Chapter 57

Bespoke Mobile Application Development:
Facilitating Transition of Foundation Students to Higher Education

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ABSTRACT

Smartphone usage by students has increased rapidly over the last number of years, and it is expected that the utilisation of mobile applications in educational environments will continue to increase. This chapter focuses on a bespoke mobile application which aims to facilitate the transition of Foundation students to Higher Education in an Irish setting. Foundation students comprise of Access and International Students participating on pre-degree foundation courses. These students experience a major life change in making this transition and it is important that efforts are made to ensure a successful adjustment experience. Research suggests that mobile technologies can play a central role in this endeavour by offering support and access to particular information needs. This chapter will detail the design and development of a bespoke mobile application with such a purpose in mind and will also describe how the app was field tested with a cohort of incoming Foundation students in an Irish third level institute.

INTRODUCTION

Foundation Students – comprising International and Access students - have particular needs when they transition to higher education, and International Students in particular experience a range of personal, social and cultural difficulties with this transition (Smith & Khawaja, 2011). In an Irish context, third-level or tertiary level education refers to all education after second-level, encompassing higher education in universities and colleges (Department of Education and Science, 2004). In the Dublin Institute of

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Technology (DIT) the authors sought to investigate the benefits of providing Foundation Students with a bespoke mobile application tailored to their particular information needs. A bespoke mobile application is one with functionality that is designed to provide a solution to specific needs or a particular problem (Salz & Moranz, 2013). Development of such a mobile application would generally require substantial financial investment and technological expertise. However, this chapter will focus on a low cost model that requires minimal computer know-how to produce and deploy a mobile application in a matter of weeks. The authors will show how such bespoke mobile apps can be developed using freely available online Integrated Development Environments which facilitate deployment on the dominant Apple (iPhones, iPads) and Android mobile platforms. This chapter with detail the app's design, development and deployment along with its evaluation with a cohort of Foundation students in the DIT.

MOBILE APPS IN EDUCATION

Mobile Application Growth

Since the mid 1990's, the mobile network industry has sought widespread adoption of services that utilise mobile data to generate a new source of revenue, focusing on the "mobile internet" and new mobile data solutions (West & Mace, 2010). This emerging mobile internet was revolutionised by the entry into the market of the iPhone by Apple Inc. The device differed from its predecessors in that it incorporated a large intuitive touchscreen and relied on mobile users to sign up for a mobile data service plan to use its web browsing and internet capabilities. One of the iPhone's key innovation was the ability to allow third party application development which greatly increased the range of functions and applications available to the user through its App Store (West & Mace, 2010). Since the launch of the iPhone, the mobile internet ecosystem has undergone a rapid transformation, and these changes have been driven primarily by improvements in the mobile network infrastructure, a rapid uptake in smartphones and a significant increase in the demand for mobile applications (Basole & Karla, 2012).

On the back on the success of the iPhone, Google's entry into the market with Android based mobile phones and tablets has targeted the same consumers as iPhones. Google's strategy is to partner with handset vendors to provide consumers with a range of handsets across a broad range of price points all using the open source Android operating system. The success of Android has also seen an increase in market share and available apps (Butler, 2011).

Since 2010, Android tablets and Apple iPads are likewise capable of running apps in a similar fashion to smartphones, utilising the same operating systems as their smartphone counterparts. Currently tablet computing platforms can be divided generally into two categories, the Tablet PC platform based on a conventional PC architecture and the mobile multi-touch tablets such as Android Tablets and the Apple iPad (MacLean, Tausky, Labahn, Lank & Marzouk, 2011). Research has shown that 34% of American adults own an iPad or Tablet device, an increase of 31% since 2010, with college graduates being among the most likely to own one. The same research has shown that 33% of adults in the US aged between 18 and 24 years own a tablet device (Zickuhr, 2013).

With this growth in smartphones and tablets comes the emergence of the Apple App Store and the Google Play Store, the equivalent app store for Android smartphone and tablet users. This emerging app economy has revolutionised the creation and distribution of applications for mobile devices, and both commercial enterprises and hobbyist developers can easily access a market of hundreds of thousands

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