

iConference 2008
Poster Submission

Poster Title: Longitudinal Analysis of Freshman Adoption of Facebook.com

Abstract: Originally designed as a social network for college students, Facebook¹ is a leading social network site at American colleges and universities, with high degrees of adoption and market penetration (Gross and Acquisti, 2006). In the following poster, results of a 16-week longitudinal study of freshman adoption of Facebook.com at [X University] will be presented.

Description: This study examines adoption behavior and use of Facebook at [X University] over the length of Fall semester, 2005 (August-December, 2005). Using custom-designed crawler software, data on the freshman cohort was collected weekly from Facebook, capturing the growth of the social network over the freshman semester.

College students rely on social networks for various reasons. Primarily, students create digital representations of identity through the enumeration of a social network profile. Data in the profile may include elements like interests and hobbies, jobs or relationship status. This data serves a variety of purposes; it establishes the student as individual in the network, it opens the student to new interactions, and it provides an anchor for contact and discovery over time. Described by boyd, the creation of the profile writes the individual into being in the eyes of the community (boyd, 2006).

The profile also serves an important consumptive purpose on the college campus. Residential students often leave social networks behind as they immerse themselves in university; this period of intense transition creates unique social needs (Hays and Oxley, 1986). For first-term freshmen, the negotiation of new social networks is a primary need; students turn to social network sites to help them in this negotiation. Research by Lampe, Ellison and Steinfeld (2006) found that college relationships in Facebook move offline-to-online, signifying the value of the social network profile as an information point to be explored and consumed by potential friends.

Beyond construction and consumption of identity information, students also enumerate social network connections through “friending” – the process of explicitly stating connection in a social network site. Of course, a friendship in a social network site is not equivalent to a “real world” friendship, but rather a “weak tie” representative of connection and relation. Acknowledging this reality, the structure and evolution of a college social network as realized in this dataset remains remarkable.

¹ <http://facebook.com>

Analysis of this dataset (n_1 3196, n_{16} 3524) will focus primarily on profile construction and friending behavior over the sixteen weeks of data collection. Preliminary analysis of the data reveals interesting information about date of profile creation (Figure 1), Facebook participation (Figure 2) and social network growth (Figure 3).

In this preliminary analysis, I asked three simple questions of the dataset. The first explored when 2005 freshman created the Facebook profiles.

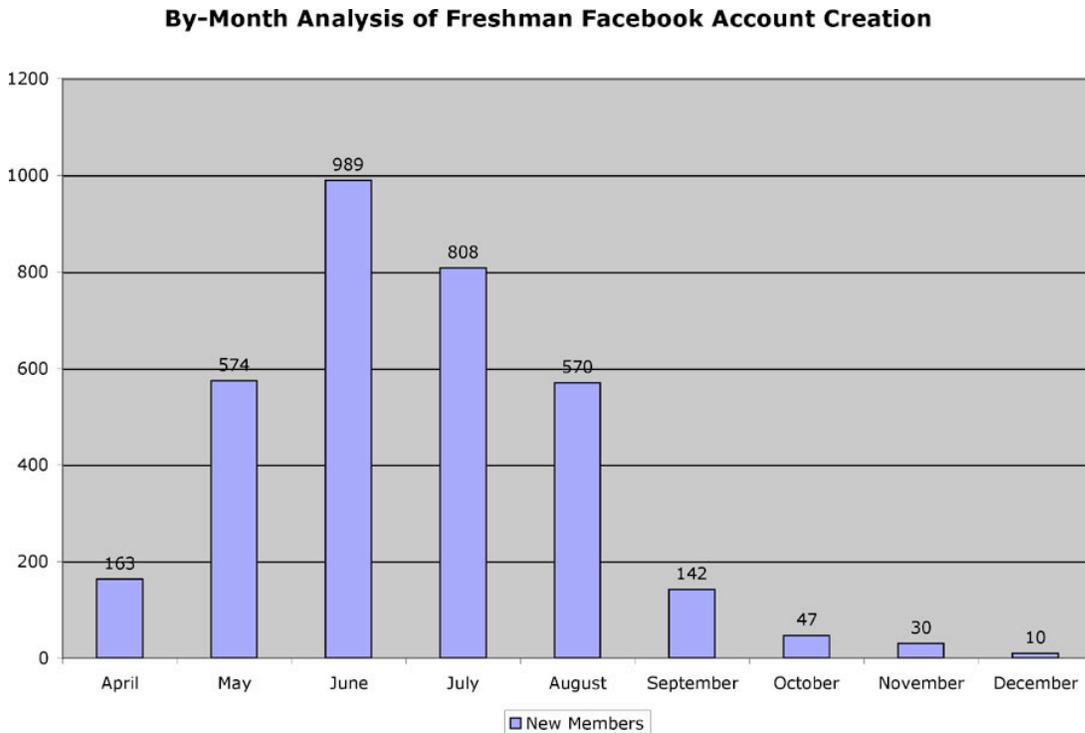


Figure 1. By-Month Analysis of freshman Facebook Account Creation

While school began in August, one can clearly see the majority of Facebook profiles were created over the summer. Exploring this data, I am able to see that profile creation correlates to orientation weekends, indicating the freshmen were likely learning about Facebook via word-of-mouth at orientation sessions.

My next question explored adoption and privacy behaviors over the course of the semester.

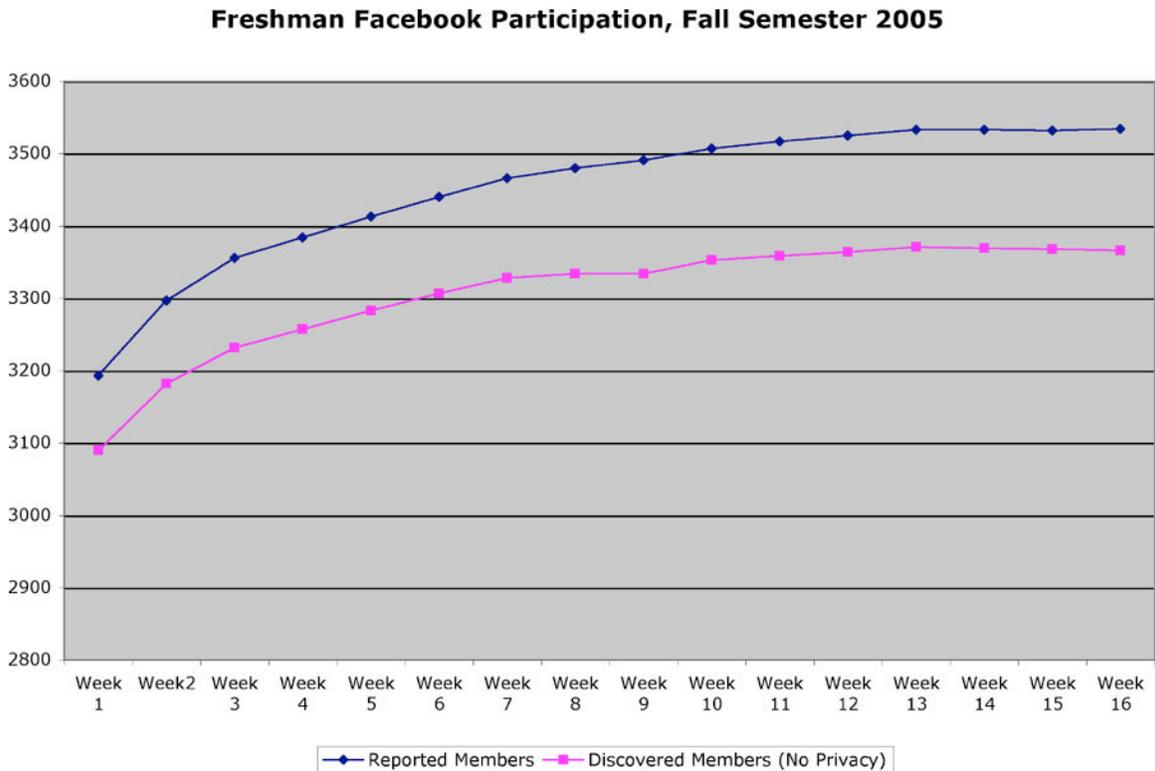


Figure 2. Freshman Facebook Participation, Fall Semester 2005.

On the first day of school, 3193 freshmen possessed a Facebook account. This was over 85% of the entire freshman class; use grew to over 94% by the end of the semester. The blue line represents total accounts, and the pink line reflects total accounts that are not private, meaning anyone with a [X University] Facebook account can view that profile. As the semester passed, students protecting their profile grew from 3.2% to 4.75%.

Finally, I wished to explore the growth of the aggregate social network of freshmen over the fall semester.

The Social Network Expansion of Freshmen

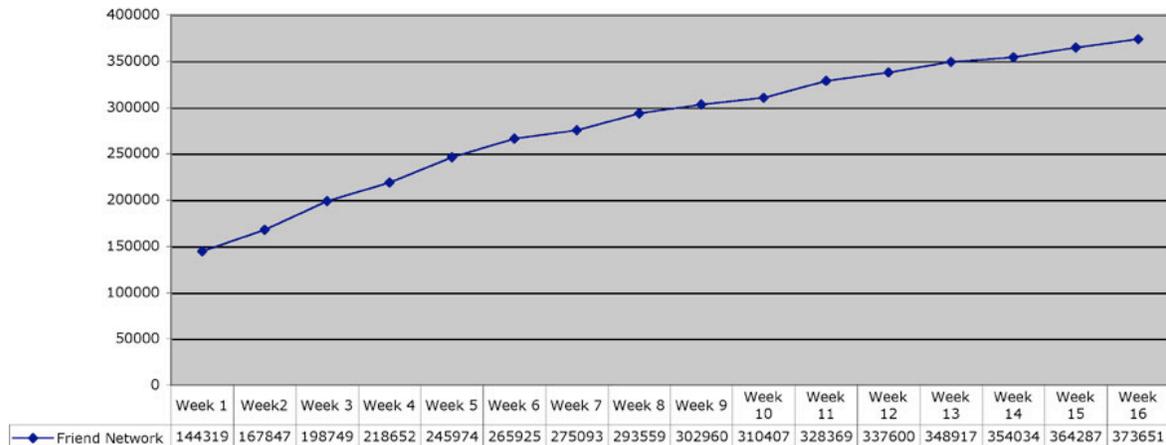


Figure 3. Social Network Expansion of freshmen

While the actual number of nodes (the freshmen) in the network did not grow substantially over the course of the semester, the number of edges (friendship connections) in the network did expand remarkably. As the freshmen made friends over the course of the semester, their social network size grew from 144,319 to 373,651 connections. The average number of friends a freshman on the Facebook had on day one was 46, and at the end of the semester, he or she had 111 friends. This might give us a picture of how many “connections” a freshman might make the first semester of college: 65.

In the poster, I will expand substantially on these preliminary findings, exploring the dynamics of profile structure over the course of the semester. Furthermore, I will explore significant correlations between profile construction and friendship behaviors, furthering the work of Lampe, Ellison and Steinfeld (2007). While the findings will be primarily descriptive, the unique nature of this dataset and the time in which it was captured promise valuable insight into social network site behavior.

Citations

Acquisti, A., & Gross, R. (2006). Imagined communities: Awareness, information sharing, and privacy on the Facebook. In P. Golle & G. Danezis (Eds.), *Proceedings of 6th Workshop on Privacy Enhancing Technologies* (pp. 36-58). Cambridge, UK: Robinson College.

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Hays, R. & Oxley, D. (1986) Social Network Development and Functioning During a Life Transition. *Journal of Personality and Social Psychology*, 50 (2), 305-313.

Lampe, C., Ellison, N., & Steinfield, C., (2006). A Face(book) in the crowd: Social searching vs. social browsing. *Proceedings of CSCW-2006* (pp. 167-170). New York: ACM Press.

Lampe, C., Ellison, N., & Steinfield, C. (2007). A familiar Face(book): Profile elements as signals in an online social network. *Proceedings of Conference on Human Factors in Computing Systems* (pp. 435-444). New York: ACM Press.