**Question 1 A**

**Draw the functional model of Mobile Computing, explaining the different roles [5 Marks]**

* **Middleware: A software layered between a user application and operating system.Examples: communication middleware, object oriented middleware, message oriented middleware, database middleware, …etc.**
* **User: This is the user of the computing system.**
* **Content: Its what the user access from the computing system.**
* **Database: it is a collection of the related data content.**

**Question 1 B**

**What effect will smart mobile devices (Smartphones and others) have on mid-size enterprise (with less than 100 employees; and you will need to choose its business type – manufacturing or service) in the next 5 years?**

* Shooting of photos: a sales and marketing person can take photos of the cloths and visit potential clients where he /she will show them the photos as they are in the smart device. One do not need to carry the physical cloth.
* Online ordering: A client can make an online order to a sales person. The sales person need not have a desktop computer for him/her to receive the order. This would increase the sales.
* General marketing: a sales person can post products eg to facebook even from a remote area. This would also increase the sales.
* Researching for new fashion styles: This will improve and increase the level of creativity. A designer will research for new fashion styles/models and hence increase demand of new model fashion items.
* Employee monitoring: The manager can use GPRS enabled monitoring software to be able to monitor where the sales persons are. This will ensure all employees attend to their duties.

**Question 1 C (1)**

**As a manager of mobile system technology system, integrate yourself and i) Prepare a SWOT (strength, weaknesses, opportunities, and threat) analysis [5 Marks]**

**(Vehicle mobile car tracking System Company)**

**Strengths**

* There are very few companies offering these services.
* We will offer free support to all our clients.
* Qualified staff to offer these services.
* Most vehicles owners have smart phones hence make it easy to convince them to offer to provide this system to them.
* It is possible to track your vehicle with your smartphone.

**Weaknesses**

* This service is new in the country hence it is a bit hard to convince vehicle owners to get the same.
* New tactics used by thugs where they know how to easily tamper with the GPRS device mounted in the vehicles.

**Opportunities**

* Many people acquiring vehicles.
* If you get a loan from a bank it is a requirement that your vehicle have a tracking system and hence we will approach the various banks to collaborate with them and offer this service to their clients.

**Threats**

* New tactics used by thugs where they know how to easily tamper with the GPRS device mounted in the vehicles.
* New software are available that hack into these systems.

**Question 1 C ii)**

**Then make a strategic plan that will anticipate the company’s growth in these areas. [5 Marks]**

Introduction

XYZ vehicle tracking system developers is a company specializing in installation and support of a vehicle mobile vehicle tracking system.

Mission and vision statement

Mission: To provide reliable and quality services to all private and commercial clients.

Vision: To be the leading company in provision of reliable mobile vehicle tracking system technologies.

Goals

1. To reach the middle level vehicle owners.
2. To provide free 6 months support.
3. To provide these services at a reduced rate within the next five years.
4. To provide free education on the importance of GPRS services
5. To maximize on marketing and creating awareness of the existence of our company.

Performance indicators

1. Sales per year.
2. Getting responses from our customers.
3. The successive installations will also help us to measure our performance.

**Question 1 D**

**Discuss some of the cost-benefit categories that an IT manager must understand in making the communications/networking decisions for a medical device manufacturer to support the mobile sales automation. [5 Marks]**

1. The cost incurred with the benefits from the automation. The benefits should outweigh the costs.
2. The cost of maintenance should be reasonable so as not to consume the organizations capital.
3. The decision should have a success level in the market where they have been previously used.

**QUESTION 2**

**An ICT department receives a request from Senior Director of Marketing and Sales asking for a way to connect her Apple iPad wirelessly to a LCD projector and a big screen HDTV in a company sponsored Mobile Computing Exhibits/show in Nairobi. She needs to have the solution that would enable her to use it for 2 hours during the presentation time by October 24 if available. Submit a report and prepare for a 5 minute presentation. a) Cover page: a report title (chosen by each team), team members, date b) Proper pictures, drawings would be needed c) The content of the report should include the following sections i) Problem Statement ii) Background Research on (1) iPad features and supporting peripherals (2) Existing support for connecting to a LCD projector or HDTV; and the setups (3) Needed new components/ products: vendors, features, costs, etc d) Proposed Solution (1) Trade-off analysis or Evaluation (if there is more than one solution) (2) Proposed components and configurations (with drawings) (3) A user manual to show the connect and use the proposed wireless adapter e) Recommendations f) References [30 Marks]**

**ANSWERS: NEXT PAGE**

**TITLE: REPORT ON CONNECTING AN APPLE IPAD WIRELESSLY TO A LCD PROJECTOR AND A BIG SCREEN HDTV**

**PRESENTATION DATE: OCTOBER 24**

**PRESENTED BY: LAWRENCE M KAROKI**

 



**PROBLEM STATEMENT**

The purpose of this report is to come up with a solution of presenting a presentation which is an ipad to a group of people during an exhibition held in Nairobi. This provides solutions and support on how one can connect an apple ipad to a projector and a **HDTV screen.** By the end of the report the concerned presenter should be in a position to achieve the above.

**BACKGROUND RESEARCH**

1. **iPad features and supporting peripherals**

The iPad is a 9.7 inch [touch screen](http://searchcio-midmarket.techtarget.com/definition/touch-screen) [tablet PC](http://searchmobilecomputing.techtarget.com/definition/tablet-PC) made by [Apple](http://whatis.techtarget.com/definition/Apple) . The iPad is basically a netbook without a keyboard.  It has a multi-touch LED-backlit. The iPad, which uses Apple's mobile operating system (iOS) combines the computing power of a laptop or desktop computer with the portability of a smartphone. iPad users can surf the internet with [Safari](http://whatis.techtarget.com/definition/Safari), Apple’s web browser, receive and send email messages, share photos and slideshows, watch videos on YouTube and listen to music on iTunes. In addition to the standard features, Apple also offers an [app](http://searchsoftwarequality.techtarget.com/definition/application-program) store with thousands of free and paid apps with functions ranging from games and entertainment to business and education. Apple sells a number of accessories for the iPad that increase its functionality and ease of use, including cases to protect the tablet, stands to facilitate non-mobile use of the computer and external keyboards for easier typing.

Some of its supporting peripheral include:

* Camera
* Wireless keyboard
* Wireless mouse etc

1. **Existing support for connecting to a LCD projector or HDTV**

* Online support
* Manufacturer documentation
* Electronics technicians
* Researching online

1. **Needed new components/ products: vendors, features, costs, etc and set up.**

**Brief Synopsis:** Information on which cables to use to connect iPhone iPad or iPod Touch to your Television set or projector.

Information on cables you can use to connect your iPhone, iPad, or iPod Touch to your Television set or projector

Easily connect your iPod, iPhone, or iPad to the video inputs on a TV or projector.

There are several methods you can use to connect your iPhone, iPad, or iPod Touch to your TV set depending on what type of cables you wish to use.

Video mirroring makes it possible to share what's on your iPad on a bigger screen, such as a large screen TV or HD projection screen for presentations and conferences etc. Or you could use an educational iPad app to teach an entire classroom via a larger screen.

**iPad 1 and iPad 2:**

iPad 2 features the ability to fully mirror whatever is on your iPad screen onto an external display device. For all other devices, only video-enabled apps (like YouTube, Netflix, or stored videos), music, and photos can be displayed on your TV.

**iPad 1** - When the cable is connected to a TV or projector, an application that supports playing video to an external display will automatically use it when playing video. Of the built-in applications, Videos, Photos, and YouTube support external video display.

The original iPad, (Wi-Fi) and iPad (Wi-Fi/3G/A-GPS), can be connected to a television or projector to display photo slideshows or video by using an Apple Composite AV Cable, Apple Component AV Cable, or the iPad Dock Connector to VGA Adapter.

**iPad 2** - iPad 2 models support full video mirroring of all applications as well as the operating system.

The iPad 2 (Wi-Fi), iPad 2 (Wi-Fi/GSM/A-GPS), and iPad 2 (Wi-Fi/CDMA/A-GPS), support earlier adapters as well as the new HDMI-equipped "Apple Digital AV Adapter." The Apple Digital AV Adapter is compatible with the original iPad models as well.

**Screen Resolutions:**

The original iPad and iPad 2 models support 480i and 576i via the composite adapter and 480p and 576p via the component adapter. iPad 2 models also add support for up to 1080p video out via the VGA adapter or the new HDMI-equipped Apple Digital AV Adapter.

Both the original iPad and the iPad 2 are capable of mirroring the internal display at 1024x768 via VGA or HDMI.

**iPad to TV Settings:**

To set up your iPad video options on the iPad.

Go to Videos - Video Settings from the settings icon on the main screen.

There are three settings: TV Out, TV Signal and Widescreen. If you live in the US or Canada your TV Signal is NTSC. If you're outside the US or Canada the setting may be PAL. Adjust the selections to give the video playback options you need.

**iPad to TV Cable Choices:**



iPad to TV composite cable system

***Apple Digital AV Adapter (HDMI)***

The new Apple Digital AV Adapter mirrors exactly what you see on your iPad so that everyone in the room can enjoy it on your widescreen TV, video projection screen or other HDMI-compatible display. It even routes digital audio to screens that support it. A second built-in 30-pin connector lets you charge your iPad while it's mirroring. So you don't have to worry about running out of battery power. One end simply plugs into the 30 pin connector on the iPad, the other end plugs into your HDTV, projector or other HDMI friendly screen.

***Apple Composite AV Cables (Yellow, Red, White)***

You can watch iPad video on a big screen with full stereo sound by connecting iPad to the composite video and stereo audio inputs on your TV or home cinema system using Composite AV Cables which connect to your device or Universal Dock via the 30-pin dock connector to your TV, home cinema receiver or stereo receiver via the composite video (Yellow) and red/white analog audio ports. The cable also features a USB connector that you can plug in to a power source.

***Apple Component AV Cable (Blue, Green, Red, and White/Red for Audio)***

Watch iPad video on a big screen with full stereo sound by connecting iPad to the component video and stereo audio inputs on your TV or home cinema system.

iPad to TV component cables

***Apple VGA Adapter***

The Apple VGA Adapter connects to your iPad, iPad 2, iPhone 4, iPhone 4S, iPod touch (4th generation), iPad Dock or Universal Dock via the dock connector and to your projector or display using the VGA adapter.

Use the Apple VGA Adapter to mirror whatever's on your iPad 2 or iPhone 4S screen apps, presentations, websites on a VGA equipped TV, display, projector or other compatible display - up to 1080p HD.

Watch slideshows and video on the big screen in up to 720p by connecting your iPad, iPhone 4 or iPod touch (4th generation) to a television, projector or other VGA-compatible display.

***Airplay - Broadcast live to your HDTV and speakers***

With AirPlay, you can wirelessly stream what's on your iPhone, iPad, or iPod touch to your HDTV and speakers via Apple TV. Or mirror your iPad 2 or iPhone 4S screen.

With an Apple TV, you can use the AirPlay feature and avoid cables altogether. Connect your iOS device to the same Wi-Fi network as your Apple TV, select the video you want to watch from your device, and press the AirPlay button (it's hidden when you're not on the network). Select "Apple TV," and your content will begin streaming. Use Air Play to stream photos, videos, or music to your TV.

**PROPOSED SOLUTION**

1. **Trade-off analysis**

Video mirroring makes it possible to share what's on your iPad on a bigger screen, such as a large screen TV or HD projection screen for presentations and conferences etc. Or you could use an educational iPad app to teach an entire classroom via a larger screen.

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**Recommendations**

* It is highly recommendable to use the projectors to be able to conduct the presentation.
* Use the best and most cost effective method.
* Use the best components.
* Consult a technician to be able to set up this equipments.
* During the exhibition day it s highly recommendable to have a trained technician for support purposes.

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