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STRATEGIC ANALYSIS AND SECURITY ISSUES OF SOCIAL MEDIA SERVICES: A STUDY OF FACEBOOK

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Abstract: Social media is playing a prominent part in people's lives now-a-days. Facebook, YouTube, Instagram, Google+ etc. have emerged as the popular social media websites. Since its inception in 2004, Facebook has emerged as the most popular social media website. In this research, strategic analysis of most popular services provided by Facebook was carried out by using BCG matrix. The data of relative market share and market growth rate was used to plot bubble chart in Microsoft Excel. The analysis using BCG matrix shows that Facebook should minimize its investments in internet advertisements and instead increase its investment in mobile advertisements. Facebook should try to hold its position in the games segment and rebrand its gifts segment. In order to provide its services effectively, security issues faced by Facebook should be effectively managed. The security issues faced by Facebook include privacy, information sharing with third parties, identity theft and children security. In this research, model has been proposed to manage the security issues faced by Facebook.

Keywords: Social media, BCG matrix, strategic analysis, security issues

1.0 Introduction

Since their inception, social media websites like Facebook, Twitter, LinkedIn, YouTube etc. have played an increasingly widespread role in day-to-day social interactions. They also attracted billions of registered users. Currently there are around two hundred social media websites across various cultures and geographical locations (Boyd and Ellison, 2007). The structure of social media is the same for most of the sites but the way they connect people is different. Some sites connect on the basis of political views, and others based on shared interests like entertainment, religion, sport etc. (Boyd and Ellison, 2007). Social media websites differ in the level to which they include new information, like blogging, mobile connectivity, and photo and/or video-sharing. In general, social media websites permit users to introduce themselves, set up or maintain communication with their friends and followers, and allow them to communicate effectively.

Social media has outstripped TV as a source of news for young people. A study by the Reuters Institute for the Study of Journalism research shows that 51% of people with online access use social media as a news source. (Wakefield, 2016). This shows the immense popularity gained by social media.

In this study, strategies for the services that can be offered by the most popular social media websites will be analyzed.

2.0 Objectives of Study

The objectives of this study are:

- Identify the most popular social media website.
- Conduct strategic analysis on the major services provided by the most popular social media website.
- Propose a model to handle the security issues faced by social media websites.

3.0 Popular Social Media

The first identifiable social media website was SixDegrees.com that opened in 1997 (Boyd and Ellison, 2007). Between 1997 and 2006, a number of social media websites were launched. The most popular social media websites and their launch time is given in Table 1 below:

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Table 1: Social Media Launch Time

Social Media	Launch Time
Facebook	February, 2004
YouTube	May, 2005
Instagram	October, 2010
Google+	June, 2011
Twitter	March, 2006
Snapchat	July, 2011
Pinterest	March, 2010
LinkedIn	May, 2003

Source: The Social Media Hat (2017)

Based on the active list of users, the social media websites are listed in Table 2 as follows:

Social Media	Users	Reported Time
Facebook	1.86 Billion	December, 2016
YouTube	1 Billion	March, 2013
Instagram	700 Million	April, 2017
Google+	540 Million	October, 2013
Twitter	328 Million	April, 2017
Snapchat	301 Million	September, 2016
Pinterest	175 Million	April, 2017
LinkedIn	106 Million	April, 2016

Table 2: Active Users on Social Media

Source: The Social Media Hat (2017)

So from **Table 2**, it can be inferred that Facebook currently is the most popular social media website.

In 1997, a study titled "The Internet Advertising Report" examined the adaptation rate of Internet compared to the three traditional media: radio, network television, and cable television (Meeker 1997). Meeker examined the length of time it took for each media to reach 50 million U.S. users. The length of time it took for Internet to reach 50 million users was 5 years, which is remarkable considering that it took radio 38 years, network television 13 years, and cable television 10 years. In contrast, it took Facebook 3.5 years to reach 50 million users (Kamath, 2015).

Since Facebook it the most popular social media and it reached popularity in a short amount of time, so it has been selected for strategic analysis of its services.

4.0 Strategic Analysis of Facebook

First, I am going to examine the revenues generated by the major social networking websites through their major services. I am also going to examine the forecast of revenues for the major social media for 2018 and find out the growth per year. For this purpose; Facebook, YouTube and Instagram are selected (Table 2). The revenues and their analysis is done using Microsoft Excel. It is shown in Table 3.

Companies	Advertisements	Mobile Advt.	Games	Gifts
Facebook	4.50	1.35	0.70	0.65
YouTube	1.40	0.32	0.00	0.00
Instagram	0.58	0.23	0.10	0.05
Total 2016	6.48	1.89	0.80	0.70

Table 3: Revenues Generated by Social Media

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Companies		Advertisements		Mobile Advt.	Games	Gifts
Forecast 2018		12.21		4.5	2.5	1

54%

77%

20%

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37%

From **Table 3**, it is possible to find out the relative market share and market growth rate. This information is used to plot the Boston Consulting group's product portfolio matrix (BCG) matrix. The BCG matrix is platted in Microsoft Excel using Bubble chart.



The plotted BCG Matrix is shown in **Figure 1**.

Figure 1: BCG Matrix for Facebook

In **Figure 1**, relative market share is shown on the horizontal axis and market growth rate is shown on the vertical axis. Relative market share ranges from high (left side) to low (right side). Market growth rate ranges from low (bottom side) to high (top side). The size of the circle shows the relative market share of Facebook services. The major services offered by Facebook has been categorized into cash cow, star, question mark and dog (Bhasin, 2016). It is explained below:

- The biggest bubble belongs to internet advertisements. The market growth rate of advertisements is 37%. Internet advertisements comes under BCG matrix cash cow quadrant.
- Attached to the bubble of advertisements is mobile advertisements. This has a market growth rate of 54%. Mobile advertisements belongs to BCG matrix star quadrant.
- The third circle is games. It has a market growth rate of 77%. Games comes under BCG matrix question mark quadrant.
- The last circle on the right hand side is gifts. It has a market growth rate of 20%. Gifts belongs to BCG matrix dog quadrant.

Based on the plotted BCG matrix, the analysis is carried out of the major services of Facebook in each of the 4 quadrants. It is given below:

4.1. Advertisements (Cash Cow)

Growth / Year

Advertisements on Facebook belong to cash cow quadrant of BCG matrix. It has a high relative market share but low market growth rate. So, it is most profitable (Bhasin, 2016).

Advertisement runs most of websites across the world. That is the big secret behind Facebook's escalating revenue. If user opens his Facebook profile, he will see that the right hand side of the page is full of advertisements. User can give the thumbs up to the advertisement or the thumbs down. The thumbs down will remove the advertisement and it will not come back.

Facebook uses web data mining to determine the advertisement taste of customers. It also remembers the browsing history and previous preferences of users. Like the Google AdSense, Facebook too provides advertisements to the user web-pages based on the interests and the overall profile of the user. So, if user mentions in his profile that he are a fan of Nike or any other sportswear brand, the related advertisements will appear on the right hand side of the

Note: All revenues are showed in Billion USD

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page for companies and websites selling them. Facebook advertisements are not intrusive and hence, people do not get annoyed with them.

Moreover, the advertisement system of Facebook is based on intelligent analytics. So, it makes sure that the right advertisement is displayed to the right customer, since the advertisements are selected for an individual page based on the interests and likes of the user. This avoids unnecessary waste of advertisement space on the page where the chances of the advertisement being 'hit' are theoretically pretty low. Also, the advertisement system gives the user a 'thumbs down' option, which ensures that the particular advertisement does not appear again. This ensures that the users do not get annoyed by the advertisements.

The recommended strategy for cash cows is harvest (Martin, 2017). This means that the investments by Facebook in the advertisements should be minimized. Facebook should try to take out the maximum cash flow from this service. This will increase the overall profitability of Facebook.

4.2. Mobile Advertisements (Star)

Mobile advertisements on Facebook appears in star quadrant of BCG matrix. It has a high relative market share and high market growth rate. It faces high competition (Bhasin, 2016). Most of the competition it faces is from Google (Griffith, 2016).

The recommended strategy for stars is build (Martin, 2017). Facebook should increase its investment in mobile advertisements to increase its market share. This would lead to profits from mobile advertisements in the long run.

4.3. Games (Question Mark)

Games on Facebook comes under question mark quadrant of BCG matrix. Facebook has a low relative market share in Games but the market growth rate is high. This represents a position of uncertainty (Bhasin, 2016).

Non-advertising revenue on Facebook comes from payments for games on its website, mostly for games made by Zynga. This social media game development company is responsible for games such as CityVille, FarmVille, Empires & Allies and ZyngaPoker (Zigna, 2017).

One of the most popular Facebook games is FarmVille. It allows users to harvest a virtual farm by planting and growing crops and trees, and buying livestock. Gamers are given virtual coins to set up their farm and they earn more from matured crops. But gamers who are eager to progress through the game can buy extra virtual coins with real money (Facebook, 2017).

Facebook takes a 30% cut of Zynga's revenue and a roughly similar cut from other companies (Facebook, 2017).

The recommended strategy for question marks is hold (Martin, 2017). So, Facebook should hold its position in the Games. It should try to acquire new customers to convert games into a star.

4.4. Gifts (Dog)

Gifts on Facebook belong to dog quadrant of BCG matrix. It has a low relative market share and low market growth rate. So, it is less profitable (Bhasin, 2016).

Facebook provides the feature of gifts to wish family and friends on special occasions. Some of the gifts are free and some are paid gifts. All the money generated by paid gifts almost always goes to Facebook, but if the gift is provided by a partnering company, then a portion of it goes there. At the cost of \$1 for each gift, Facebook Virtual Gift shop generates revenues of \$200 million every year (Facebook, 2017). However, not all the earned money goes to Facebook alone. It has to be shared with the providers of gifts. Facebook also donates money from gifts to various charities around the world. For instance, during the Haiti crisis, Facebook offered users an opportunity to buy gifts which would directly benefit the victims of the Haiti tragedy (Calderón, 2010).

The recommended strategy for dogs is divestment or rebranding (Bhasin, 2016). While rebranding, the company should consider the amount of investment done in the service. Facebook has not incurred much investment for gifts and they can also be easily developed. So, it is desirable for Facebook to rebrand the gifts. So, Facebook should innovate in the gifts and add features to them.

5.0 Security Issues of Social Media

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In order for online media like Facebook to be successful and offer its services effectively, it needs to manage the security issues (Singh and Agarwal, 2011; Singh and Grover, 2011). The above mentioned services of advertisements, mobile advertisements, games and gifts cannot be provided if people cannot trust Facebook to provide reliable and secure services. The security issues of online mediums like Facebook include privacy, information sharing with third parties, identity theft and children security (CBSNEWS, 2010; Singh et al., 2011; Sabur, 2017). These issues can be critical for organizations that encourage the use of Facebook at workplace and for the parents to manage their children.

Facebook requires that children should be at-least 13 years of age before using Facebook (Facebook Help, 2017). The age of the user is verified through the registered email by Facebook. However, 13 years old child is not mature enough. Moreover, parents still worry about their children well-being even if they are above 13 years of age.

I am proposing a model to minimize such organizational and children's security issues. The proposed model is given in Figure 2.



Figure 2: Proposed Security Model

The proposed security model consists of:

- Administrator Social media websites like Facebook need to allow administrators to manage users accounts. The administrators can set and manage the accounts for intended use, and filter their contents. The administrators could be appointed by organizations, schools or could even be parents.
- Users The users are allowed by administrators to operate the accounts. The users could be employees working in organizations or children studying in schools.
- Features- These are the services that are allowed to users by the administrators.

The proposed model operates like an intranet structure. The administrators will control the intranet on the social media websites like Facebook and users can access all the features on the social media unless they are restricted for them.

6.0 Conclusions

This research shows us that Facebook has emerged as the most popular social media website in a short amount of time. The strategic analysis of Facebook major services has been carried out using BCG matrix.

The analysis of BCG matrix shows that internet advertisements done by Facebook comes under cash cow quadrant. So, Facebook should minimize its investment in advertisements. The mobile advertisements belongs to star quadrant of BCG matrix. So, Facebook should compete effectively and increase its investments in mobile advertisements. The games offered by Facebook belong to question mark quadrant. So, Facebook should hold its position in the games and should try to acquire new customers. The gifts offered by Facebook belongs to dog quadrant of BCG matrix. So, Facebook should try to rebrand the gifts and add features to them.

Security remains central to provide services to customers on the social media. So, Facebook should try to address the security concerns related to privacy, information sharing with third parties, identity theft and children's security. A model has been proposed to address the security concerns faced by social media. The model proposes a three layered architecture consisting of administrator, users and features to that can be provided to the users. The features that can compromise the security of the social media platform can be restricted by the administrator to the selected or all users.

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