

جامعة المستقبل

قسم الأنظمة الطبية الذكية

Application Development II

3rd Class, Second Semester.
(2024-2025)

Lecture 1

Introduction to Mobile Technology

1. What does make mobile Technology very important?

Mobile technology is receiving significant attention in the business and IT worlds. The technology represents a dramatic change in technological capacity that has enabled potential economic advantage for those able to take advantage of it. Mobile technology is the basis of innovations in reaching customers, and in redesigning business processes and software products that lead to the creation of many small businesses.

Mobile application development is the process to making software for smartphones and digital assistants, most commonly for Android and iOS. The software can be preinstalled on the device, downloaded from a mobile app store or accessed through a mobile web browser. The programming and markup languages used for this kind of software development include Java, Swift, C# and HTML5.

Embedded systems, also known as embedded computers, are small-form-factor computers that power specific tasks. They may function as standalone devices or as part of larger systems, hence the term "embedded," and are often used in applications with size, weight, power, and cost constraints

1.1. The widespread of the use of Mobile Devices

- 1) Mobile devices add a host of new possibilities for business and personal software because they are truly the first mobile computing platforms.
- 2) The capability to be made aware of its current environment through built-in sensors. Mobile devices have sensors designed to capture where they are, where they're going, and the environment around them.
- 3) Sensors can identify their present location to within a few meters and capture their current heading, orientation, and acceleration. Additionally, they can recognize how close they are to another object through a proximity sensor. These devices also have the capability to capture information about the ambient environment, including light levels, temperature, pressure, and magnetic field.
- 4) The capability to communicate with other computing devices through a variety of mechanisms. A laptop can communicate using Wi-Fi and Bluetooth. However, mobile devices also have these communication capabilities; they can communicate via cellular signals and using Near Field Communication (NFC).
- 5) Mobile devices have most of the same features, such as being able to display and manipulate data. Some of these features have enhanced usability because they are on a device that is easily moved.
- 6) Mobile devices are also computers.

1.2. Advantages of Mobile Applications for Organizations to Reach Customers

- 1) Smartphone users almost always have their device within reach.
- 2) Having a mobile app can also support brand loyalty and awareness.
- 3) One area where mobile devices enable a strong potential for disruption of the assumptions made about a business process is the payment industry, where a lot of companies are innovating to provide consumers and businesses the capability to make and receive payments.
- 4) The final, and potentially most important, advantage of an app is that it can take full advantage of the device's hardware and software capabilities to provide the customer with capabilities that make your products an easy option for them.

1.3. Changing Business Process

One of the most exciting possibilities associated with mobile technology is the potential it has to impact business processes. Processes are designed within the parameters of the available technology. When technology drastically changes, new forms are enabled. Businesses are paying significant attention to mobile because these qualities suggest that the technology may have implications for strategic and tactical advantage, or, as demonstrated with the banking app, become competitive necessities. Information technology was applied to portions of the existing process to make it faster or increase accuracy. As businesses became more adept with the technology and the technology became more capable, it was recognized that the full potential of the technology was not being realized, and companies began rethinking

entire processes to take advantage of the technology. Mobile technology is likely to follow a similar path in application to business processes.

1.4. Making Money and marketing

A final reason that mobile is important is that many people see the potential to start businesses and make money. The Google Play Store and the Apple App Store provide the app developer access to the market of app purchasers.

The developer does not have to worry about product distribution, returns, or payment collection. The store does all this and conveniently deposits the proceeds into the developer's bank account. Additionally, smartphone users automatically go to these stores to get new apps or browse for apps that might interest them. One final and very big reason for the strong focus on app development is that Google and Apple either support or provide the development environments needed to create apps for their stores. Taken together, this creates significant potential for individuals or small businesses to make money in the app market. The mobile apps market covers the following areas:

1. Mobile apps market sizing.
2. Mobile apps market forecast.
3. Mobile apps market industry analysis.

Apps make money for their producer through several approaches. Apps can be sold for a onetime fee, like other products. Consumers buy the app through the appropriate store and it is theirs for use whenever they like. The more apps the developers sell, the more money they make. Ad supported apps make money by including an advertisement on a small portion of the screen. Anytime a user clicks an ad, the developer makes money. Both Google and Apple provide developers access to the code to display ads and a service to provide the ads and track the clicks.

In contrast to a paid app, the only time the developer gets paid is if an ad is clicked (Apple's ad service also pays per view of the ad, but the amount is significantly less than a click). The amount of money generated by a single click is very small, so to make much money it is important to get a lot of users of the app. A third approach to making money is to provide for in-app purchases. With this model, the user gets the app for free but needs to make a purchase to get additional features. For example, a developer might provide a game for free but require a purchase for more advanced levels of the game. Another approach is subscription based. The app provides functionality that requires access to the developer's data or other services. To use the service, users buy a monthly or annual subscription

