Facebook - WhatsApp Merger – A Revolution in the Social Networks


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Abstract— Online social networking provides users with powerful means of sharing, organizing, and finding content and contacts. The utility and rapid development of these sites provides an urge to study the characteristics and the utilization of online social networks at large scale. Understanding this analysis is important, in order to improve the current systems and to design new applications for online social networks. This article presents a user’s statistic study and analysis of the structure of social networks Facebook and WhatsApp, considering that Facebook's $19 billion buying WhatsApp making it the company's largest acquisition. WhatsApp a company having only 55 employees is the costliest buy ever in the software industry. The mission of this buy was to make the world more connected. Our data set contains over 2500 users using WhatsApp and Facebook, their need for usage of these networks, their satisfaction of needs through these social networks, the users who use these networks on the go. Further it explores the evolution of the social networks with deep analysis.

Index Term—Facebook, Whatsapp, Social networking, Messenger

I. INTRODUCTION

The urge of communication with people for personal as well as commercial use has given rise to the invention of websites which we call now as social networking services (SNSs)[1]. The SNSs had not only been a part of personal growth and had been a boon to IT industries, educational institutions, marketing and had sought the attention of everyone almost. There had been many kinds of SNSs since internet evolution[2]. Most of the SNSs are incorporated into a complete and coherent concept called the SNP (Social Networking Platform). The most popular SNPs are Facebook, LinkedIn, MySpace, Tumblr, Instagram, Google+ and Friendster. The differences in these SNPs had been in terms of how it pleases the user with GUI, privacy, structure, maintenance, technological affordances, supporting a wide range of interests and practices. Platforms also vary in the extent to which they integrate new information and communication tools, such as portable connectivity, blogging, photo/video-sharing, advertising and online gaming etc.

Recently there are two giant technologies, the Facebook and the WhatsApp Messenger had been ruling the industry with their distinct features where no other sites had gained this kind of popularity. Facebook is an online social networking service, which on its own is a trendsetter. WhatsApp Messenger is an owned, cross-platform instant messaging subscription service for smartphones[3-5].

On February 19, 2014, it had been on the headlines that Mark Zuckerberg and Jan Koum are tying up with a $19 billion business, which meant that Facebook had bought WhatsApp. There had been different views why Facebook had bought WhatsApp for a huge amount of money[6,7]. This study explores the features of these social networks with technical and end user point of view. The contribution of this paper is mainly answering the following topics.

- The necessity of WhatsApp tied up with Facebook.
- The features of both the technologies up to date.
- The key advantages and disadvantages of both the technologies.

The sample of the study consists of a group of people around 2500 who are using both Facebook and WhatsApp and also had installed many other applications in their smartphones.

II. HISTORY OF FACEBOOK

Mark Zuckerberg, in the year 2004 on February 4, with his peers Eduardo Saverin, Andrew McCollum, Dustin Moskovitz and Chris Hughes of Harvard University launched a website, which they would not have thought that would change the fortune of the meaning of social networking. The Facebook started on the campus of Harvard University, where Zuckerberg took psychology as his major. Within 24 hours of deployment, The Facebook became a commune of 1200 Harvard University students. The growth was tremendous and it stretched hands in the Yale and Stanford University and gradually to other universities[8][9]. Zuckerberg dreamt big that he wanted to install this little networking on all university campuses at America. After 4 months from Facebook’s birth, Mark had unfinished his course at Harvard and moved to Silicon Valley with McCollum and Dustin Moskovitz.

And now it required some big shot’s help to fetch some good amount of money for investment. There came Mr. Peter Thiel, founder of PayPal with an investment of $500,000 in Sep 2004. $500,000 investment was a little amount for Zuckerberg and friends had big plans for The Facebook. But now Mr. Jim Breyer and Accel Partners invested a sum of $12.7 million to back up Zuckerberg to bring it big, by seeing the values it had.
Jim Breyer was a big personality. He was the chair person of the National Venture Capital Association (NVCA) and now he is one among the Board of Directors of Walmart Stores Inc. Breyer also sits on the Board of BBN Technologies along with Anita Jones who previously held the position of Director of Defense Research and Engineering for the U.S. So now having the money and power to bring it out worldwide in the month of Oct 2004, beta testing started with the American universities[10-13]. And thus after one year of beta testing in the month of August 2005, Facebook was a registered website with an amount of $200,000.

Eventually Facebook was started and within months anyone with a legal institutional email address from over 30,000 organizations from the world was eligible for membership, including high school students, government employees and the corporate community. In September 2006, anyone with a legal email address could sign up with the details including the organization associated[14-17].

Infact, between May 2006 and May 2007 Facebook’s growth was upto 89%. It remained a closed network until May 2007, when Zuckerberg publicized that Facebook was to become the “social operating system for the Internet.”

Up until that time, the Facebook platform was for Facebook alone, but now, users could incorporate all of their Internet activities into their single Facebook profile. Developers rapidly started to build applications for all the popular sites and users started adding them. Websites such as Flickr, MySpace, iTunes, YouTube developed official applications and they brought them together in Facebook. Organizations started developing gaming applications and other utilities in Facebook. Then by August 2007, direct advertising was announced by Zuckerberg. And from then Zuckerberg grew big who still plays as a giant competition for Yahoo and many more[18].

III. HISTORY OF WHATSAPP

In January 2009, Jan Koum bought an iPhone and realized that the then seven-month-old App Store was about to spawn a whole new industry of apps. He visited his friend Alex Fischer to discuss creating a new app. Koum almost immediately chose the name WhatsApp because it sounded like “what’s up,” and a week later on his birthday, Feb. 24, 2009, he incorporated WhatsApp Inc. in California. Early WhatsApp, installed only by a handful of Koum’s friends, kept crashing or getting stuck. The following month Koum admitted to Acton that he should start looking for a job. Acton persuaded him to continue with WhatsApp.

In June 2009, Apple launched push notifications, letting developers ping users when they were not using an app. Koum updated WhatsApp so that each time you changed your status it would ping everyone in the user’s network. WhatsApp 2.0 was released with a messaging component and the active users suddenly swelled to 250,000. Koum visited Acton, who was still unemployed while managing the unsuccessful start up, and decided to join the company. In October Acton persuaded five ex-Yahoo friends to invest $250,000 in seed funding, and as a result was granted co-founder status and a stake. He officially joined on November 1. Koum then hired an old friend who lived in Los Angeles, Chris Peiffer, to make the BlackBerry version of WhatsApp[19-22].

WhatsApp was switched from a free to paid service to avoid growing too fast, mainly because the primary cost was sending verification texts to users. In December 2009 WhatsApp for the iPhone was updated to send photos. By early 2011, WhatsApp was in the top 20 of all apps in the U.S. App Store. The founders agreed to take $8 million from Sequoia Capital on top of their $250,000 seed funding, after months of negotiation with Sequoia partner Jim Goetz. By Feb. 2013, WhatsApp’s user base had swelled to about 200 million active users and its staff to 50. Sequoia invested another $50 million, valuing WhatsApp at $1.5 billion. On Feb. 19, 2014, Facebook acquired WhatsApp for $19 billion[22-25]. Figure 1 shows the extraordinary growth in users.

![WhatsApp Growth in Users](image)

Fig. 1. WhatsApp Growth in Users
IV. SWOT (STRENGTH WEAKNESS OPPORTUNITIES THREATS) ANALYSIS OF FACEBOOK

A. Strengths
   1. Combination with other websites and applications
      To enhance user experience and engage more users to use Facebook, the social network has launched many features that would allow closer integration with other websites and producers of applications that dart via Facebook.
   2. Outstanding user’s experience
      Facebook has a simple to use interface, is integrated with many website, can attach people through PC or mobile devices, is translated into more than 70 languages and has many more additional features that lack other social networks.

B. Weaknesses
   1. Social network lacks of some features
      Even though Facebook has a broad range of features that other social networks don’t, the website still lacks: video chats, group chats, dislike buttons, ability to unsubscribe from alerts and many others.
   2. Attitude towards user’s privacy
      Facebook collects private user’s information and then stores it and uses it for its own purposes or sells it. Such usage of users’ private information draws pessimistic consideration that decreases popularity of Facebook.

C. Opportunities
   1. Rising number of people using Facebook with mobile devices
      Presently Facebook has more than 600 million users who use Facebook through mobile devices. Although this group makes 60% of all Facebook users, the mobile promotion only accounts for only 14% income for the company. Facebook has an opportunity to form a platform that could be used to exhibit ads for mobile users and increase firm’s income.
   2. Broaden the horizons of revenue
      Facebook heavily relies on promotion on its social network as a source of returns, but with being the number of website in the world and more than 1 billion active monthly users, Facebook could utilize other opportunities to attract the money.

D. Threats
   1. Individuality thefts
      Even today, identity thefts are ordinary in Facebook. The more identities are stolen the more denigration Facebook will receive strongly harm its brand for inability to protect user’s confidential information.
   2. Weak business model
      Facebook’s aim is to draw social network users, show the ads for them and charge the businesses for the ads displayed. Although Facebook’s business model looks sound for an occasion, the company faces severe difficulties if some circumstances change that are not in firm’s control. For example, slowing expansion of online advertising, new social network, budge from advertising on Facebook to other websites, rising number of mobile users or failure to diversify source of income.

V. SWOT ANALYSIS OF WHATSAPP

A. Strengths
   1. Market share leadership
      High levels of competition among suppliers reduces the prices to producers. This is a encouraging fact for WhatsApp. “High Competition among suppliers” has a important impact. So an analyst should put more weight into it. This statement will have a short term positive impact on its entity, which adds to its value.
   2. Cross Platform
      WhatsApp Messenger works on various platforms and number of devices, no matter iPhone, BlackBerry, Android, Nokia S60.

B. Weakness
   1. Less Identity Preservation
      Your profile picture is visible to every person having your contact number and using this app, whether known by you or not.
   2. Need of Internet
      You must have access to internet to send and receive messages for free and the messages are also not sent to the phone inbox. Only works with a data plan or WiFi.

C. Opportunities
   1. Personalized Interface – Whatsapp interface is quite simple and easy to handle. Whatsapp launches updates regularly to make its interface more appealing and user friendly but generally its interface depends on type of platform who are using.
   2. Less Bandwidth Consumption after Downloading- With just texting option, whatsapp does not take much bandwidth. Only downloading may compel it to use high network charges, but if you are texting only, then whatsapp takes very less bandwidth.

D. Threats
   1. Fast industry growth rate lead to product substitution
      When industries are growing revenue quickly, they are more likely to battle, because the total industry size is also growing. The only way to grow in slow growth industries is to steal market-share from competitors.
   2. Related applications and free
      WhatsApp takes a subscription fee of 0.99$ per year after 1 year of trial usage. Whereas the competitors are free.
VI. STATISTICAL ANALYSIS

A survey was conducted with 2500 people who have been using both Facebook and WhatsApp. The people were between the age group 15 to 60. They were of both genders, both working and students. A questionnaire sort of sheet was prepared and the results are tabulated. The scores are rated between 0 to 10 scale. The comparison is split up into three broad categories:

1) Utility Features
2) Communication Features
3) End User Usage

A. Utility Features

The utility features of Facebook and WhatsApp are analysed and tabulated in Table I.

<table>
<thead>
<tr>
<th>Utility Features</th>
<th>Facebook</th>
<th>WhatsApp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo share</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Comment and following</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Video share</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Privacy</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Offline mode</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>User friendly</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Groups</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>User interface</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53</strong></td>
<td><strong>67</strong></td>
</tr>
</tbody>
</table>

Fig. 2 shows us a statistical comparison of the utility features of the two social networking sites. The main feature photo share is almost same in both Facebook and WhatsApp both has good compression features. Both Facebook and WhatsApp uses lossy compression. WhatsApp uses some image optimization features to display the image according to the display since WhatsApp is mainly employed in mobile environment. In comment and following Facebook has a higher rating since it employs features to share and like. Also it has many privacy features. Video share is a feature in which WhatsApp stands tall because it has good compression features. We can also add the location and people involved in that video to make it livelier. In privacy also WhatsApp heads because of the fact that person has to know the friends mobile number to add him/her as a friend but the privacy in Facebook is a bit less.

While uploading a video WhatsApp automatically optimizes it for web by optimizing its resolution according to the device and bandwidth. Also it has features for a rotation. In offline mode WhatsApp has many features to notify the user that a message is received. But Facebook has not adapted to work in offline mode. The group creation and user interface also WhatsApp stands tall.

B. Communication Features

The utility features of Facebook and WhatsApp are analysed and tabulated in Table II.

Fig. 2. Utility Features: Facebook Vs WhatsApp
Table II
Communication features analysis

<table>
<thead>
<tr>
<th>Communication Features</th>
<th>Facebook</th>
<th>Whatsapp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice call</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Video call</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Tracking sent message</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Fig. 3. Communication Features: Facebook Vs Whatsapp

This shows the in-depth analysis of communication features in Facebook and Whatsapp. There is an even distribution of polls in the communication features of Whatsapp and Facebook. In voice message, Whatsapp stands apart, there is no provision in sharing voice messages in Facebook. Voice call is introduced in Whatsapp after the acquisition of Facebook.

In tracking sent message also, Whatsapp provides innovative stats to check the status of our sent messages and the location of the user. A dual tick mark is a convention used to notify the user the status of the sent message, one tick refers to the message is successfully delivered to the server and the two tick refers to that the message is delivered to the sender.

C. End User usage Features

The End User usage features of Facebook and Whatsapp are analysed and tabulated in Table III.

Table III
End User Usage features analysis

<table>
<thead>
<tr>
<th>End User Usage</th>
<th>Facebook</th>
<th>Whatsapp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Job search</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Entertainment</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>gaming</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Social context</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Event management</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Online promotion</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>
End user usage analysis is shown in Fig. 4. In the end user context Facebook clearly stands apart. Till date WhatsApp has provided features only for messaging and photo sharing. In the job search Facebook provides many facilities to search the employers have an interaction with them. The organization’s group can be joined and an interaction could be made with the people of the organization. In event management Facebook has an application to manage events, remind birthdays etc. The other main income of Facebook is the online promotion. The new technology of caching has provided an efficient means to analyse the user’s preference and display ads based on it. With these features Facebook stands apart in the end user usage.

VII. FURTHER OBSERVATIONS

A. Age wise utilization of Facebook and WhatsApp.
Table 4 provides the utilization percentage of Facebook and WhatsApp customer.

<table>
<thead>
<tr>
<th>Age</th>
<th>Facebook</th>
<th>WhatsApp</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 to 23</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>24 to 40</td>
<td>20%</td>
<td>24%</td>
</tr>
<tr>
<td>41 to 55</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>56 to 64</td>
<td>21%</td>
<td>19%</td>
</tr>
<tr>
<td>65+</td>
<td>14%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Fig. 5. shows the age classification of the users of WhatsApp and Facebook. The Usage ratio of ages 15 to 40 is almost the same. But the older ages tend to use Facebook more than WhatsApp because of several reasons. Voice call and video call is not developed in a good extent whatsapp the older people tend to use the communicational features rather than normal surfing. With the inclusion of these features whatsapp will move to greater heights.

B. Effect of Facebook and WhatsApp Merger

Fig. 6. Effect of Facebook and WhatsApp Merger

Fig. 6 shows the effect caused by the merger of Facebook and WhatsApp from the customer point of view. From the diagram we can clearly understand the positive effect created by the merger. Especially number of customer using facebook now increased hugely. Overall customer satisfaction, bandwidth optimisation and security features also boosted.

VIII. Conclusion

WhatsApp is a great application that offers various benifits to the customer. It provides the best features that an internet messaging application can provide to us. With that, we can easily send enough unrestricted messages to your Whatsapp friends. Facebook too provides excellent communication...
features and social feeds. The timeline, likes and remainders are the standout features of Facebook. Facebook could have been even better, if the app would have provided you with the facility to send unlimited messages throughout the country or world for free to any number. From our analysis we find that Facebook and WhatsApp have equally good facilities before the merge except that WhatsApp does not have audio and video calling which requires more bandwidth and technical support. By this merge it paves way to introduce those features. Also, the end user utility features like organizers, job search are yet to be developed in Whatsapp. The elder people are yet to get accustomed to Whatsapp. From our statistical analysis we found that, by this acquisition of WhatsApp, Facebook stands sky high.

REFERENCES