ABSTRACT
This poster presents the preliminary findings from the study, which aimed to explore the potential of inducing serendipitous news discovery in social gaming environment. Erdelez’ (2004) model of Information Encountering was used as a theoretical foundation to create a social game site, which was intended to provide a relaxed natural foreground activity for players without their awareness about serendipitous opportunity. A total of 269 players signed up to the site. Only half of those who signed up actually played and about 4% of those did what the game required to an extent that would allow them a chance to win prizes. Despite a low number of active players, there were 76 incidents of news clicks, which indicates serendipitous news discovery. About 29 participants clicked on news stories during their stay in the game site. The findings of this study indicate that social gaming environment is worth to explore further as a potential platform to facilitate serendipitous news discovery. The social game template created for this research could be used for various user-engagement games to continue testing the idea of inducing serendipitous information discovery in natural context. A novel approach of measuring serendipitous news exposure using log data and data mining algorithm was developed as a result of this study.

Keywords
Serendipitous news discovery, incidental exposure to online news, gaming.

INTRODUCTION
Media industry is shaken by the changing nature of news consumption due to emerging technologies of news delivery. Increasing number of studies indicate that online news consumption of audience is shifting from purpose-driven behavior to more serendipitous opportunity to discover news online. Incidental exposure to online news (IEON) was defined as the user’s memorable experiences of accidental discovery of useful and interesting news when engaged in various activities online (Yadamsuren & Erdelez, 2010). IEON, as a term, will be used interchangeably with serendipitous news discovery in this paper.

Media researchers and practitioners are looking for innovative approaches to facilitate serendipitous news discovery in daily online activities of citizens. There are a few efforts to build serendipity in online news delivery systems. Yahoo’s new chief executive Mayer announced that Yahoo news site aims to redesign “fresh and dynamic and add an element of surprise and serendipity.” (Perlroth, 2013) Facebook CEO Mr. Zuckerberg stated that the company’s Open Graph developer platform is aimed to create “real-time serendipity,” allowing people to engage with their friends’ activities online beyond just “liking” something (Bilton, 2013). The Creative Applications.Net developed a unique news app (the Accidental News Explorer) for iPhone users to allow the chance encounters and serendipity. However, there is a lack of research on the actual usage and evaluation of these innovative systems, whether users experience and feel serendipitous experience in these systems or not. Makri et al.,(2011) stated that the systems aimed to encourage serendipity seem to be “hit and miss” attempts by being more system-centered, rather than user-focused (p.3).

The main goal of this pilot study was to explore the potential of inducing IEON in social gaming environment. The following research questions guided this study:

RQ1. What are the main patterns of information behavior of game players?

RQ2. Is there a potential for serendipitous news exposure during social gaming?

BACKGROUND
Serendipity is recognized as a difficult phenomenon to study because it is hard to capture and induce this behavior in research studies. (Erdelez, 2004, Makri et., 2011) Erdelez (2004) stated that opportunistic discovery of information is difficult to observe in a research setting because “these actions are typically non-intentional and very short in duration, which makes them difficult for users to recall and
reflect upon in post-fast research designs” (p.1014) She conducted experimental study inducing serendipitous information experience within information seeking activity of students for their class assignment. This experiment did not succeed in evoking a serendipitous information discovery episode because the participants did not pursue any further efforts after noticing a trigger information in the system. Erdelez emphasized the importance of setting up a research design to study serendipitous information experiences so that participants could be exposed to trigger elements without realizing about the expectations. Toms (2000) studied serendipitous information discovery in a context of news browsing in an experimental study. She concluded that good browsing systems must support scanning and provide “salient cues” to encourage serendipity. Heinström (2006) argued that the serendipitous information discovery might be more likely to be revealed in a relaxed setting.

**Social game environment**

Erdelez’ (2004) model of Information Encountering was used as a theoretical foundation to create a social game MU Tiger Challenge (http://mutigerchallenge.com) for this study. This social game was organized following the college football season from September 8 to December 3, 2012. The game was advertised on the local newspaper’s print and online version A Facebook page was also created to promote this game.

The gaming environment was intended to provide a relaxed, natural foreground activity for players. Game players were not aware about the research goal of this project. Their primary goal was to participate in an online game, which aimed to support the university football team in its first inaugural season in the South Eastern Conference (SEC). This social game invited players to show their team spirit and earn a chance to win the weekly $100 or points toward a “team” prize of $1,000. Players had option to play as individuals or as part of a team. The game site included constantly updated RSS feeds with news stories from local news sites in an effort to induce incidental exposure to news (*Image 1*). The news links placed on the right side of the screen aimed to serve as a trigger for potential IEON taking players to one of local news sites. Live tweets from football players were displayed on left side of the screen.

**METHOD**

We conducted a mixed method study to investigate the potential of inducing IEON in live social game environment. The following data were collected to study information behavior of players. Log data was collected in the database tracking players’ time-stamped actions in game environment, including the log in date/time, log out date/time, page views, game activities (submitting/deleting entries, joining/leaving teams, browsing photos/videos, posting to discussion board) and clicking on news. Web analytics tool was used to track users’ behavior in the game site. Two sets of surveys were administered; the first survey collected demographic information of players when they registered to the game site while the second survey was administered immediately after the game was over with the goal of detecting personality types of players (Wise, Erdelez and Chiang, 2012). About 25 participants responded to the second survey. We also conducted interviews with think aloud and critical incident techniques (Urquhart et al., 2003) with seven players to learn about their game playing experience and IEON.

**FINDINGS**

We are currently in the process of analyzing data for this study. This poster presents preliminary findings from log data analysis.

**Sample**

During the social game’s running period, a total of 269 players signed up to the site. 50% of the participants were male, 49% were female, and one percent preferred not to disclose their gender. In terms of age, the majority of participants (about 43%) was in the age category of 21-34, followed by 22% - in the range between 18-20, and 17% in the range between 35-49. Only 3% of registered participants were over 65 years old and another 3% were below 18 years old.

As for occupation, about 35% of participants were college students, 31% - community members, 9% - college staff, 8%-alumni, 1% - college faculty. About 13% of the participants chose “Other” category for their occupation. In terms of geographical location, the majority of participants (85%) were from Missouri, about 7% from Kansas, and the rest of them were from other states including Georgia, Massachusetts, California, Texas, New Jersey, New York, Ohio, Kentucky, Arizona, Washington, and Illinois. As for residing city, about 52% of participants were located in local city, where this social game was organized.

Data mining algorithm was developed to analyze log data of game players, which consisted of 43490 lines of raw data.
DISCUSSION

The preliminary findings of this study provide initial insights about the potentials of inducing serendipitous news discovery in social game environment. It was an attempt to facilitate, capture, and measure IEON in online environment in natural context, when participants were not aware about the expectations for serendipity. The study was limited by a low number of active players, which was out of control from research design perspective. The actual game ran for the first time in a small college town and the marketing strategies might not have reached the right audience and interested parties. The topic of game related to college football was also a limiting factor to engage more players.

Despite a low number of active players, this study indicates that social gaming environment is worth further exploring as a potential platform to facilitate serendipitous news discovery. The social game template created for this research could be used for various user-engagement games to continue testing the idea of inducing serendipitous information discovery in natural context. A novel approach of measuring serendipitous news exposure using log data and data mining algorithm was developed as a result of this study. This methodology could be enhanced for future studies to measure serendipitous information behavior and evaluate the effectiveness of social interactive systems built for serendipity.

ACKNOWLEDGMENTS

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REFERENCES


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Table 1. Patterns of players’ behavior.

RQ1. What are the main patterns of information behavior of game players?

The preliminary findings of this pilot study show that the majority of participants (46%) visited the game site between 2 and 9 times (Table 1) followed by 27% of participants - visited the site once and 22% - registered to the game site, but never returned. Only 4% of participants visited the game site more than 10 times. It means that only half of those who signed up actually played and about 4% of those did what the game required to an extent that would allow them a chance to win prizes. There were only five players who were “engaged players” and did nearly all challenges offered for competition. A total of 343 photos, 31 videos, and 430 conversations were posted on the site during the game period.

RQ2. Is there a potential for serendipitous news exposure during social gaming?

Despite a low number of active players, there were 76 incidents of news clicks, which indicates serendipitous news discovery, as we defined. About 29 participants clicked on news stories during their stay in game site and followed the links to read news on local news sites. Participants who visited the game site between 2 and 9 times, had the biggest number (24) of serendipitous news discovery incidents, followed by 22 news clicks by those two winning players, who visited the site more than 150 times. 16 out of 73 participants, who visited the game site once, clicked on news stories. We are in the process of analyzing the sessions when serendipitous news discovery happened further.

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