NFL Game day iPhone Companion Application:
A Case Study in University-Industry Cooperation

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ABSTRACT

We describe an application for the iPhone, the iPod Touch, or the iPad, developed by a group of undergraduate students at the University of Florida, under a University-Industry Cooperation program known as IPPD (Integrated Product and Process Deisgn), sponsored by the entertainment software giant EA (Entertainment Arts), whose flagship product is the Madden NFL video game. We describe the nature of the project and the product being produced, and describe the educational program (IPPD) under which it is being developed.

Keywords: iPhone application, University-Industry Cooperation, Entertainment Arts

1. INTRODUCTION

The author's IPPD project this year at the University of Florida consisted of helping our sponsor company, Electronic Arts-Tiburon [1], expand its development on the Apple iPhone [2] platform with an application that acts as a companion for the company's popular Madden NFL franchise [3]. After an initial semester spent on a preliminary design of the application, at EA's request, this past semester (January-April 2010) was spent redesigning the application to focus more on the social networking aspects of our initial prototype. The team, consisting of six students, dubbed themselves the iGEAKS, and designed their own logo, shown in Figure 1.
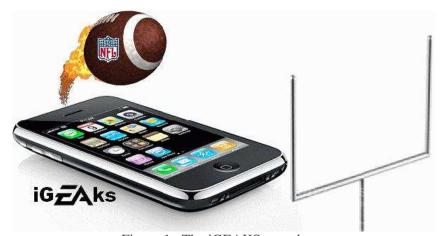

Figure 1. The iGEAKS team logo.

The final design produced by the team reflects this new focus with the following features:

- The ability to connect with and make updates on Facebook and Twitter,
- The ability to create events such as parties as well as poll questions that can be sent to friends via Facebook,

- A dynamic application skin that changes with the user's selected favorite team,
- A food calculator, for party planning purposes.
- The skeleton for a live-updating score checker.

In addition, the application works with Facebook's iPhone API [4], using a manager class that is reusable for other applications. Since we had to change our focus in the second semester, we reorganized ourselves to follow a strict set of milestones to meet every few weeks, with weekly teleconference meetings to stay on track and ensure that we were meeting EA's expectations. Because of this, our primary risk was in the small amount of time we had with which to complete our design, but in the end we were able to create a working, reusable design. Electronic Arts, in lieu of a traditional business case, plans to use this application as an advertising vehicle for their other products, with possible later integration with the new features introduced in iPhone OS 4.0 [5], as well as using the Facebook manager developed for the application in other iPhone products they create.

2. INITIAL DESIGN.

At its core, the NFL Gameday companion application provides users with informative services such as scores and statistics on NFL teams and players. Additionally, the product has a party planning facility as well as in-game activities such as polls and trivia questions. Finally, the application also taps into the surge of social networking by integrating with on-line services Facebook and Twitter, allowing the sharing of updates with friends and taking advantage of this vital marketing potential.

With no exact initial product specifications from EA, we started off by specifying our own requirements to guide us during the design process and make sure we did not lose sight of the big picture of the application. We needed our application to be intuitive to use so anyone could download it and navigate through all our features with no trouble. Also important to us was to make our application the "one-stop shop" for all of the user's game day needs, making sure that anything needed by the user could be done easily. Another one of our requirements was to make the application possess a high degree of visual appeal. While considering all the above requirements, we also kept in mind the Apple Developer's Guide [6] that suggests and lays out best practices for iPhone development , so that once the application was finished, EA could easily approve it for their Application Store. Functionally, we also needed our application to have a quick response time since it is interactive. Ideally, our application's use would make it replace any other sports/game day/party planning applications on the market.

The initial design was broken up into three sub-applications:

❖ The **Scores and Stats sub-application** has:
  ➢ Basic Functionality:
    ▪ Live Scores
    ▪ Team Pages with Rosters and Schedules
    ▪ Game Statistics
    ▪ Scoring Summaries
  ➢ Extra Features:
    ▪ Play by Play
    ▪ Live Statistics
    ▪ Downloadable Rosters for use during games
❖ The **Before Game sub-application** has:
  ➢ Basic Functionality:
    ▪ Party Planning
    ▪ Invites to a party
    ▪ Core Location for parties

- ➢ Extra Features
  - ▪ Connectivity to Facebook/Twitter
  - ▪ Core location for tail-gate parties
  - ▪ Food/Drink recommendations

- ❖ The **During Game Sub-application** has:
  - ➢ Basic Functionality:
    - ▪ Polls
    - ▪ Chat rooms for each game
    - ▪ Peer to peer games
  - ➢ Extra Features:
    - ▪ Connectivity to Facebook/Twitter
    - ▪ Polls each quarter
    - ▪ Tracking of polls

3. BUSINESS CASE.

EA did not stress profitability in this application, nor immediate release of the product. They plan on using the application to promote their other products, especially their Madden video game series. They will make decisions regarding whether the application and certain features will be free (or pay as you go) once the application is delivered. Therefore it is difficult to attach a monetary figure to the expected sales revenue our product would obtain, and it will mostly be seen by an increase in sales of the Madden video game. The cost of the application is the $20,000 spent by EA for the IPPD project, and the time EA's liaison engineers spent on this project. A high estimate would be a total cost of $25,000.

4. IPHONE HARDWARE

Apple Inc. first introduced the iPhone on June 29, 2007 as a smart phone with Internet and multimedia capabilities. Up to the end of 2009, three generations (Original, 3G, 3GS) of iPhone have been released, and used by millions of people worldwide. The smart phone features a multi-touch screen which allows users to access a virtual keyboard, slide menus and zoom in/out web pages and photos with their finger tips. As a multimedia device, iPhone sports a camera on the back of the phone, which lets users take still digital photos as well as video clips (in the 3GS model). Users can also download their favorite music to the device and store it in the 4GB-32GB hard drive, and use the iPhone as a portable music player. Apple provides thousands of additional applications for users to download for free or for a low price in the iTunes store [7]. Also, the iPhone can access the Internet through local area Wi-Fi [8], wide area GSM [9], and third-generation UMTS [10] and HSDPA 3.6 networks [11]. The Internet connectivity permits users to surf websites, share photos, send SMS/MMS/E-mail, download iPhone applications, and use the on-board GPS facility anywhere, at any time. These features are the keys to the iPhone's success, which has come to dominate the market share among other smart phones within a three year span.

5. SOFTWARE ARCHITECTURE

Apple Inc. heavily emphasizes using a Model View Controller for developing iPhone applications. This something we did adhere to. The use of this pattern isolates business logic from user interface considerations, and makes it easier to modify the application without making changes to others. In the MVC design pattern, the Model consists of main data of our application, including the main logic (for example, locating a person on map, or calculating food items based on number of guests). The View is responsible for providing an easy-to-use interface for users to interact with our application (for example, text fields, buttons, navigation), and finally, the