect	
	Menu customizing function	
	Alarm setting function	
Timeline (Reading Experience)	Picture preview attached to Tweet	
	Alterable background color and image	
	Marking unread tweet	
	Alarming when others RT my tweet.	
Social Interaction	Alarming when others make my tweet favorite	
	Alarming when others followed me	
	Improvement on searching function	
	Intuitional information of each icon	
Interface Design	Consistency between the official application and visual design aspects	
	Confusion on initial screen at the beginning of application	

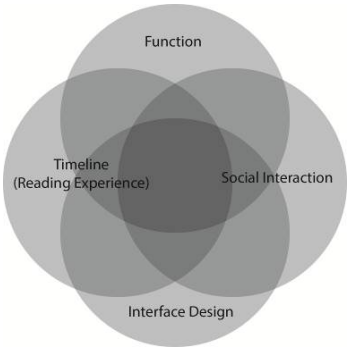

Fig. 6 Factors of the UX design aspect considered on developing Twitter application

C.Analysis method

Based on the analysis components of the four drawn groups, the experiment was conducted. Analysis targeting the UX design aspect of 6 twitter applications were implemented in a form of interviews along with tasks to 20 subjects who have used the Twitter application in the past one week,

According to Sysomos, which is a company specializing in statistics, 95.75% of all twitter users are following less than 500 people. Making it more detail, 79% have 0~100 friends and 21% have more than 100 friends.

TABLE IV
DISTRIBUTION OF USERS ACCORDING TO THE NUMBER OF FOLLOWERS

# Friends	% Twitter users	% Accumulative
0 - 499	95.75	95.75
500 - 999	2.21	97.95
1000 - 4999	1.91	99.86
5000 - 9999	0.09	99.95
10000 - 19999	0.05	100.00

Quoting the result of the research, users groups were divided into two groups. One is a group of members who have 1~100 friends and another is a group of members who have 101~500 friends.

TABLE V
SETTING GROUP FOR ANALYSIS SUBJECT

	Gruop1 (25 person)	Gruop2 (25 person)
# Friends	0-100	101-499

Users in group 2 were assumed to have more followings and followers quantitatively because others have done more Retweet, Mention or Favorite to group2 as the users have done more Retweet and Favorite others; which means more social interactions among group 2 were assumed to exit and the relevant differences were tried to be examined. [20].

Considering task-learning, the order in the test for the 6 applications was determined randomly and the test has proceeded in a way of observing and drawing problems and solutions to the common UX design.

D.Case Analysis of Utilizing Twitter App in terms of UX Design

1. Analysis of Official Twitter Application

Official Twitter Application is one of the most popular and well-known mobile applications, and all participants in the experimental group have experienced with utilizing its services. It was easy for them to utilize since they have already learned how to use Tweeting, Retweet, Favorite, crating profile, searching services etc.

Geotagging service which can help users to find location specific information is using the same icon iPhone's, but some users were not aware of it.

As shown in Feature 1, making the scroll gesture on "Me" tab which located at the bottom of the right side, Direct Massage window will immediately come up. However, only one out of 20 subjects knew this function, and most of the subjects were not able to find out. They also criticized why such functions were hidden.

Fig. 7 Example of Gesture interaction hidden behind "Me" Tab

People couldn't see the original Tweets when they try to reply to, but scrolling up as shown in the Figure 8 makes it possible. This gesture interaction is also hidden, so most of the testers were not able to find out easily.

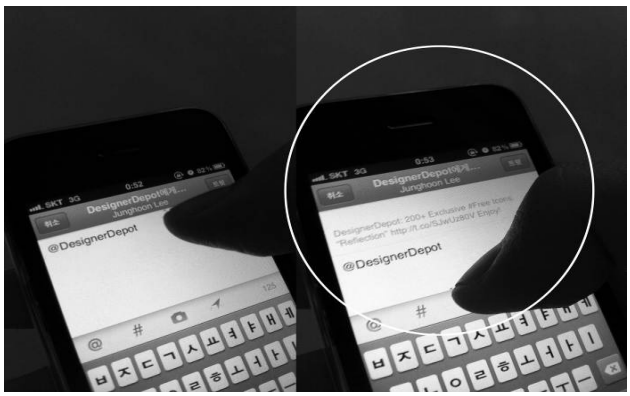

Fig. 8 Example of flicking down to check the original Tweet

If other users Following, Favorite the Twitting and Retweet, user can check the situation at Connect Tab, Group 2 which relatively has more friends liked this function. Only Twitter App could check the above three conditions out of six apps. Some were answered that Official Twitter App's such function made them re-use Twitter while using paid apps like Osfoora.

If user wants to Favorite, Reply, Retweet while reading the Tweet on the Timeline, without pressing the Tweet, simply scrolling from left to right side as shown in the figure 9 could see the interface which make Mantion, Retweet, Favorite function available. But, most of the subjects were tab Tweet to Favorite, Reply Retweet rather than use gesture interaction.

Fig. 9 (a), (b) Example of flicking Tweet from left to right side, (c) Example of favorite Tweet

2. Analysis of Osfoora Application

Osfoora App's major feature is the color. Both its color of the icon and the background are black. The first time users of r Osfoora App didn't notice that Osfoora is one of the Twitter App, since it is hard to find out correlation between Osfoora and Twitter from its naming and icon design.

Overall, black-colored Interface Design made users feel comfortable reading the Timeline's Tweet at first. But some were answer that see on screen for a long time may cause eye-strain, while some were answer that Black-colored Interface Design seems to give them a negative experience.

Enter Osfoora App, Interface Design as shown in the figure 10 (a) will appear. Users who utilize Osfoora App for the first time were satisfied with its aligned design.

Some were answer that they are using Osfoora App when they want to attach two or more photos. The number of attachments is marked as shown in the Figure 10 (c).

In the case of Official Twitter App, unread Tweets are distinguished with blue color at the Home Tab while Osfoora App marked the number. Some preferred this function among Group 1 testers, but most of the testers were not much care about whether unread Tweets are marked or not.

Fig. 10 (a) Main page, (b) Timeline home, (c) The number of attachments is marked

3. Analysis of TwitBird Application

Entering TwitBird App, main menu with table appears as shown in the Figure 11 (1). Compared to Official Twitter App which is directly connects to the Timeline Home, TwitBird App's main page is more organized.

Some users speak highly of TwitBird App because it allows users to select the first page. It also allows users to change the background colors and images. However, TwitBird visualize its Tweet in the form of balloon, and there are quite many opinions that too many decorative elements in the TwitBird. Some people think that allowing users to decorate the App is good; however, its excessive decorations disturb users' comfortable reading, so it may be better to remove the background function. Changing background function key is located at the bottom of the Timeline Home. However, many people think that it is unnecessarily to place at the Timeline Home because it's not a frequent used function. Intuitive nature of icon is relatively low compared to other apps, and it lacks coherence to Official Twitter App.

TwitBird utilizes third-party service “Twitlonger” to allow users to write text longer than the 140 characters tweet limit of Twitter. Providing such service is TwitBird’s differentiating factor, but testers answered that they don’t feel the need to use this service. If it’s necessary to write longer than 140 characters, simply split the sentences and upload separately, otherwise write at blog and link the URL are good enough. Besides blog, users can utilize different media such as Facebook.

Also, users answered that they don’t feel need to use filter function in the Timeline Home and Mark read Tweet function. There are some opinions that icon is somewhat non-intuitive

TwitBird also provides audio recording services when users write Tweet message, but most of the users also don’t feel need to use this service.

One of the TwitBird’s differentiating factors is that it allows users to change the background page. However, testers of Group 1, 2 responded that the function icon is not necessary to located at the main page because it disturbs users’ comfortable reading.

Fig. 11 (a) Main page, (b) Timeline home, (c) Example of alterable background color and images

4. Analysis of TweetList Application

TweetList App is the latest released third-party App among the preceding case analysis of Applications. Tweet List enhanced list management function, and has kept consistency to Official Twitter App’s visual design. Due to familiar design, users could utilize Tweet List without any problems.

On TweetList Timeline, users are able to see the articles Retweeted by their friends.

This is the differentiating factors from Official Twitter App. To easily identity and distinguish Retweeted articles from general ones, Tweet List displays a green Retweet icons as shown in the Figure 12 (a).

Fig. 12 (a) Examples of using icons to distinguish general articles and Retweeted articles, (b), (c) Example of flicking Timeline from left to right side (gesture to change the list)

The most important feature in the Timeline Home is that the user can preview the photos attached to the friend’s postings as shown in the Figure 12 (b). The small-sized photos will appear at the right side before clicking the article. It improves users’ reading efficiency since it allows users to skip the article if previewed photos are not attractive to them.

5. Analysis of Tweetbot Application

Tweetbot App’s Timeline font is bigger than other Apps. Some testers respond that overall space utilization of Tweetbot is convenient.

When the user try to Retweet or Favorite the Tweet in the Timeline Home by flicking the Tweet button, interface will appear under the original Tweet as shown in the Figure 13 (c). It does not cover the body and gives positive experience to users.

Same as Tweet List App, Tweetbot also provides preveiw attached photo service and this gave positive experience for first-time users as shown in the Figure 13 (b).

Overall, Group B users who mainly managing lists prefer using Tweetbot App. However, some testers point out that when the user tries to Follow the relevant user after reading the Retweeted article, the interface needed to be touched are too complex. In the case of other Apps, touch 1~2 buttons will lead the users to implement Following service, but testers took much more time to find Following Icon at Tweetbot App.

Among the 6 Apps, Tweetbot App has sound effect when users touch the tab to implement Retweet, Favorite actions. Some testers responded that this gave them the impression that the App is smarter but other testers responded that this is not the important factor in the usage of the Twitter.

Tab the Timeline located at the top of the main page, list of users will appear. Click on the appropriate list, then the user can see the writings by the list of users. There is little consistency to the Official Twitter App’s visual design, but it gave positive experience to testers.

Tweetbot App can customize some part of the main menu. Keep tapping for 0.5 seconds, customizable interface will appear. However, testers didn’t find out these interaction elements easily.

Fig. 13 (a) Tweetbot provides gesture interface information through speech bubble service when users only first install and enter the App (b) Timeline home (c) Example of Tapping Tweet

6. Analysis of Twitkr Application

When you send the mention at Twitkr, scrolling down to check the original article does not working. Some testers belong to Group 2 felt inconveniences.

Same as TwitBird App, Twitkr also allows users to write more than 140 characters. However, some testers responded that services allowing users to write longer than 140 characters are actions that violating the Twitter rules.

Some testers answered that they are using Twitkr when they want to attach two or more photos on posting. After attaching the photos, the counting is marked as shown in the Figure 14 (a).

The problem is that Quotation Retweet function is excluded, and only Retweet function is provided the Twitkr as shown in the Figure 14 (b). Quotation Retweet is not the official function of Twitter, but many users want to quote the original text when they Retweet it, so mobile Twitter App added such function to the original Retweet function. Twitkr didn't fully adopt these functions properly.

Twitkr's Search Tab is the simplest interface among the 6 Apps, and many testers preferred to use it as shown in the Figure 14 (c).

Fig. 14 (a) The number of attachments is marked, (b) Quotation Retweet function is excluded, (c) simplest interface of Search Tab

E. Analysis Result

The Table below shows comparative analysis on selected 6 mobile Twitter Applications according to 4 groups of analysis elements. Analysis on above mentioned 6 Apps, problems and solutions through interviews and differences among the groups are as follows:

1. Social Interaction Differences among the Groups

The case analysis didn't show noticeable differences between Group 1 and 2.

Most of the testers belong to Group 1 which has relatively less followers than Group 2 read almost all Tweets on the Timeline, and rarely used list function. Some testers prefer TwitBird App because it is easy to control the Timeline. Group 1 testers regard Tweet List, Tweetbot Apps as smarter ones, but they don't feel need to use them.

Among the Group 2 users who are using the list function, don't tend to control the Timeline or read all of them. Instead, they utilize Tweetbot, Tweet List Apps to manage the list. They prefer the functions which allow them to read friends' Tweet easily.

Analysis results show that relatively have more followers Group 2 users do more Retweet, Favorite actions, and both Group 1 and 2 don't prefer the additional services like Twitlonger which allows users to write text longer than 140 characters.

2. In the Case of Information format is complex

It is important to consider common users' experience of Official Twitter App when developer and designer organizing the information format of Application. It's better to make the format in a way that no needs additional studies to utilize it.

In the case of Tweetbot, there are 4 gesture interactions exist in the Timeline Home. Conversation window will pop up when scrolling from left to right side, Detail Tab will appear when flick from right to left side. Users' information will pop up clicking the profile picture and finally, interface drives Favorite, Retweet actions will appear just clicking the Tweet button.

3. In the Case of Gesture Interactions are Hidden and Needs Additional Learning

If the gesture interaction functions are hidden, information pages must be provided to the users. Gestures interactions to manage Direct Message and to check the original text while replying it are easily verified by simple flick gestures. But, most of the users have problems to find out such functions.

Users can view original text while reply to TweetList. Original text is exposed 0.5 seconds and gone up, so testers could easily notice that original text view function is located at the top of the screen. This is a good example of making better use of small mobile space.

Tweetbot App can customize the main menu. Keep tapping for 0.5 seconds, interface allows customizing menu will appear. These kinds of gesture interactions are difficult to find out intuitionally. However, Tweetbot provides gesture interface information through speech bubble service when users first install and enter the App.

TABLE VI
COMPARATIVE ANALYSIS ON 6 KINDS OF TWITTER APPLICATIONS ACCORDING TO FOUR ANALYSIS ELEMENTS

Group	Item		Twitter	Osfoora	TwitBrid	Tweetlist	Tweetbot	Twitkr
Function	Tweeting	Picture attachment Function	Only1 Picture	More pictures	Only1 picture	Only1 picture	Only1 picture	More pictures
		Positional information sharing function	Possible	Possible	Possible	Possible	Possible	Possible
		List editing function	No	Possible	Possible	Possible	Possible	No
		Function to compose long messages (more than 140 chracters)	No	No	Possible	Possible	No	Possible
		Usability of Reply function	Easy	Easy	Fine	Easy	Easy	Easy
	Quotation Retweet function		Possible	Possible	Possible	Possible	Possible	No
	Convenience and intuitiveness in gestures for Retweet and Favorite		Easy	Easy	Easy	Some confused	Easy	Easy
	Preciseness in funtion of gestures		Easy	Easy	Easy	Easy	Confused	Easy
	Viewable list straight from the timeline		No	No	No	Possible	Possible	No
	Sound effect		No	No	No	No	Possible	No
	Customizing user interface		No	No	No	Triple Tab, Manu	No	No
	Push(Alarm) setting function		Possible	No	Possible (Optional)	No	No	Possible (sometimes errors occurred)
Timeline (Reading Experience)	Picture preview attached to Tweet		No	No	No	Possible	Possible	No
	Alterable Font Size		Possible	Possible	Possible	Possible	Possible	Possible
	Alterable background color and image		No	Dark&Light Themes	Possible	Dark&Light Themes	No	No
	Marking unread tweet		Icon Color	Number, Tweet Color	Speech bubble Color, Number	Tweet Color	Icon Color, Information	Number
	The horizontal and vertical mode transitions		No	Possible	Possible	Possible	Possible	No
Social Interaction	Alarming when others RT my tweet.		Possible	No	No	Possible	Some confused	No
	Alarming when others make my tweet favorite		Possible	No	No	No	No	No
	Alarming when others followed me		Possible	No	No	No	No	No
	Improvement on searching function		Fine	Easy	Weak	Weak	Fine	Fine
Interface Design	Intuitional information of each icon		Fine	Fine	Some confused	Fine	Fine	Fine
	Consistency between the official application and visual design aspects		-	Fine	Different	Fine	Easy	Fine
	Confusion on initial screen at the beginning of application		Fine	Fine	Some confused	Fine	Fine	Easy

IV. Conclusion

Twitter's open ecosystem achieved the quantitative growth of Twitter services and enhanced the right function of SNS in terms of "diversity" and "relationship". In the past, mobile Twitter functioned as complementary services, but now it plays an important role and substituting the web services. This is because of the vast number of mobile users and the proportion of becoming a member of Twitter through mobile channel is continuously increasing.In the case of third-party Application, functions are almost reached the same level. In order to enhance the sharpening the competitiveness, it is significant to strengthen the usability. This is particularly important to the cases that develop and partial specialization of existing functions. This study examined the Third-Party Application market, and definition of Twitter App's functions. In this study, selected 6 Apps were examined in terms of UX design. In order to provide fresh and innovative user experiences to potential and existing users, it is important to reflect the elements mentioned in Chapter 3 constantly. Third-Party Applications are being developed continuously since uncomfortable and tedious experiences could make users to stop using the App.

This study is limited to IOS users. Blackberry and Android Applications might have different interface designs. More than 500 followers have been excluded from the study, so additional studies should be made to find out features of App users classified by the number of followers. Developed analysis elements in this study will be increasing its reliability through focus group interview on experts who have experiences on developing application. UX design elements studied in this paper will be helpful to mobile SNS application design development.

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