Performance Analysis of a Facebook event for HIV/AIDS Prevention – The 2012 "Creature Detector" example

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Abstract

According to statistics from Taiwan Centers for Disease Control (Taiwan CDC), 15-24 year olds have shown an increase of new HIV infections in the recent years. Due to the fact that the main risk factor of the infected persons is sexual behavior, this shows that "unsafe sex" is the main reason behind the increase in infected persons and the drop in infected age; this group is also the main social network user. Therefore, the Taiwan CDC set the young age group as the targeted audience, and set up the "1922 Epidemic Prevention Experts" Facebook page, and promoted the "Creature Detector" **HIV/AIDS** prevention event during the summer vacation of 2012 from June 22 to August 28. A total of 14,153 users participated in this event with an average of 2 logins per person, most on Wednesdays and after office/class hours. This event increased 18,670 fans of "1922 Epidemic Prevention Experts" Facebook page. Of the newly-joined fans, male (63.0%) exceeded female, with the most from the 13-24 year age group (52.1%). Cross-analyzing age and gender, male fans growth from all age groups also exceed those of females, with the highest growth rate being male fans between 13-17 years of age (1,582.9%). During the event, "Talking about this" on the page increased from 180 persons every day to 900, showing an eightfold increase. The results of the event show, aiming at target groups in designing suitable web events can contact with high risk subjects and change the formation of the fan page; in addition, this event also allows us to understand how to manage a Facebook fan page. In the future, the best timing for posts and event promotion will be used for the spreading of information and shares to enhance the effectiveness of the promotion.

Keywords: Facebook, HIV/AIDS, Facebook event

Introduction

According to Taiwan Centers for Disease Control (Taiwan CDC) statistics data, as of September 2013, the cumulative number of reported HIV infections totaled 25,954; those between 15 to 24 years of age totaled to 5,178, taking up approximately 20% of the whole infected number. Analyzing those HIV infected persons during 2010 to September 2013, a total of 2,109 persons were 15-24 year olds, taking up 27.4% of the total infected numbers (7,704 persons), showing a gradual increase of infected persons in the recent years. Sexual behavior is the main risk factor for those infected (72.3%) which show that unsafe sex is the main reason of HIV transmission which has lead to the increase in infected numbers and decrease in infected age [1].

Analyzing the “unsafe sex” risk factor among HIV infections, the highest ratio is same-sex sexual behavior (44.1%) [1]. Foreign studies indicated that who seek sexual partners through the internet are mostly male, sexual behavior of homosexual, has contracted with sexual transmitted diseases (STDS), have multiple sexual partners, partners have infected HIV, or not using condoms[2, 3]. Approximately 35% to 40% of homosexual men have sought out sexual partners through the internet[4, 5]. In addition, many issues unable to be discussed publicly, or information about dating or drug-using sex parties, can draw attention and discussion due to the amenity and private nature of the internet; therefore, domestic scholars have pointed out that to focus on teen HIV/AIDS prevention education, teen education websites, online game sites or homosexual group sites should interconnect with one another to let the younger age group of internet users to easily receive and search for correct HIV/AIDS prevention information [6].

Facebook is a social network site which has risen up in the recent years. Due to its customary, contact, sharing, and chat functions, more and more corporations are using fan pages to connect with users and deliver and share information. According to the Check Facebook website statistic data, as of October 30, 2013, Taiwan Facebook accounts reached 15 million, among this, users aged between 13 and 24 exceeded 5.2 million (approximately 34.7%), placing second in all age groups [7]. Male and female ratio is balanced (both at 50.0%), showing Facebook’s significant influence on social networking communication between young people and daily life. Additionally, domestic broadband network usage report shows that most network users are below 44 years of age, among which users between 20-24 years of age stand with the highest ratio; the main usage reason is “my friends use it, so I do, too”, showing peer influence. Users below 34 years of age are the main online game users with those between 12-19 years of age as the largest group, with more males than females [8].

Through a social network medium, information can be shared and posted extensively within a social network to elevate public contact with organizational messages; Taiwan emergency departments even use the power of social networks to elevate emergency policy awareness [9]. It is also proven that within homosexual social networks, conduction of HIV/AIDS and STD prevention and intervention measures is possible and is considered a suitable domain [10]. Furthermore, studies show that health education through the media can lead to effective change in health behavior and reduce the risk of disease contraction or even death; Internet media have gradually become an important promotion approach [11].

During the H1N1 epidemic period in 2009, the Taiwan CDC established the “1922 Epidemic Prevention Experts” Facebook page and formally entered internet social networking promotion, which is a new approach to epidemic prevention. Currently, apart from providing HIV/AIDS prevention promotion information, non-scheduled events are also held to draw attention of younger age groups to epidemic prevention issues. This report uses the “Creature Detector” Facebook HIV/AIDS prevention web event held in 2012 to provide operational experience and effects and to bring forward opinions and advice towards health propagation through social network media.

Materials and Methods

A. "Creature Detector" Fackbook event for HIV/AIDS Prevention

Using the fact that younger age groups like internet social networks and online games, as of June 22 to August 28, 2012 during the summer vacation, Taiwan CDC held this event on the "1922 Epidemic Prevention Experts" Facebook page, assisted by a company in designing a web application in testing internet users and their friends what kind of "Creature" they are. Safe sex propaganda information was also implemented into the application. To attend the event, a user must first become a "1922 Epidemic Prevention Experts" Facebook page fan. The event uses the fun aspect of games, lucky drawings, and the fact that internet users like to share, in addition with the advertisement effect, through the power of internet broadcasting, to draw the attention and participation of internet users. In the meantime, correct HIV/AIDS prevention information is conveyed. Six stages of Facebook advertisements were promoted from July 2, 2012.

B. Data collection and analysis

Data came mainly from two sources, the online game application secondary data and "1922 Epidemic Prevention Experts" Facebook page management statistics. When obtaining online game application data, personal information of the participants such as names and usernames, birth dates, and phone numbers were eliminated; statistics collected from Facebook management sever were all secondary data. The data collected were input into Excel database and analyzed using Epi info software.

Results

A. Participant data analysis

Analysis of online game application data showed a total of 14,153 online participants with 26,917 event web page login times. Analyzing the login times, most participants joined in August (51.2%) and on Wednesdays (20.2%), followed by Tuesdays (15.6%) and Saturdays (15.4%); participation time was mostly during the night between 9-11 p.m. (21.6%), followed by evening hours between 6-8 p.m. (Table 1).

Table 1. Analysis of "Creature Detector" Facebook event login times between June 22, 2012 and August 28, 2012

Variables	Logins (%)	Variables	Logins (%)
Total	**26,917**		
Participant date		**Participant time**	
Monday	3,347 (12.4)	12-2 a.m.	2,300 (8.5)
Tuesday	4,201 (15.6)	3-5 a.m.	447 (1.7)
Wednesday	5,446 (20.2)	6-8 a.m.	1,244(4.6)
Thursday	3,491 (13.0)	9-11 a.m.	3,699(13.7)
Friday	3,589 (13.3)	12-14 p.m.	3,552(13.2)
Saturday	4,145 (15.4)	15-17 p.m.	4,472(16.6)
Sunday	2,698 (10.0)	18-20 p.m.	5,383(20.2)
		21-23 p.m.	5,820(21.6)

B. Event effectiveness analysis

"1922 Epidemic Prevention Experts" Facebook management statistics were used for analysis.

1. Number of fans

Before the event (shown by the number on June 21, 2012), the number of fans totaled to 17,983. Since July 2, 2012, six stages of online advertisements had been promoted to attract more fans. As of August 31, 2012, the number of fans reached 36,653, showing an increase of 18,670 fans, growth doubling by 103.8%. The highest fan number growth rate on a single day reached its highest on July 2, followed by wave increases which accompanied the advertisements. Data also shows, those fans who joined after clicking on the advertisements took up approximately 45% (Figure 1) of the total increased number. The newly joined fans were mostly made up of males (63.0%). More than half (52.1%) aged between 13 and 24 years of age showed the highest growth rate (205.9%) (Table 2).

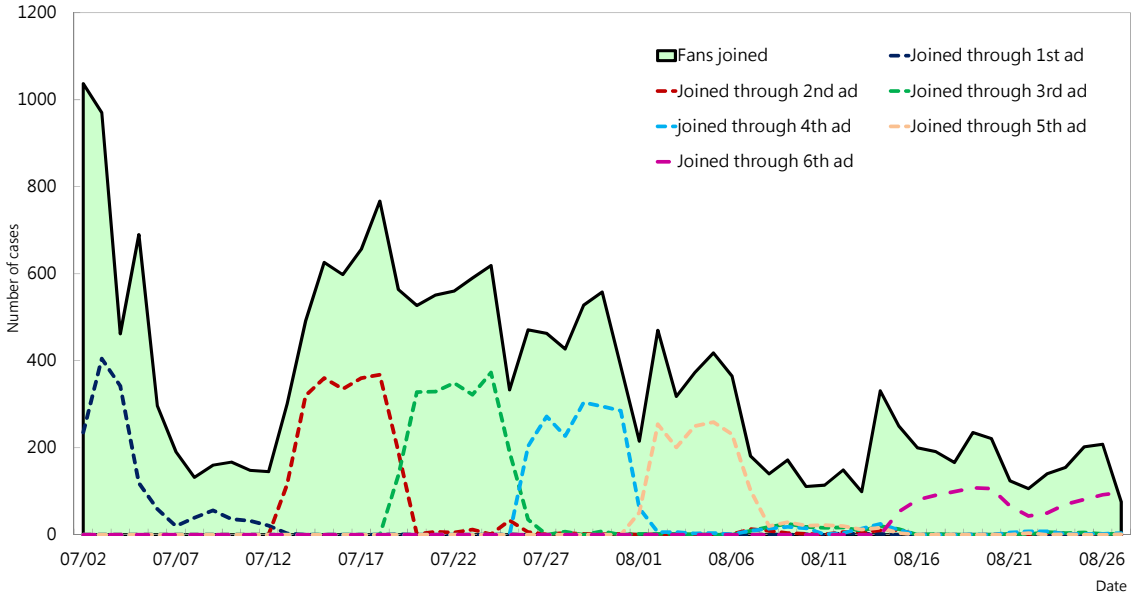

Figure 1. "Creature Detector" Facebook event advertisement stages and fans joined between July-August, 2012.

2. Formation of fan group

By analyzing gender, before the event, female fan members (56.2%) exceeded male fan members (43.2%); after the event, male members (53.3%) exceeded female members (46.3%). Male fan member growth rate reached to151.3%, this change shows significant difference (Table 2).

Analyzing age, we can see that before the event, the fan members were made up of mostly 25-34 years of age (45.4%) and > 35 years of age (28.3%), followed by the younger age group between 13-24 (26.2%); after the event, 25-34 year age group (36.4%) and > 35 year age group (24.1%) ratio was lower than that before the event, yet the 13-24 year age group ratio increased to 39.5% after the event, showing a growth rate of 205.9%, and is the highest in all age groups. This change shows significant difference (Table 2).

Further analysis of age and gender shows that after the event, male fan members of all age groups had a higher growth rate than those of female members; among which 13-17 year age group male fans had the highest growth rate (1,582.9%), followed by 18-24 year age group (174.2%). Among female fan members, 13-17 year age group show the highest growth rate (935.9%) followed by > 55 year age group (106.1%). Other age groups, 13-17 , 18-24 , 25-34 , and 35-44 , all show significant difference before and after the event (Table 2).

Table 2. "Creature Detector" Facebook event advertisement stages and fans joined between July-August, 2012.

Variable	Before event (6/21) n(%)	After event (8/31) n(%)	p-value	Increase number n(%)	Growth rate (%)
Total	**17,983**	**36,653**		**18,670**	**103.8**
Gender			**<0.0001**		
Female	**10,114(56.2)**	**16,982(46.3)**		**6,868(36.8)**	**67.9**
Male	**7,776(43.2)**	**19,543(53.3)**		**11,767(63.0)**	**151.3**
Unknown	**93(0.5)**	**128(0.3)**		**35(0.2)**	**37.6**
Age/Gender					
13-24 years	**4,729(26.2)**	**14,465(39.5)**	**<0.0001**	**9,736(52.1)**	**205.9**
Female	2,490(52.6)	5,706(39.4)		3,216(33.0)	129.1
Male	2,220(46.9)	8,721(60.3)		6,501(66.8)	292.8
13-17 years	385	5,173	<0.0001	4,788	1243.6
Female	195(50.6)	2,020(39.0)		1,825(38.1)	935.9
Male	187(48.6)	3,147(60.8)		2,960(61.8)	1582.9
18-24 years	4,344	9,292	<0.0001	4,948	113.9
Female	2,295(52.8)	3,686(39.7)		1,391(28.1)	60.6
Male	2,033(46.8)	5,574(60.0)		3,541(71.6)	174.2
25-34 years	**8,167(45.4)**	**13,335(36.4)**	**<0.0001**	**5,168(27.7)**	**63.3**
Female	4,842(59.3)	6,794(50.9)		1,952(37.8)	40.3
Male	3,274(40.1)	6,483(48.6)		3,209(62.1)	98.0
35-44 years	**3,867(21.5)**	**6,498(17.7)**	**<0.0001**	**2,631(14.1)**	**68.0**
Female	2,149(55.6)	3,312(51.0)		1,163(44.2)	54.1
Male	1,703(44.0)	3,163(48.7)		1,460(55.5)	85.7
45-54 years	**835(4.6)**	**1,558(4.3)**	**0.12**	**723(3.9)**	**86.6**
Female	437(52.3)	766(49.2)		329(45.5)	75.3
Male	393(47.1)	786(50.4)		393(54.4)	100.0
55+ years	**385(2.1)**	**797(2.2)**	**0.89**	**412(2.2)**	**107.0**
Female	196(50.9)	404(50.7)		208(50.5)	106.1
Male	186(48.3)	390(48.9)		204(49.5)	109.7

3. The Facebook page of “Talking about this”

“Talking about this” indicates the non-cumulative number of visitors “likes”, comments, and shares towards certain posts; these can create discussion topics for the fans forum and contact more Facebook users for further spread effect, which is one of the goals for Facebook promotion operation.

An average of 180 persons was active in “Talking about this” each day before the event; during the event, the average of “Talking about this” each day elevated to 900 persons. In the initial phase of the event from June 26 to 27 and July 2 to 3, two high peaks appeared, followed by another high peak from the middle of July to the end of July. The number of “Talking about this” in August was lower than that of July, however still higher than the average before the event (Figure 2).

Analyzing age distribution, we can see that before the event, 13-24 year age group fans had an average of 30-40 persons of “Talking about this” each day, and showed a significant rise in the middle of July. During the entire event, the average “Talking about this” each day for 13-24 year age group reached 320 persons, showing an eight-fold increase from before the event. Also, among the “Talking about this” numbers, 13-24 and 24-34 year age group fans took up 32% and 31% followed by 35-44 year age group (24%) and > 45 year age group (13%) fans.

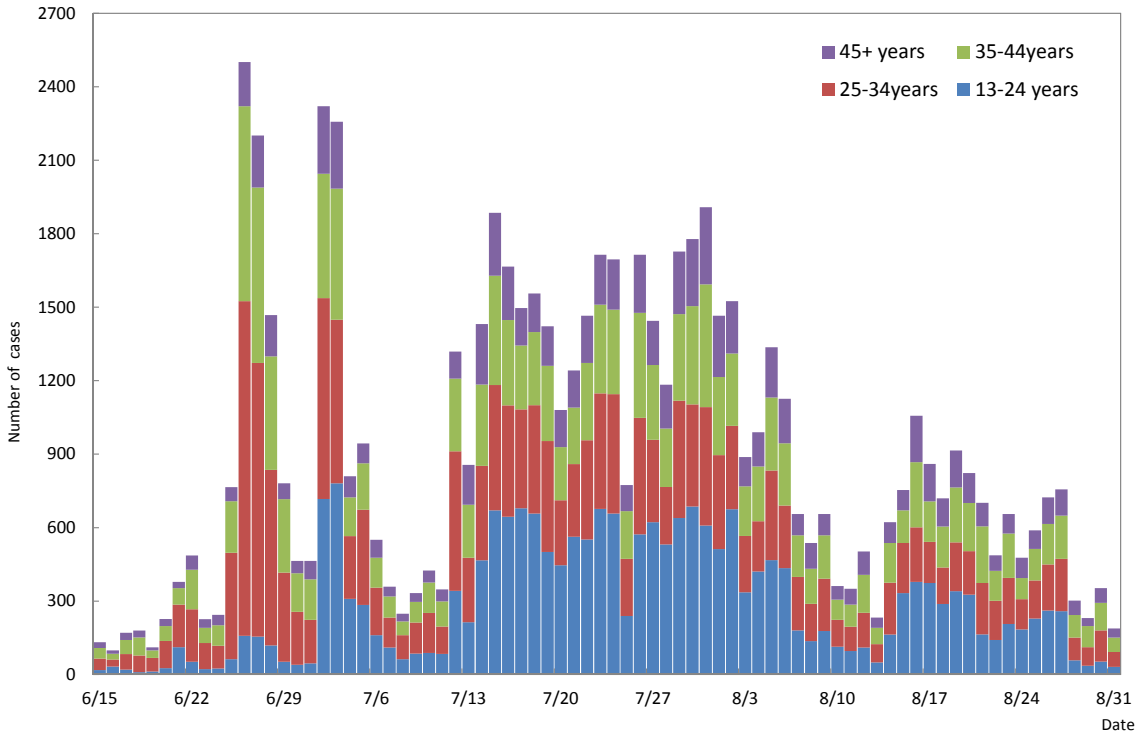

Figure 2. Age distribution of the“1922 Epidemic Prevention Experts” Facebook between Jun-August, 2012.

Discussion

A. Understanding internet user habits can elevate user interaction

A total of 14,153 users participated in this event, with 26,917 logins, showing an average of 2 logins per person. By analyzing the login number, most of the logins occurred on Wednesdays, followed by Tuesdays and Saturdays, the lowest on Sundays. This may be due to the fact that most people choose to go out on Sundays and spend less time online. The login times were mostly after office/class hours and night time, with the lowest between midnight and 8 a.m.

A digital sales company in USA once analyzed the world top brands and information from over 1,800 Facebook pages. The results show that on Facebook, different professions have different suitable posting times. For advertisements and inquiry type fan pages, weekend posts can reach a 60% interaction rate. Integrating the professions observed the interaction rate of posts between 8 p.m. and 7 a.m. were 14% higher than the rate between 8 a.m. to 7 p.m.; weekend posts also had a higher interaction rate (14.5%) than of weekdays [12]. The results of interaction time from this foreign study and this report have a slight discrepancy; however, after understanding Facebook fan usage habits, using the most suitable time to post messages and promote events can aid in promotion and sharing of information and elevating internet user interaction; this is a common advice.

B. Appropriate event design can contact risk subjects and change the form of fan pages and increase promotion scale.

USA CDC (Centers for Disease Control and Prevention) believes that in the health communication and social marketing process, determining the target audience is one of the key step; one must first understand the behavior, life style, and needs of the targeted subjects and followed by planning the communication message, promotion materials, and approach channels [13]. Due to the ever decreasing HIV infected age group, the plans for this event targeted the young group of 13-24 year olds; through the powerful dissemination of social networks, expectant characteristically and notational web events can be designed. The results show that this event not only reached the targeted promotion subjects set by Taiwan CDC, but also elevated the targeted audience's discussion through comments, shares, and posts; in addition, through the spread effect, more people joined and expanded the topics discussed on the fan page.

C. Continuous message posts and events, to enhance fans' memory to elevate their willingness to remain fans of this page

Domestic researches show, the promoted content and user interactive method for broadcasting in social networks is the main factor in managing fan pages. Enhancing the related topics provided and created can allow users to participate and interact. Enhancing updates of related information such as product promotion, latest news, and event information can effectively elevate most users' memory of a certain product [14]. Due to the facts above, as of September, after the lucky drawing winners were announced, more HIV

prevention and youth-related topics and events were continuously posted to prolong the time the targeted subjects stay in the fans page. The statistics from December 2012 show, 13-24 year age group took up 36% of the fans, with approximately 32% of “Talking about this”. The number of fans remained relatively stable with no sign of many fans leaving.

Suggestions

An open domain such as a social network server, with designed events and comment discussion characteristic form a fan forum to bridge the connection with subjects under risk and with a side-sweeping effect can become an effective tool in propagandas. It is advised that social networks can be used to communicate with younger age groups, design attractive web events and implement promotion information; new topics need to be brought up to elevate fans’ willingness to remain in the fan page. In addition, this study also found, internet users were most active after 6 p.m. (after office/class hours) on Wednesdays and Saturdays. Information should be posted in accordance with internet user habits for effective promotion and spread of information.

Limitations

Due to the limitation of online game application and Facebook management statistic data, further analysis cannot be conducted.

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