Films for the Humanities & Sciences®

Instructor's Guide

Creating Mobile Apps

Research and Planning

For Teachers

Introduction

The recent interest in Application programs, or "Apps", for the mobile device community, have refreshed the software industry and created opportunities for thousands of independent developers around the world. In this video we look at the development of mobile apps and present an overview of the types and uses of apps, their development stages and marketing ideas. Developers describe their search for inspiration and their planning processes for creating new games and utilities. The creative processes and the nature of the App market on each of the major platforms such as Apple iTunes and the Android markets are examined. All the factors in ensuring profitability are discussed together with the decisions necessary for controlling development costs.

Timeline

00:00:00 Introduction
00:05:16 Market Research
00:10:47 Content Research
00:16:16 Project Planning
00:20:24 Credits
00:21:16 End program

Related Titles

Creating Apps 2 – Development and Deployment
ICT Project Management
Getting into Games
Multimedia Systems

Recommended Resources

- http://daviddaniels.com/2011/06/icloud-a-1-billion-dollar-server-farm-i-think-is-a-game-changer/
- http://www.apple.com/au/itunes/
- http://www.android.com/apps/
- http://en.wikipedia.org/wiki/Mobile_application_development
- http://www.markj.net/iphone-hit-tennis-sales-stats-marketing/
- http://en.wikipedia.org/wiki/Android_software_development

Student Worksheet

Initiate Prior Learning

1. In a small group make a list of the Apps on your mobile phones and then vote on the most useful and the most popular Apps in your group. Share your finding in the class.

2. In a small group discuss the problem of trying to find an App for a particular use such as editing photos. Share your findings with the class.

3. What are the "Market places" for finding Apps? Which platform ITunes or Android is easiest to use and which has the best Apps.

4. How do Application developers make you aware of their products? How do you find out about good Apps?

5. Discuss why it is that many Apps are free or very cheap compared to programs for desktop computers.

Active Viewing Guide

1. What has been the impact of smart phones on the software industry?

2. List some of the sources of inspiration for new Apps described here. Discuss this with your classmates and describe one possible new type of App you would like to see developed.

3. What are usage surveys and statistics?

4. What changes have occurred in the types of Apps over the time that they have become available?

5. How could fingerprint recognition be used on an iPad?

6. What does it mean to "LIKE" an App in Twitter? What effects can social sites such as Facebook have on the marketing of Apps?

7. What are the standard software tools for developing the code and interface of apps for iPhones (IOS) and Android?

8. What are the advantages of large companies in the competitive App market?

9. What types of roles and skills have you seen demonstrated in the video?

10. Why would Apps, which are connected to databases, cost a lot more to develop than other types of Apps?

11. What do the terms "licensing" and "royalties" mean?

12. Why is it necessary to use special project management software in the development process?

13. Where does the money for development come from if there may be no income until the App sells enough copies?

14. What are two types of testing used? Describe several reasons why testing is necessary.

15. Do you have to be a programmer to work in this part of the software industry? What non-programming roles are available?

Extension Activities

1. Research each of the following technologies. Wi-Fi, GPS and Accelerometers. Describe how each technology could be used to enhance the Apps for a mobile phone.

2. Research Apples online iCloud server farms. (See the first hyperlink under recommended resources). What impacts will this technology have on the computer industry?

3. Capture the main windows from an app on a mobile device and make a simple flowchart or a storyboard showing the navigation through the screens presented as arrows.

4. In a group discuss the question "What makes a good game". Make a list of the characteristics of a "Good" game.

5. An application program on a mobile phone allows a student to follow a virtual tour of an ancient city by walking around the school oval. As they move around, the scene on the phone changes showing them pictures of the city and movies describe its features. Their position on the oval is detected using the GPS features of the Phone. In a small group design the interactive features of the phone that could be used to make the program more interesting to the student, and provide a report emailed to the teacher at the end of the tour.

6. Which of the presenters in the video had the best communication skills? Make a short video illustrating good and bad communication skills and the importance of communication with the user of an App.

Suggested Student Responses

Initiate Prior Learning

1. In a small group make a list of the Apps on your mobile phones and then vote on the most useful and the most popular Apps in your group. Share your findings in the class.

2. In a small group discuss the problem of trying to find an App for a particular use such as editing photos. Share your findings with the class.

3. What are the "Market places" for finding Apps? Which platform, ITunes or Android, is easiest to use and which has the best Apps.
   "Market places" are web sites dedicated to selling Apps. They allow the user to select, purchase and download Apps directly to their devices or via their computers to the device.

4. How do Application developers make you aware of their products? How do you find out about good Apps?
   By encouraging word of mouth recommendations on social application sites such as face book, by advertisement on TV, radio, magazines, podcasts and in the App markets.

5. Discuss why it is that many Apps are free or very cheap compared to programs for desktop computers.
   Free apps encourage the user to download and then updates or special features may have to be purchased or additional apps from the developer could be advertised in the free app.

Active Viewing Guide

1. What has been the impact of smart phones on the software industry?
   Varied answers but may include; employment, diversification, competition between developers, improvement to the quality of the apps and changed user expectations about software and hardware quality and price.

2. List some of the sources of inspiration for new Apps described here. Discuss this with your classmates and describe one possible new type of App you would like to see developed.
   Answers will vary.

3. What are usage surveys and statistics?
   Many web sites will now provide statistical information about the popularity of new Apps and industry trends. Google analytics provides a large range of statistical information about web site usage, such as the number of visits to a site and the number of users who click through into advertisements or who purchase Apps.

4. What changes have occurred in the types of Apps over the time that they have become available?
   The general quality and sophistication of the Apps have improved rapidly and a change from a small number of utilities to a large number of games. More use is being made of features such as the accelerometer and the GPS.

5. How could fingerprint recognition be used on an iPad?
   Security could be added with finger print scans using the camera.

6. What does it mean to "LIKE" an App in Twitter? What effects can social sites such as Facebook have on the marketing of Apps?
   Liking an app notified another list of friends that you like or approve of something you have found on the web. Sometimes doing this is rewarded with discounts or coupons. Liking something could cause it to very rapidly become popular with a large number of users. This is called viral marketing.

7. What are the standard software tools for developing the code and interface of apps for iPhones (IOS) and Android?
   Apples XCODE Integrated Development Environments (IDE). Many Android IDEs can be found in the link 6 under recommended resources.

8. What are the advantages of large companies in the competitive App market?
   Larger companies have teams of developers with specialised skills that can produce better software cheaper. They can also absorb the costs of development and marketing until the app is paying for itself.

9. What types of roles and skills have you seen demonstrated in the video?
   Management, planning, creative people such as story writers, graphic arts, programmers, interface designers, testers and marketing specialists.

10. Why would Apps, which are connected to databases, cost a lot more to develop than other types of Apps?
    It is expensive to store and distribute data across the web. Data centres to handle large numbers of online users may require thousands of servers and large support teams and infrastructure.

11. What do the terms "licensing" and "royalties" mean?
    Permission to use copyright protected content may require the payment of royalty fees to the owners.

12. Why is it necessary to use special project management software in the development process?
Complex Applications are usually produced by teams of people working for long periods of time on multiple simultaneous projects all of which have to be carefully coordinated to ensure they are on budget and on time.

13. Where does the money for development come from if there may be no income until the App sells enough copies?
Funding for development may come from the reserves / profits from other projects or from start-up financiers willing to take a risk in paying for the production of new Apps.

14. What are two types of testing used? Describe several reasons why testing is necessary.
Testing is a continuous process to each stage of development. "In house" testing is done using the developers and beta testing can be done using experienced and naive users.

15. Do you have to be a programmer to work in this part of the software industry? What non-programming roles are available?
Programmers are only one of the many people involved in the development of Apps, creative people, management, secretarial, and financial skills are also needed.

Extension Activities

1. Research each of the following technologies. Wi-Fi, GPS and Accelerometers. Describe how each technology could be used to enhance the Apps for a mobile phone.
   Answers should provide detail on how each technology works and how it could be used. Wi-Fi for cheaply downloading and uploading data outside of the normal phone transmission process. GPS for all sorts of geographical applications such as maps and route tracking. Accelerometers for responding to the movement of the device and using it to control aspects of the applications function such as moving a character in an animation.

2. Research Apples online iCloud server farms. (See the first hyperlink under recommended resources). What impacts will this technology have on the computer industry?
   Answers will vary but the main implications are the movement away from desktop-based applications to cloud storage and delivery of services.

3. Capture the main windows from an app on a mobile device and make a simple flowchart or a storyboard showing the navigation through the screens presented as arrows.
   Answers will vary.

4. In a group discuss the question "What makes a good game". Make a list of the characteristics of a "Good" game.
   Answers should include the interest level, excitement, and engagement of the user; the "ease of use" or intuitiveness of the interface; the quality of the graphics and sound.

5. An application program on a mobile phone allows a student to follow a virtual tour of an ancient city by walking around the school oval. As they move around, the scene on the phone changes showing them pictures of the city and movies describe its features. Their position on the oval is detected using the GPS features of the Phone. In a small group design the interactive features of the phone that could be used to make the program more interesting to the student and provide a report emailed to the teacher at the end of the tour.
   Answers will vary.

6. Which of the presenters in the video had the best communication skills? Make a short video illustrating good and bad communication skills and the importance of communication with the user of an App.
   Responses will vary in this extended activity.