Contents

1 Laptop Review ................................................................. 4
  1.1 Introduction .................................................................. 4

2 Research Criteria ............................................................. 5
  2.1.1 Detail/amount .......................................................... 5
  2.1.2 Qualitative impression ............................................. 5
  2.1.3 Points .................................................................. 5
  2.1.4 Weight ................................................................ 5
  2.1.5 Value .................................................................. 6
  2.1.6 Cost .................................................................. 6
  2.1.7 Operating System (OS) ........................................... 6
  2.1.8 User Friendliness ................................................. 6
  2.1.9 Durability ............................................................... 6
  2.1.10 Battery Life .......................................................... 6
  2.1.11 Weight ................................................................ 6
  2.1.12 Screen Type ........................................................ 6
  2.1.13 Data Transmission ............................................... 6
  2.1.14 Ability to show video .......................................... 6
  2.1.15 Provision for user-specific apps ......................... 6

3 Research ........................................................................... 7
  3.1 Execution of Research ............................................... 7
  3.2 VAT in Uganda ........................................................... 7
  3.3 Conversion ................................................................. 7

4 Technical Details .............................................................. 8
  4.1 Audio/Video ................................................................ 8
  4.2 Operating systems ..................................................... 9
    4.2.1 Laptop/computers ............................................... 10
    4.2.2 Mobile Phones .................................................... 10
    4.2.3 Generic .............................................................. 10

5 Review ............................................................................. 11
  5.1 Laptops .................................................................. 11
    5.1.1 Lenovo ThinkPad T410 ....................................... 11
    5.1.2 Dell Inspiron 14 ................................................ 13
    5.1.3 Apple Macbook Pro ....................................... 15
  5.2 Notebooks ................................................................. 17
    5.2.1 Asus Eee PC ...................................................... 17
    5.2.2 Acer Aspire One ................................................ 19
    5.2.3 Lenovo ThinkPad X100e ................................... 21
  5.3 Tablet PCs ................................................................. 23

This document is confidential Malaria Consortium and Software Factory. © Software Factory 2010.
5.3.1 Asus Tablet PC T91 .................................................. 23
5.3.2 Lenovo ThinkPad X201 ............................................. 25
5.3.3 HP TouchSmart TX2Z .............................................. 27

5.4 Smart Phones .......................................................... 29
5.4.1 HTC EVO 4G ......................................................... 29
5.4.2 iPhone 3GS ........................................................... 31
5.4.3 Motorola Droid ...................................................... 33

5.5 Low Cost Rugged Laptops ........................................... 35
5.5.1 OLPC/100$ Laptop .................................................. 35
5.5.2 Dell Inspiron 2100 .................................................. 38
5.5.3 Classmate PC Quanta NL2 ....................................... 40
5.5.4 2GoPc ................................................................. 43

5.6 Miscellaneous ........................................................ 45
5.6.1 Apple iPad .......................................................... 45
5.6.2 2go Pad (Tablet PC) ................................................. 47
5.6.3 The BlackBerry Bold ............................................... 49
5.6.4 Panasonic Toughbook 52 ......................................... 51
5.6.5 Panasonic Toughbook H1 Field ................................... 53
5.6.6 Nokia N900 .......................................................... 55
5.6.7 Partner Tech M2 POS .............................................. 57
5.6.8 HP Pee Wee .......................................................... 59

5.7 Asian/Chinese Manufactured Devices ............................ 61
5.7.1 No Name (?) ........................................................ 61
5.7.2 Zenithink ............................................................ 63
5.7.3 Hot Eee PC ........................................................... 65
5.7.4 HiVision NB0700 .................................................... 67

5.8 Other references: ..................................................... 69
5.9 Accessories ............................................................. 69

6 Contact ............................................................................ 70

Abbreviations:

Malaria Consortium = MC
Software Factory = SF
1 Laptop Review

1.1 Introduction

The purpose of the laptop review is to provide Malaria Consortium with a selection of laptops (incl. notebooks) and other similar hardware relevant for testing in rural environments for purposes of providing project members with access to services available on/via these devices (internet, applications, videos, etc).

This proposal will detail the time and cost for the following phases, suggested as part of the laptop review:

Clarification on phase descriptions:
1. Research criteria: Criteria for laptop research developed by Software Factory and Malaria Consortium.
2. Research: actual research for laptops by Software Factory
3. Procurement: procurement of selected laptops and notebooks by Software Factory on behalf of Malaria Consortium.
5. Field test: actual in the field test carried out on accordance with evaluation criteria. Software Factory and Malaria Consortium will participate in field test.

NB: Though “laptop” shall be used throughout as the reference to hardware, any portable device may qualify. This will depend on research criteria.
2 Research Criteria

Each laptop will be evaluated according to pre-defined criteria. The evaluation matrix will be the framework for this and is shown below:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Int’l (local)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?
*2 Angles viewable + Screen quality and type
*3 What provisions does the device have for transmitting data?

Each laptop will be evaluated according to the above matrix.

2.1.1 Detail/amount

The detail/amount is the quantitative detail of the laptop.

2.1.2 Qualitative impression

The Qualitative impression is the detail of the laptop which cannot be captured quantitatively.

2.1.3 Points

Points will be used to evaluate each criterion based on a relative scale of the laptops included in the survey. The relative scale will use the best and poorest laptops as the benchmarks for indexing the top and bottom of the scale.

2.1.4 Weight

Weight represents the importance of each criterion. 1 is not important, 5 is very important.
2.1.5 Value
Value represents the total value of each criterion. Value is calculated as points multiplied by weight. Total value is total value for the laptop.

2.1.6 Cost
Cost will feature International price/cost according to manufacturer online shop for having the device sent to Malaria Consortium headquarter in London, UK. Local price will feature cost for the device in Kampala, Uganda.

2.1.7 Operating System (OS)
Specification of operating system. “Weight” may favor open source systems.

2.1.8 User Friendliness
User friendliness is based on technology for maneuvering the mouse, ease of use when turning on the laptop etc. Touch-screens will be favored over non-touch screens.

2.1.9 Durability
Sturdiness and quality of the materials used. Durable and sturdy favored over fragile.

2.1.10 Battery Life
Battery life. Long battery life favored over short battery life.

2.1.11 Weight
Weight of laptop w. battery. Light favored over heavy.

2.1.12 Screen Type

2.1.13 Data Transmission
Detail on provisions for data transmission; infrared, Bluetooth, Wi-Fi, USB, slot for SIM card etc.

2.1.14 Ability to show video
Which audio/video players does the laptop support? This also depends on the OS installed. Support for numerous players favored over single-player support.

2.1.15 Provision for user-specific apps
Detail if, and to what extent, the user can download and use applications on the laptop/OS. Provision for user-specific apps favored.
3 Research

The term “laptop” is to be used in its broader (perhaps broadest) sense in this review.

3.1 Execution of Research

How the research was carried out:
Software Factory created five main groups of devices for which research was carried out:
1. Laptops
2. Notebooks (small/compact laptops)
3. Tablet PCs (laptops/notebooks with touch screen)
4. Smart phones
5. Miscellaneous

Categories 1 – 4 were chosen based on online evaluations (e.g. online magazines/websites) combined with user reviews. Online magazines/websites provide a detailed review of device specifications whereas user reviews provide insight into experience with the device based on actual usage of the device. Category 5 is based on supporting review and information on devices that may fit in the “Laptop Review” but is not captured in category 1-4.

Online Resources: Please see appendix.

In the review; main emphasis has been put on the Matrix combined with descriptions of relevant features alongside an image of the device. Please notice: the actual choice of laptop should be based on project requirements matched with device capabilities. The choice of laptops in the review should not be based solely on a comparison of the laptops reviewed but which laptops can achieve project success.

The Matrixes for evaluation are also available as soft-copy Excel.

3.2 VAT in Uganda

URA has stated that import of new hardware to Uganda does not attract VAT.

3.3 Conversion

Lbs (pounds) to Kg is converted as follows:
1 Lbs = 0.4536 Kg

British pounds to US Dollar is converted as follows:
1 GBP = 1.564 USD
4 Technical Details

4.1 Audio/Video

For the laptops, notebooks and tablets the ability to show video is dependent on the video-player installed in the device whereas the quality of the video depends on the graphics card.

One such video player is VLC video player which can be downloaded for free to Windows and Linux. VLC is able to play the following audio and video files:

- MPEG (ES,PS,TS,PVA,MP3)
- AVI
- ASF / WMV / WMA
- MP4 / MOV / 3GP
- OGG / OGM / Annodex
- Matroska (MKV)
- Real
- WAV (including DTS)
- Raw Audio: DTS, AAC, AC3/A52
- Raw DV
- FLAC
- FLV (Flash)
- MXF
- Nut
- Standard MIDI / SMF
- Creative™ Voice

These standards cover the most commonly used files.
4.2 Operating systems

Most of the laptops come with Microsoft XP/Vista/7 operating system pre-installed and is included in the price for the laptop. This is due to favourable prices from Microsoft if the operating system is bundled with a new laptop/computer. Most laptops and notebooks allow installation of Linux operating software, however tablet PCs include special software for managing the touch interface of the screen which may not be covered thoroughly if another Operating System than the pre-installed is installed.

It is in the interest of providers of devices and/or Operating Systems to make them as popular and widespread as possible while at the same time keeping a competitive edge which can be achieved by protecting the Operating System source code from competitors or by keeping it open to all as with Linux. Companies like Linux provide an Open Source Operating System which allows anyone to see how it is working, whereas Microsoft’s Operating System source code is unavailable. Microsoft instead provides APIs and Development Tools for programmers to develop applications for Microsoft Operation Systems, and the devices they run on, attractive.

Applications for a device can be developed in a number of ways:

- Operating system Source Code: allows a developer to edit the source code of the operating system, specifying how a device will work thus making provision for the program he/she want to use.
- APIs and Developer Tools for developing applications that will run on the specific device (Operating system).
- Generic applications such as Java and web-based services can be installed on a variety of devices as they are platform/Operating System independent.
4.2.1 Laptop/computers

Microsoft provides very powerful tools for developing applications for Microsoft operating systems. Microsoft doesn’t allow developers to see the code of the operating system as it is proprietary; however they provide APIs and development tools which allow developers to create programs/applications.

OLPC’s operating system is Linux based Fedora Core which is Open Source and allows developers access to source code as well as APIs and Developer tools for create programs for the OLPC.

Apple’s Operating System “X” current version “Snow Leopard” also provides APIs and Developer tools for developing programs/applications for Apple OS X computers.

4.2.2 Mobile Phones

Google’s Android platform is Open Source and gives developers access to improve and change the source code. Google also provide APIs for creating new programs for Android based operating systems.

Applications are loaded into the phone either via USB, Bluetooth or from web.

Apple provides APIs and developer tools for its iPhone as well as iPad which allow developers to create applications for these devices. The can be loaded to a device or downloaded from the iTunes stores if they are meant to be widely distributed.

Blackberry also provides APIs and developer tools for its phones.

4.2.3 Generic

Alternative to create device-specific applications is creating more generic applications such as Java (and Java Mobile for mobile devices) or web-based applications.
5 Review

5.1 Laptops

5.1.1 Lenovo ThinkPad T410


5.1.1.1 Presentation

The Lenovo ThinkPad T410 is part of Lenovo’s T-series of business Laptops known for their endurance and durability.

The laptop comes with a 6-cell battery that allows for 5-6 hours of operations, while an extended 9-cell battery allows for 7-8 hours of operation. These hours are actual working hours, not if the computer is idle. The ThinkPad’s battery monitoring tools allows users to stretch the number of hours described above.

Software allows users to customize battery profile, track consumption of the computer (in watts) in real time, and use Battery Stretch to turn off features for additional battery time.

The keyboard has liquid drains in place if water or coffee is spilled over it.

5.1.1.2 Technical specifications

- Operating System: Windows 7 Professional (64bit)
- Processor: Intel Core i5-540M (2.53GHz, 3MB Cache)
- Memory: 4GB DDR3 RAM (2GB + 2GB)
- Storage: 320GB Seagate 7400.4 HDD (7200rpm)
- Optical Drive: DVD+/-RW
- Wireless: Intel 6250 802.11AGN, Bluetooth
- Graphics: Intel GMA HD Integrated Graphics
- Power: 57Wh 6-cell, 65W 20V AC adapter
- Dimensions: 13.13 x 9.41 x 1.09-1.26”
- Weight: 5lbs 5.1oz
- Multi Media Card reader
### 5.1.1.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>1,225 USD</td>
<td>Value for money. Price from Lenovo Online store. Free shipping in UK when bought online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows Professional</td>
<td>Efficiently designed and very user orientated. Comes with fingerprint reader</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Ergonomic keypad and pointing mechanism</td>
<td>Hardware protection fixtures perform excellently in all Lenovo laptop products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Protected against liquid spills and physical trauma</td>
<td>Efficient battery with easy to use power management software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>5-7 hours</td>
<td>Screen dims slightly at extreme angles but a movie can be shared by several people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>5lbs = 2.27Kg</td>
<td>Standard Intel graphics card upgradable to more superior Nvidia NVS card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>14.1-inch WXGA (1280 x 800) LED Backlit (Matte finish) screen</td>
<td>Standard Bluetooth and Wi-Fi capabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless and Bluetooth enabled</td>
<td>Able to do High definition playback and flash video.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to do High definition playback and flash video.</td>
<td>Standard Intel graphics card upgradable to more superior Nvidia NVS card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td>Screen dims slightly at extreme angles but a movie can be shared by several people</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.1.2 Dell Inspiron 14


5.1.2.1 Presentation

Opinion on the Dell Inspiron 14 is generally that the computer is value-for-money but that battery life is somewhat disappointing and features such as Bluetooth and a webcam should be standard.

In terms of additional features, the Inspiron 14, like the Studio 14z, will offer FailSafe theft prevention: an option that helps protect your personal data in the event that your laptop is missing or stolen. With FailSafe engaged, you can track network information and the ISP location of your laptop when it connects to the Internet, and you can remotely erase selected files and render the laptop unusable until the rightful owner unlocks it.

A 6 cell battery provides 5 hours of battery time. No mention of special software for improving battery performance.

5.1.2.2 Technical Details

- 2.0GHz Intel Pentium dual-core processor T4200
- 14” diagonal glossy widescreen display
- 4GB DDR2 SDRAM
- 320GB SATA hard drive, Intel Graphics Media Accelerator 4500MHD graphics
- DVD+/-RW drive, double-layer DVD+R write capability
- Dell 2GB DataSafe online backup/storage for one year
- Intel 5100 wireless-N mini card
- Integrated Intel high-definition audio 2.0
- Built-in 1.3 megapixel Web cam
- 6-cell battery
- 3-year Computrace LoJack for Laptops theft protection
- Integrated 7-in-1 memory card reader
### 5.1.2.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>Dell</td>
<td>Inspiron 14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>1,500,000 UGX / 550 USD</td>
<td>Price from PCWorld computer store Kampala. Online price from Dell UK online store. Price includes shipping in the UK.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Good keyboard</td>
<td>Undersized right shift key but no other major setbacks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Plastic chassis with alloy interior structure</td>
<td>Durable but not exceptional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>5 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>7lbs = 3.18Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>14’’ diagonal glossy widescreen display</td>
<td>Acceptable display but mediocre compared to the competition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless enabled</td>
<td>Bluetooth not available in standard but can be added. Upgradable Wi-Fi card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to show video over a wide range of standards</td>
<td>Intel Graphics Media Accelerator capable but not the best graphics chip on market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.1.3 Apple Macbook Pro

Web: http://www.apple.com/macbookpro/

5.1.3.1 Presentation

Macbook Pro from Apple is the company’s high end line of portable computer hardware. Macbook Pro comes with Apples OS Snow Leopard operating system but does also allow to run Windows using Apple’s free Boot Camp utility.

Thin and light; robust software package, including Mac OS X Tiger scrollable touch pad, DVD burner, built-in Webcam and remote control.

Overall brightness is excellent for viewing in brightly lit rooms like in an office building or lecture hall. If you were able to find a spot of shade you could also use it outdoors as long as you find a strategic position away from any glare.

The 13” MacBook Pro offers a full-size Keyboard that is fully backlit for typing where overhead light might not be the best. This would provide especially beneficial in dark rooms or during power-outs (if battery is charged).

According to Apple, the battery on the 13-inch model is rated at 10 hours for light-duty work such as Web browsing (and about 1-2 hour2 less for the larger versions)

5.1.3.2 Technical Details

- NVIDIA Geoforce 9400M graphics (256MB of DDR3 shared memory)
- 8x slot-loading SuperDrive (DVD±R DL/DVD±RW/CD-RW)
- iSight webcam
- AirPort Extreme Wi-Fi (IEEE 802.11a/b/g/n)
- Bluetooth 2.1 + EDR (Enhanced Data Rate)
- Mini DisplayPort, Ethernet, two USB 2.0 ports (480Mbps), FireWire 800, Audio out and microphone in, SD-Card reader
- Dimensions : 0.95" x 12.78" x 8.94" (H x W x D)
- Weight: 4.51 pounds
- Integrated 58-watt-hour lithium-polymer battery
- 60W MagSafe power adapter with cable management system
### 5.1.3.3 Matrix

<table>
<thead>
<tr>
<th></th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>Apple</td>
<td>MacBook Pro</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>3,550,000 UGX/1,550 USD (2.4GHz) - 4,500,000 UGX (2.6GHz)/2,000 USD</td>
<td>Price from Apple Store Kampala. Online price from Apple store UK, price includes VAT &amp; free shipping inside the UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Mac OS X (Snow Leopard)</td>
<td>Robust and delightful operating system. Can run WinXP using apple’s boot camp utility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Remote control, scrollable touch pad, backlit keyboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Chassis looks to have fewer pieces than regular laptops</td>
<td>Sturdy built. Chassis well put together, fewer pieces means less can come off or go wrong.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>7 – 10 hours</td>
<td>7 hours standard with 10 hours for light work like web browsing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>4.5 lbs = 2.04kg</td>
<td>Thin, light build</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>TN Panel LCD</td>
<td>Good viewing over extreme angles but can’t be viewed properly under strong lighting or in the sun.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wi-Fi and Bluetooth with EDR (Enhanced Data Rate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to show High Definition video</td>
<td>Comes with superior Nvidia Geoforce graphics card ensuring top notch graphic performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.2 Notebooks

Notebook and netbooks are somewhat smaller laptops, provided for people who need to move a lot with their device and not perform complex tasks but merely document management, email and web browsing. The small size however affects the battery and most notebooks have a comparably lower operating time than larger laptops.

5.2.1 Asus Eee PC

Web: [http://uk.asus.com/ProductGroup1.aspx?PG_ID=7dDelmkESu9DXgVB](http://uk.asus.com/ProductGroup1.aspx?PG_ID=7dDelmkESu9DXgVB)

5.2.1.1 Presentation

This is one of the only laptops on the market with a dual core Atom processor and features a 1366*768 described as sharp and clear.

The notebook comes with a 6 cell battery which turns out about 4 hours of operation for tasks like surfing the web with Wi-Fi on.

5.2.1.2 Technical Details

- Processor: Intel Celeron M ULV 900MHz
- Graphics: Integrated Intel GMA 900 GPU
- Storage: 4GB of Flash-based storage (SSD)
- Memory: 512MB of DDR2 RAM (667MHz)
- OS: Xandros Linux (Asus customized)
- Screen: 7-inch screen with 800 x 480 resolution
- Ports: 3 USB 2.0, 1 VGA monitor out, headphone jack, microphone input, SD card reader (SDHC compatible), Kensington Lock slot, Ethernet 10/100
- Webcam (0.3 MP)
- Battery: 4-cell 5200 mAh 7.4V Li-Ion (rated at 3.5 hours)
- Wireless: 802.11b/g Atheros
- Input: Keyboard and Touchpad
- Weight: approximately 2 lbs with battery, 2.5 lbs travel weight with AC adapter
### 5.2.1.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asus</td>
<td>Eee PC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative Impression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>850 USD</td>
<td>Price from Asus UK store. Price includes VAT and shipping in the UK</td>
</tr>
<tr>
<td>Operating System</td>
<td>Acer customized Xandros Linux</td>
<td>Steep learning curve but stable operating system.</td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Small and light but underside gets hot after hours of use</td>
<td>No outstanding qualities. It's a basic device.</td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Cheap but well built</td>
<td>Will make 4 hours with average use (surfing web with Wi-Fi on)</td>
</tr>
<tr>
<td>Battery life</td>
<td>4 hours</td>
<td>Light, perfect for travelling worker.</td>
</tr>
<tr>
<td>Weight</td>
<td>2.5lbs = 1.13Kg</td>
<td>Light, perfect for travelling worker.</td>
</tr>
<tr>
<td>Screen type *2</td>
<td>7-inch screen with 1366 x 768 resolution</td>
<td>Sharp clear display</td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wi-Fi enabled</td>
<td>Average range Atheros wireless card.</td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to do high definition video playback and 3D graphics display</td>
<td>Good graphics running on Intel GMA 900 GPU</td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.2.2 Acer Aspire One
Web: http://www.acer.com/aspireone/aspireone_8_9/

5.2.2.1 Presentation

The quality and construction is said to be good and strong enough to be tossed around inside a book bag without much concern for its safety (apart from possible scratches to the glossy surfaces). However, this should not be taken as a statement for its ability to endure rough treatment.

Glare and reflections indoors under strong lights or outdoors under direct sunlight can be a problem.

The cramped keyboard may cause problems since the keys are small and very close together.

The stereo speakers are weak, both in terms of volume and sound quality.

5.2.2.2 Technical Details

- Processor: Intel Atom N270 Processor 1.60GHz
- Memory: 1GB DDR2 SDRAM (533MHz)
- Internal Storage: 160GB 5400 rpm SATA HDD
- Display: 10.1-inch diagonal WSVGA+ (1024x600)
- Graphics: Intel GMA 950
- Wireless: 54g Wi-Fi (802.11b/g)
- Expansion: 5-in-1 media card slot
- Ports and connectors: (3) USB 2.0 ports, VGA OUT, power connector, RJ-45/Ethernet (10/100), stereo microphone in, 0.3 megapixel (VGA) webcam.
- Dimensions (H x W x D): 1 x 10.2 x 7.2 inches (including feet)
- Weight: 2.4 lbs (not including weight of AC adapter).
- Power: 3-cell Lithium-Ion battery (2200mAh, 25Wh)
5.2.2.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative Impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>350 USD</td>
<td>Price from Amazon UK.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows 7</td>
<td>Small spacing between keys would make typing a problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Cramped keyboard</td>
<td>Not to be carelessly handled but good enough to handle bangs of travelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Strong build</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>3 hours (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>2.4lbs = 1.09Kg</td>
<td>Standard notebook weight. Easy for carrying around</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>10.1-inch diagonal WSVGA+ (1024x600)</td>
<td>Average vertical and horizontal viewing angle ranges but glare and reflections indoors under strong lights or outdoors under direct sunlight can be a problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>54g Wi-Fi</td>
<td>Wi-Fi enabled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Video enabled</td>
<td>Poor sound though which would the video experience. Headphones a must</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.2.3 Lenovo ThinkPad X100e


5.2.3.1 Presentation

The ThinkPad X100e is said to feature one of the best keyboards tested on an ultraportable laptop; For the keyboard, Lenovo uses a new keycap design that prevents the caps from popping off like they would on cheaper keyboards. The key spacing and support structure underneath the keyboard help deliver a fantastic tactile feel and prevent typing errors despite the small footprint of the keyboard.

The biggest single advantage of this screen is the fact that this screen features a matte surface. Unlike the glossy displays on consumer notebooks, the matte screen on the X100e doesn't reflect sunlight or strong indoor lights, making it easier to read what is on the screen in any environment.

Features a touch-field as well as a mouse pointer (red dot encircled on the keyboard on the image).

5.2.3.2 Technical Details

- 1.6GHz AMD Athlon Neo Single-Core MV-40 Mobile Processor
- 2GB PC2-5300 DDR2 (667MHz)
- Windows 7 Professional 32bit
- 11.6" WXGA HD anti-glare LED Backlit display (1366x768)
- 250GB 5400RPM SATA Hard Drive
- Graphics: ATI Radeon 3200
- 802.11b/g/n, Gigabit LAN
- 4-in-1 card reader and 0.3-megapixel webcam
- 6-Cell Li-ion battery
- Weight: 3.3 pounds (with 6-cell battery)
## Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>550 USD</td>
<td>Price from Lenovo UK store. Shipping free inside the UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows 7 professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>One of the best keyboards on a laptop of this size</td>
<td>Offers one of the best ergonomic typing experiences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Very durable</td>
<td>As with every laptop in Lenovo’s ThinkPad range durability is one of its strengths</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>3.5hrs</td>
<td>Battery pack heats up fast during use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>3.3lbs = 1.50Kg</td>
<td>Not the lightest but a worthy trade in for durable hardware build</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>11.6” WXGA HD anti-glare LED Backlit display (1366x768)</td>
<td>Wont reflect sunlight or bright lights plus horizontal and vertical viewing angle ranges are very impressive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wi-Fi enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Has very good high definition video playback performance</td>
<td>Comes with superior but power hungry ATI Radeon 300 graphics card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.3 Tablet PCs

A tablet PC allows users to use the screen as a touch-screen, thus touching it with the finger will have the same effect as using the mouse. The tablet can be used as a regular laptop/notebook but also allows the screen to be flipped around thus presenting the laptop with only a touch-interface.

5.3.1 Asus Tablet PC T91

Web: http://www.asustablet.com/eee-pad/t91/

5.3.1.1 Presentation

The LCD, which swivels to the left, moves quite smoothly, and feels very sturdy in the hand. The act of swiveling the screen into tablet formation is smooth and without any feeling of instability.

The T91 has an easy, 9-point calibration process to get the touch screen properly responsive.

The Eee PC T91 uses a nice and bright 8.9-inch LED-backlit display panel with a 1024x600 native resolution. The glossy screen offers good color and contrast, but glare and reflections indoors under strong lights or outdoors under direct sunlight is said to be a problem.

The Asus includes a pen stylus which is stored inside the pen silo at the front.

5.3.1.2 Technical Details

- Intel Core 2 Duo 2GHz
  - Mobile Intel 945GM Express Chipset
  - Intel PRO/Wireless 3945ABG Network Connection
- Microsoft Windows XP Tablet PC Edition
- DDR2 667 MHz, up to 2GB
- 13.3” WXGA Display
- SATA 120 GB Hard Drive
- Hot swappable ODD/ Super Multi Optical Drive
- 10/100/1000 Ethernet, 802.11a/b/g, Bluetooth V2.0 + EDR
- 3x USB, 1x Express Card, 1x 8-in-1 Card-Reader, 1x Fingerprint Reader, 1x TPM 31.7 x 23.2 x 3.5cm
- 1.98kg.
### 5.3.1.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>700 USD</td>
<td>Price from <a href="http://www.pcwb.co.uk">www.pcwb.co.uk</a> Delivery in UK = 15 USD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows XP Tablet PC edition</td>
<td>Stable and easy to use adaptation of WinXP for tablets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Very user friendly with hardware features to make use easy</td>
<td>Hardware features include; dedicated screen swivel button, multiple touch interfaces, easy to store pen stylus and fingerprint reader.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Light but secure build</td>
<td>Nothing exceptional. Averagely built tablet.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>5 hours</td>
<td>Implements exclusive Asus super hybrid engine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.98Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>13.3” WXGA display</td>
<td>Glossy screen offers good colour and contrast but is susceptible to glare under bright lighting or direct sunlight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wi-Fi, Bluetooth and Ethernet capability</td>
<td>Averagely kitted for all round data transmission capability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Video enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>9-point touch screen calibration software and custom-made TouchGate interface</td>
<td>Lets user change touch screen responsiveness and multiple touch screen activation methods</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.3.2 Lenovo ThinkPad X201


5.3.2.1 Presentation

A notable feature of the Lenovo Thinkpad X201 is that it offers a high-brightness outdoor-viewable screen on the X201 Tablet as an option.

Like with other Lenovo ThinkPads, the X201’s full-size, spill-resistant keyboard is one of its strongest features. The chunky letter keys have the excellent tactile feel and the feedback common to ThinkPads.

The X201 has a number of security features that are designed to keep data safe should the notebook fall out of the owners control. An optional fingerprint reader allows biometric logins and an optional encrypted hard drive makes sure data is protected even if the hard drive is removed from the notebook.

The 6 cell lithium ion battery has a rated battery life of 6.7 hours which is very good for any tablet. Lenovo says its new ThinkPad X201 ultra portable laptop can run up to 12.2 hours with an optional 9-cell lithium-ion battery.

5.3.2.2 Technical Details

- Screen: 12.1" Multitouch LED WXGA (1280x800) panel with Wide Viewing Angle
- Operating System: Windows 7 Professional (64bit)
- Processor: Intel Core i7-640LM (2.13GHz, 4MB Cache)
- Memory: 4GB DDR3 RAM (2GB + 2GB)
- Storage: 320GB Fujitsu HDD (5400rpm)
- Wireless: Intel 6200 802.11AGN, Bluetooth
- Graphics: Intel GMA HD Integrated Graphics
- Power: 66Wh 8-cell, 65W 20V AC adapter
- Dimensions: 11.6 x 10.1 x 1.04 - 1.31"
- Weight: 3.95lbs
## 5.3.2.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Lenovo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>ThinkPad X201</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>1,375 USD</td>
<td>Price from Lenovo UK store. Shipping free in the UK when bought online.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows professional</td>
<td>Features include good keypad, biometric login, reboot protection and encrypted hard drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very user friendly with good build and protection add-ons</td>
<td>As with all Lenovo ThinkPads this one is very durable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Spill-resistant keypad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>7 - 12 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>3.95lbs = 1.79Kg</td>
<td>Sturdy hardware configuration but still rather light</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>Multitouch LED WXGA (1280x800) panel</td>
<td>Averagely good viewing angles but perform poorly outdoors. Lenovo offers high-brightness screen for out-door use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Bluetooth and Wi-Fi enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to show video</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?
*2 Angles viewable + Screen quality and type
*3 What provisions does the device have for transmitting data?
5.3.3 HP TouchSmart TX2Z

Web: [http://www.hp.com/united-states/campaigns/touchsmart/#/TouchSmart-Tm2](http://www.hp.com/united-states/campaigns/touchsmart/#/TouchSmart-Tm2)

5.3.3.1 Presentation

The 12.1-inch wide-screen LCD display offers a 1,280x800 native resolution and comes with a multi-touch control. Its multi-touch commands for two-finger gestures allow rotation of photos or zoom in and out of Web pages, similar to an iPhone or MacBook.

The display is on a single, rotating hinge (to the left only) and this model's tiny-but-decent-sounding Altec Lansing speakers are built into the bottom of the display.

The standard 6-cell battery provides about 2 hours worth of power in "High Performance" mode with maximum screen brightness and Wi-Fi turned on. The number increases to a little more than 3 hours in "Balanced" mode with Wi-Fi on. The 8-cell extended life battery provided a little more than 5 hours of battery life in the "Balanced" mode with screen brightness around 50% and Wi-Fi on. The "Power Saver" mode should provide longer better battery life.

5.3.3.2 Technical Details

- Genuine Windows Vista Home Premium with Service Pack 1 (64-bit)
- AMD Turion X2 Ultra Dual-Core Mobile Processor ZM-86 (2.4 GHz)
- 12.1" WXGA High-Definition HP LED BrightView Widescreen (1280x800) with Integrated Touch-screen
- 4GB DDR2 System Memory
- ATI Radeon HD 3200 Graphics with 64MB Display Cache Memory
- 400GB 5400RPM SATA Hard Drive
- Webcam + Fingerprint Reader with HP Imprint Finish (Reaction)
- Wireless-N Card with Bluetooth
- LightScribe SuperMulti 8X DVD+/RW with Double Layer Support
- 8-Cell Lithium Ion Battery
- HP Mini Remote Control
- 5-in-1 digital media reader
- Express card/34 PC card slot
- Dimensions: 8.82" x 12.05" x 1.23"/ 1.52" (with 4-cell battery)
- Weight: 4.65 lbs (varies by configuration)
### 5.3.3.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative Impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>1,125 USD</td>
<td>Price from BT online shop (incl. VAT and shipping within UK)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows Vista</td>
<td>Upgradable to the better Windows 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very good mainly because of multi touch usability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good build as with all HP devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>2-3 hours</td>
<td>Variable power settings allow it last even longer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>4.65lbs = 2.11Kg</td>
<td>Weight varies by configuration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>12.1&quot; WXGA High-Definition HP LED BrightView Widescreen (1280x800) with Integrated Touch-screen</td>
<td>Average vertical and horizontal viewing angles. High brightness setting allows it to fare slightly better than others under bright lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless and Bluetooth enabled</td>
<td>Uses Wireless – N card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able the show video with good quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.4 Smart Phones

5.4.1 HTC EVO 4G


5.4.1.1 Presentation

It features a 4.3 inch touch screen, two cameras, multi-tasking and 4G.

HTC offers a rich mobile Internet experience with a fully integrated suite of services built on the Android 2.1 platform. HTC EVO 4G includes a blazing-fast 1GHz Qualcomm Snapdragon processor, the award-winning HTC Sense user experience, an 8.0 megapixel auto-focus camera with HD-capable video camcorder and a forward-facing 1.3 megapixel camera. The large 4.3 inch display, built-in kickstand, 3.5 mm headset jack and HDMI output make HTC EVO 4G an unparalleled platform for wireless entertainment.

HTC EVO 4G also allows up to eight Wi-Fi-enabled devices, including laptop, camera, music player, video player and any other Wi-Fi-enabled device, to enjoy the benefits of 4G speeds on the go (4G where possible).

HTC EVO 4G Audio and Video ability:

- MP3
- AAC
- AAC+
- WMA
- AMR
- MID
- MPEG4
- H.263
- H.264
### 5.4.1.2 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>HTC</td>
<td>Evo 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>? USD subscription so far</td>
<td>Price from cnet.com news</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Android 2.1</td>
<td>One of the best smartphone operating systems available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very good</td>
<td>Very wide screen, multi-tasking, 4G, fast processor, 2 cameras</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good</td>
<td>HTC known for outstanding hardware</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>14 hours with very little usage</td>
<td>Battery is actually really bad, can get to 4 hours under heavy usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>6 ounces = 0.170Kg</td>
<td>Doesn’t fare well in direct sunlight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>4.3” touch screen</td>
<td>Doesn’t fare well in direct sunlight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>GPRS, 4G, Wi-Fi enabled</td>
<td>Fast wireless access with 4G speeds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to show video</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>HTC Sense user experience</td>
<td>HTC custom made technology to improve user experience</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.4.2 iPhone 3GS


5.4.2.1 Presentation

The 3Gs includes applications like an improved Compass application and voice control. The 3GS has a 3-megapixel camera with auto focus and video recording. iPhone does not post visual alerts of emails and messages. All the user gets is an audio alert and a growing email or message counter. Changing batteries on an iPhone is not supposed to be done by users.

In terms of battery life, the iPhone provides 12hrs without the need to charge.

iPhone allows user to download applications from Apple’s app store. Applications can be games or educational programs. These are free or paid for.

**iPhone 4 update**

The iPhone is now available in a 4th generation version. In addition to the details above it comes with multitasking (several programs open at a time), camera with 5 Mega pixel, improved display performance and Facetime™ allowing video chat if both parties has access to Wi-Fi. Recognized problems with the antennae can be solved by buying a cover for the phone.

Apple iPhone 4 Audio and Video capabilities:

- AAC (16 to 320 Kbps)
- AIFF
- AAC Protected (MP4 from iTunes Store)
- MP3 (16 to 320 Kbps)
- MP3 VBR
- Audible (formats 2-4)
- Apple Lossless
- WAV
## 5.4.2.2 Matrix

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>iPhone 3Gs</td>
</tr>
</tbody>
</table>

### Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>iPhone3Gs: 1,400,000 UGX - 1,800,000 (UGX) / 650 USD</td>
<td>Price from Orange Uganda store. Online price from Apple UK store, includes VAT and delivery inside the UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expect iPhone 4 to cost around 1,000 USD.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>iPhone OS</td>
<td>One of the best smartphone operating systems available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very user friendly</td>
<td>User friendliness is down to a very intuitive user interface.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>12 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>4.8 ounces = 0.136 Kgs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>Touchscreen</td>
<td>Fingerprint resistant oleophobic coating keeps screen usable in spite of smudges on surface</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>GPRS, Wireless, BlueTooth enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Capable of showing video</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?  

Total
5.4.3 Motorola Droid


5.4.3.1 Presentation

The DROID from Motorola is an internet and multimedia enabled smartphone which runs Google's Android operating system, hence the name of the device.

The Droid will manage 8-12 hours before it needs recharging. This is with regular usage such as browsing, navigation, push Gmail and moderate app usage.

The camera's is 5 Megapixel, however described as below standard. Android 2.0 comes with Google's services, Android's app ecosystem, powerful multitasking and a high-quality screen (854 x 480).

Though not visible on the picture, the DROID has a sliding keyboard for writing messages.

Motorola Droid Video and Audio abilities:

Motorola Droid:
- AAC
- H.263
- H.264
- MP3
- MPEG-4
- WAV
- WMA
- eAAC+
- OGG
- AMR WB
- AMR NB
- AAC+
- MIDI
### 5.4.3.2 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>470 USD</td>
<td>Price from <a href="http://www.expansys.com">Expansys</a>, Prince includes shipping within the UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Android 2.0</td>
<td>Good operating system. Closest rival to iPhone OS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very good</td>
<td>Wide easy to use and good interface.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Average</td>
<td>Nothing outstanding but Motorola is known to have well-built devices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>8-12 hours</td>
<td>Will achieve this under moderate to heavy usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>6 ounces 0.170Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>Touchscreen</td>
<td>Screen larger than others but no notable extra functionality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>GPRS, Wireless enabled, bluetooth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Able to show video, MPEG-4, WMV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.5 Low Cost Rugged Laptops

5.5.1 OLPC/100$ Laptop


5.5.1.1 Presentation

The XO-1, previously known as the "$100 Laptop" or "Children's Machine", is an inexpensive laptop designed to be distributed to children in developing countries around the world, to provide them with access to knowledge, and opportunities. The laptop is manufactured by the Taiwanese computer company Quanta Computer.

The 100$ notebook (current model: OLPC XO-1) contains an AMD LX-Geode CPU at 700 MHz and 256 MB of RAM. There is no hard disk, but a 1 GB flash memory. A dual-mode SVGA LCD screen (Monochrome and Colour mode) helps saving power. Built-in wireless network interface and colour camera.

The software of the OLPC is open source, the operating system is Fedora Core and the graphical user interface is called Sugar. A special version of Firefox is used as web browser, the word processor is Abiword. E-Mail is sent and received through GMail. LinuxBIOS is stored on a 1 MB flash ROM.

Awaiting more information from OLPC team in Kigali (RW)/Miami (US)

OLPC supported Audio and Video:

5.5.1.2 Free Codecs

All of these codecs are completely open source and patent free.

- **Ogg Vorbis and Ogg Theora**
  - Uncompressed PCM from .wav, avi, .aiff or .au files and standard RTP streams
  - PCM a-law and u-law from .wav, avi or .au files and standard RTP streams
- **SMIL 1.0/2.0** multimedia
  - Still images (JPEG, GIF, PNG, WBMP)

5.5.1.3 RealMedia Codecs

RealNetworks has waived royalty fees for RealMedia codecs when used on the XO.

- RealAudio/RealVideo Codecs
- **RealAudio and RealVideo** playback from RealMedia file format and RealMedia streams.
- **RAM** metafile parsing and playback
- RealEvents and RealImageMap from .rm files and RealMedia streams
- RealText from .rt files and RealText streams
5.5.1.4 Non-Free Codecs

Helix Plugins are available for these formats but they have patents associated with them. These plugins may be downloaded from HelixCommunity.org

- I420 video rendering
- **MJPEG video** playback from .avi files
- **MP3 audio** playback from .mp3 files, standard RTP streams and shout-cast streams
- MP3 playlist parsing and playback
- Helix MP3 Decoder
- Helix MP3 Encoder
- RGB video from .avi files
- H.261 video from standard RTP streams
- H.263 video from .3gp files and standard RTP streams
- MPEG1/2 file parsing
- **MPEG4 audio (no video)** playback from .mp4 or .3gp files and ISMA or 3GPP streams
- 3GPP-Rel6 file parsing and 3GPP-Rel6 audio and video playback
- 3G2 audio depacketizers and QCelp decoder hooks
- SDP file parsing
- TimedText from .3gpp files

5.5.1.5 Codecs That Can't Be Shipped

These codecs are supported by Helix engine but cannot be distributed because of the royalty costs or licensing.

- AMR-NB and AMR-WB audio playback from .3gp and .amr files and 3GPP streams
- H.264 video from .3gp files and standard H.264 RTP streams
- AAC and aacPlus decoder - More info
- **AAC and aacPlus** playback from .3gp, .m4a, .aac or .ra files and 3GPP, ISMA or ice-cast streams
### 5.5.1.6 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>100 USD (actual 140 USD?)</td>
<td>Minimum purchase may be 100 units if bought directly from OLPC.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Fedora Linux</td>
<td>Uses a graphical interface called sugar. Easy to use but designed for simple tasks. Poor additional software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Good</td>
<td>Easy to use and intuitive operating system and easy grip surfaces with added peripherals like gamepad and touchpad but poor keyboard. Easy to fix as well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Very Good</td>
<td>Exceptionally tough and built to withstand drops.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>4 hours</td>
<td>Achieves this under moderate use; using the book reader only. Main site claims 8 hours but user tests show otherwise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>3lbs = 1.36 Kgs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>7.5” LCD 1200x900 (black and white)/800x600 (color)</td>
<td>Offers the selection of black and white or colour display. Very poor colour display.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wireless enabled</td>
<td>Poor graphics, weak processor and low RAM make viewing videos online impossible and offline unpleasant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Poor</td>
<td>All round additional software is poor and basic document editing software is poorly designed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.5.2 Dell Inspiron 2100


5.5.2.1 Presentation
Dell Latitude 2100 is sturdy notebook-size laptop built by dell and targeted at students.

The laptop can be equipped with anti-microbial keyboard, touch screen and carrying handle.

The laptop is available in several colours and all casings have a sturdy rubber feeling that makes it easier to hold them.

5.5.2.2 Technical Specifications

Hard Drives
Solid State Drives up to 16GB
5400rpm Hard Drives up to 250GB

Displays
10.1" WSVGA (1024 x 600) LED Display
10.1" WSVGA (1024 x 600) LED Display with touchscreen

Graphics
Intel Integrated Graphics Media Accelerator (GMA) 950

Weight & Dimensions:
Starting weight with 3-cell battery 2.91 lbs/1.32 kg
Width: 10.43"/265mm
Depth: 7.36"/187mm
Height: 0.89 - 1.57"/22.5-39.9mm

Ports:
USB 2.0 (x3), VGA, headphone/speaker out, mic

Power / Battery:
3-cell or 6-cell "Smart" Lithium-Ion Primary battery featuring Express Charge™
65W AC Adapter featuring cord wrapping

Wireless LAN:
Dell Wireless 1397 (802.11g)
Dell Wireless 1510 (802.11a/g/n 2x2)
Intel WiFi Link 5100 [802.11a/g/n (1x2)]

Bluetooth: Dell Wireless 365 Bluetooth 2.1
### 5.5.2.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device</strong></td>
<td>Dell</td>
<td>Inspiron 2100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Base price: $363 (Linux) / $452 (Windows)</td>
<td>Price varies depending on laptop equipment.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows Vista, Windows 7, Ubuntu Linux 8.10</td>
<td>User can specify which Operating system they require during purchase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Very good</td>
<td>Offers carrying handle and touchscreen and anti-microbial protection.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Very good</td>
<td>Has received good feedback on sturdiness and durability.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>6 cell Lithion Ion, 6-7 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.32 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>10.1&quot; WSVG (1024 x 600) LED Display with touchscreen</td>
<td>Touchscreen is addendum.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wireless and Bluetooth enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Capable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>(Windows or Ubuntu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.5.3 Classmate PC Quanta NL2

Web: http://www.classmatepc.com/product-info/

5.5.3.1 Presentation

The Classmate PC Quanta NL2 is an Intel developed notebook designed and built specifically for use in class rooms around the world.

Several models are available. The one chosen here is the Quanta NL2 that comes with a swivel touchscreen and several features for optimized usage: water resistant keyboard and trackpad and optional 3G connectivity.
5.5.3.2 Technical Specification

Processor/Chipset: Intel® Atom™ processor N450 at 1.66GHz • Chipset: Intel® NM10 Express

Memory: 1GB

Storage Device: 32G/ 16G / 8G SATA Flash, 2.5" SATA HDD

Operating System: Windows 7/Windows XP/Linux

LCD: 10.1" 1024 x 600 water resistant touch screen
• 10.1" 1366x768 optional display
• Convertible: traditional or touch-optimized tablet mode
• Palm-resting feature allows students to write and draw comfortably

Connectivity: 10M/100M Ethernet 802.11b/g/n WLAN
• Wi-MAX (optional)
• 3G (optional)
• GPS (optional)

Keyboard/Touch Pad:
• Water resistant keyboard
• Water resistant touch pad (integrated vertical scrolling)
• Anti-microbial keyboard (optional)

Battery:
6-cell battery (8.5 hrs) (2600mAh cell)
4-cell battery (4.8 hrs) (2200mAh cell)

System I/O:
2 x USB 2.0 ports, 1 SD slot, VGA port, 1 half sized mini-card slot and 1 full sized mini-card slot, dual audio jacks

Built-in 1.3MPX Rotating Camera 30fps (640 x 480) 1.3MP rotatable

Accelerometer (motion sensor): Tilt the Intel-powered convertible classmate PC and the display switches smoothly from portrait to landscape HDD Protection (Quanta NL2 only)

Handle:
Integrated retractable handle to support micro-mobility in the classroom

Custom Mini-Chassis:
• Size including handle: 268mm x (39.5~32mm) x 214mm
• Weight: 1.52–1.74Kg

Drop Test: Flash 70cm/HDD 60cm
### 5.5.3.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>(~$500)</td>
<td><a href="http://www.classmatepc.com/">http://www.classmatepc.com/</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows XP, Windows 7, Linux</td>
<td>User can specify which Operating system they require during purchase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Good</td>
<td>Offers carrying handle and touchscreen and anti-microbial protection.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Very good</td>
<td>Handle included. Water resistant keyboard, water resistant touchpad and anti-microbial keyboard. Drop test from 50cm.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>6 cell Lithion Ion, 6 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.52 - 1.74 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>10.1” (1366 x 768) LED Display with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>touchscreen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wireless enabled</td>
<td>3G optional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Capable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>(Windows or Ubuntu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.5.4 2GoPc

Web: http://www.2gopc.com/2Go_products.html

5.5.4.1 Presentation
The convertible 2go™ is an Intel powered notebook designed and built specifically for use in class rooms around the world.

The 2go comes with a touchscreen and stylus that allows writing on the screen as well as controlling the screen.

<table>
<thead>
<tr>
<th>CPU &amp; PLATFORM</th>
<th>STORAGE</th>
<th>I/O PORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Atom™ N460 Processor 1.66GHz</td>
<td>160GB 2.5&quot; SATA HDD</td>
<td>2 USB 2.0 Ports</td>
</tr>
<tr>
<td></td>
<td>2-in-1 SD/MMC memory card reader</td>
<td>1 x RJ-45 10/100 LAN</td>
</tr>
<tr>
<td></td>
<td>Supports boot from card reader and USB</td>
<td>1/8&quot; External Microphone-in jack</td>
</tr>
<tr>
<td></td>
<td>USB 2.0 Interface for external storage.</td>
<td>1/8&quot; External headphone jack</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEMORY</th>
<th>WIRELESS LAN</th>
<th>DIMENSIONS &amp; POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1GB Standard. 2GB Available</td>
<td>Realtek ® WLAN (B/G/N) Bluetooth Integrated 10/100 LAN</td>
<td>Size: 10.5&quot;(W) x 7.6&quot;(H) x 1.2&quot;(D)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight: 3.7 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 and 6-cell Li ion Battery Available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Battery life up to 8.5 hrs typical usage time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIDEO</th>
<th>AUDIO</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1&quot; LCD, 1024 x 600 Color LCD TFT, LED Backlight Digital LVDS Interface VGA Output</td>
<td>2 integrated speakers</td>
<td>Integrated camera</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resistive Touch Input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Driver / AP support Windows XP / Windows 7 / Linux</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Includes stylus/pen for resistive touch input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Built-in accelerometer</td>
</tr>
</tbody>
</table>

Click here to view all of the Convertible Classmate OS options
## 5.5.4.2 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows XP, Windows 7, Linux</td>
<td>User can specify which Operating system they require during purchase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>?</td>
<td>Keyboard and touchpad are spill resistant. Anti-microbial coating.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>6 cell Lithion Ion, up to 8.5 hours</td>
<td>Feedback and reviews suggest this is lower.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.52 - 1.74 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>10.1&quot; (1024 x 600) LED Display with touchscreen</td>
<td>Scratch and water resistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless, Bluetooth and 3G enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Capable</td>
<td>Performance is average to below-average</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>(Windows or Ubuntu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.6 Miscellaneous

5.6.1 Apple iPad


5.6.1.1 Presentation

The iPad is a new entertainment device from Apple meant to bridge the gap between the iPhone and a laptop. The device itself features a touch screen with which the user interacts with the device. The iPad is mainly meant to be used for browsing the web, reading documents, email and for leisure activity (games or reading magazines). iPad has a built-in microphone and speakers.

The iPad comes either with Wi-Fi or Wi-Fi and 3G connection. The latter requires a sim-card and thus allows the iPad to access the internet wherever there is connectivity. The Wi-Fi + 3G model includes assisted GPS.

Apple is offering the iPad in a 16GB, 32GB, or 64GB capacities.

The device has up to 10 hours of battery life between charges with up to one month of standby time.

The device includes a built-in digital compass like the iPhone 3GS, as well as an accelerometer and an ambient light sensor.

The iPad allows download from Apple’s App store similar to the iPhone. The App store offers various applications for both learning and entertainment.

iPad supported audio and video formats:

- H.264 video
- MPEG-4 video
- Motion JPEG
- AAC (16 to 320 Kbps)
- protected AAC (from iTunes Store)
- MP3 (16 to 320 Kbps), MP3 VBR
- Audible (formats 2, 3, and 4)
- Apple Lossless
- AIFF
- WAV
### 5.6.1.2 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>3,000,000 (USD) 735 USD (16GB + 3G) - 935 USD (64GB + 3G)</td>
<td>Estimated price from Apple store Kampala. Online price from Apple.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Mac OS X or Windows 7</td>
<td>User can specify which Operating system they require during purchase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very Good</td>
<td>Easy to carry. Offers multi touch control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good</td>
<td>Apple products normally durable but wide screen can offer considerable maintenance issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>10 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.6 lbs = 0.726Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>9.7-inch (diagonal) LED-backlit glossy widescreen Multi-Touch display</td>
<td>Fingerprint resistant oleo phobic coating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless, 3G and Bluetooth enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Capable</td>
<td>Good screen design, superior graphics and processor chips make viewing video on the device a pleasure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>Numerous Apple approved apps available via iStore</td>
<td>iStore Apps while approved by apple are not (always) extensively tested</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.6.2 2go Pad (Tablet PC)
Web: http://www.2gopc.com/2goPad.html

5.6.2.1 Presentation
The 2go Pad is 2go answer to people looking for an tablet PC running windows. The 2go Pad features: flash, multitasking, multitouch and and eReader compatible with eBooks and Kindle for PC.

The pad comes with 2GB of DDR2 ram, 250 GB hard disc, WiFi and Bluetooth, two USB ports for connecting devices and a built-in camera.

Battery gives an average of 5 hours of usage.
## 5.6.2.2 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device</strong></td>
<td>2Go Pad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cost
- $499

### Operating System
- Windows 7 Home Premium

### User Friendliness *1
- Good
- Easy to carry. Offers multi touch control

### Durability/sturdiness
- Good

### Battery life
- 5 hours

### Weight
- 1.22Kg

### Screen type *2
- 10.1” LED multi touch display

### Data transmission *3
- Wireless, Bluetooth enabled

### Ability to show video
- Capable

### Provision for user-specific apps (Windows)

---

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.6.3 The BlackBerry Bold


5.6.3.1 Presentation

The Bold features full 3G Internet, Wi-Fi, Bluetooth 2.0, GPS, half-VGA (480 x 360 pixels) display and 3.2-megapixel camera. Out of the box, the Bold comes stacked with 256MB of internal memory and a 2GB MicroSD card in the built-in expansion slot. The slot can accommodate cards up to 32GB.

The battery in the Bold allows 6 hours of talk time and 21 days of standby.

BlackBerry Bold supported Audio and Video:

- MP3
- MIDI
- AMR-NB
- AAC/AAC+/eAAC=
- WMA
- MPEG4 Part 2 Simple Profile
- H.263
- WMV
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>1,500,000 UGX</td>
<td>Price from MTN Uganda online store</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Various online retailers: 500 ~ 1.400 USD</td>
<td>Price from MTN Uganda online store</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>And Three UK mobile service provider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>RIM</td>
<td>Good exceptional operating system for mobile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>User Friendliness</strong> *1</td>
<td>Very good</td>
<td>Well designed user interface and easy to use trackball for scrolling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Highly durable</td>
<td>Blackberry hardware is very well and securely built. Able to handle multiple drops. A long lasting device</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>6 hours</td>
<td>Standard talktime</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.122Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Screen type</strong> *2</td>
<td>480 x 360 pixels, 2.44 inches</td>
<td>Not a touch screen but with very good 64K colour display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data transmission</strong> *3</td>
<td>GPRS, wireless and Bluetooth enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td></td>
<td>64K colour display does a good job of rendering video</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>Apps downloadable</td>
<td>Development for RIM not extensive</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.6.4 Panasonic Toughbook 52


5.6.4.1 Presentation

The Toughbook 52 is a tablet PC from Panasonic’s ‘Toughbook’ range. Panasonic has created a range of tablet PC’s based around the ‘toughbook’ theme.

The tablet delivers good visuals thanks to a 13.3” anti glare screen. It is clear to view in any environment inside and out, reportedly this also includes direct sunlight. The keyboard has a standard notebook look and feel and comes spill-resistant.

As a ‘toughbook’ Panasonic 52 is robust built. It can be dropped from up to 80cm and can be dropped and remain intact even if the screen is open.

Also relevant may be the: Toughbook 12.1” Convertible Tablet PC.

5.6.4.2 Technical specifications

- Windows® 7 Professional (with XP downgrade option)
- Intel Core 2 Duo P8400 (2.26GHz, vPro) - 13.3” XGA touch 1000nit
- Intel Graphics
- Shock-mounted flex-connect hard drive with quick-release
- 160GB (520M and P8400 CPU) or 250GB (540M CPU) hard drive
- 2GB SDRAM (DDR3 on i5 and i3 CPU models, DDR2 on P8400 CPU model) standard, expandable to 8GB
- PC Card Type II x 1
- SD Card (SDHC)
- ExpressCard /54 x 1
- Battery operation
  - 540M CPU:4 hours (long life battery)
  - 520M CPU:9 hours (long life battery)
  - 330M CPU:6 hours (lightweight battery)
  - P8400 CPU:8 hours (long life battery)
- SmartCard reader
- Fingerprint reader
- 7.6 Lbs (with touchscreen)
- 11.3” x 14.0” x 2.0”
# 5.6.4.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>Panasonic</td>
<td>Toughbook 52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>2,500 USD - 3,000 USD (actual laptop not available from mentioned website)</td>
<td>Prices from <a href="http://laptopshop.co.uk">laptopshop.co.uk</a>. Delivery costs are £10 + VAT within the UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very durable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>High</td>
<td>The CF-T7 is a toned down version but is still well built and incredibly hard to damage. Shock resistant hard drive means hard drive has impact protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>9 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>3.3lbs = 3.45Kg</td>
<td>Heavy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>13.3&quot; Touch screen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Bluetooth and Wireless enabled, Gobi(tm) Mobile Broadband</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Capable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps <em>(Windows)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.6.5 Panasonic Toughbook H1 Field


5.6.5.1 Presentation

The Toughbook H1 Field (also available in a H1 Health edition).

The Toughbook H1 Field comes with Smart-card reader, 1D and 2D barcode scanner, fingerprint reader, RFID reader (contactless smart card) and GPS. The device has an anti-glare screen designed for being viewed in the sun and can be operated using fingers or stylus.

Hot swappable batteries allows the user unlimited runtime if fresh batteries are brought for back-up.

- Intel® Atom™ Processor Z540
- Processor speed 1.86GHz
- 64GB reinforced flex-connect solid state drive (SSD)
- 10.4” dual-touch 1024 x 768 XGA sunlight-viewable LCD
  - Dual-touch LCD (touchscreen and digitizer
- Optional integrated Gobi™ mobile broadband
- Intel® Wireless WiFi Link 5100 802.11a/b/g/n
- Bluetooth® v2.1 + EDR (Class 1)
- Battery operation: 6 hours
- Fingerprint reader (on Elite model)
- Insertable SmartCard reader (on Elite model)
- Contactless SmartCard & RFID reader (on Elite model)
- 2.0MP camera
- 2D barcode reader (1D & 2D)
- GPS receive
- Dimensions: 10.4 (L) x 10.6 (W) x 1.3-2.3 (H)
- Weight: 3.4 lbs (with handle, strap and both batteries)
### 5.6.5.2 Matrix

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panasonic</td>
<td>Toughbook H1 Field</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>2.500 ~ 3,000 USD</td>
<td>Online Prices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows</td>
<td>Professional or XP tablet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Very durable.</td>
<td>Built for use on-the-go, drop-tested</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Durable.</td>
<td>IP65 certified.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>6 hours</td>
<td>Takes about 5.5 hours to charge. Allow hot swapping (change battery while in-use)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>3.4lbs = 1.54Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>10.4” dual-touch 1024 x 768 XGA sunlight-viewable LCD</td>
<td>Comes with anti-glare coating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Bluetooth and Wireless enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Capable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps (Windows)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?  
*2 Angles viewable + Screen quality and type  
*3 What provisions does the device have for transmitting data?
5.6.6 Nokia N900

Web: http://www.nokia.co.in/get-support-and-software/product_support/n900

5.6.6.1 Presentation

The Nokia N900 is one of the latest mobile computers to come from the Finnish mobile device maker. It has the same general shape as Nokia's earlier Internet Tablets: The Nokia N900 is a touch screen, full QWERTY slider phone and one of most talked about members of the N-Series recently.

The N900 is the first phone from Nokia based on the Maemo Platform. Maemo is based on the popular Debian Linux distribution and the N900 can therefore be seen as an internet tablet with phone capabilities.

Call quality is pretty good and the phone functionality is pretty simple and easy to use. Signal strength is never an issue on GSM or 3G. Since this device evolved from an internet tablet, connectivity is flawless and the phone can automatically switch to Wi-Fi from 3G / GPRS when near a hotspot.

This device deserves the title of the best internet device. Considering the fact that this device has its roots in an Internet tablet it does not disappoint. In fact it amazes. The N900 has one of the best browsers in the market and brings PC-like browsing to the palm of your hand. The Flash 9.4 support means that you can view full flash content within a webpage. Youtube and Vimeo work fine. You can even connect the phone to your TV and watch the action on the big screen.

The phone can also work as a modem for other units, e.g. laptops in a class room, or users can access content from the N900 on their laptops e.g. for viewing video.

Nokia N900 Audio and Video format supported:

- mp3
- wma
- aac
- m4a
- wav
- Mp4
- avi
- wmv
- 3gp
- codecs
- H.264
- MPEG-4
- Xvid
- WMC
- H.263
### Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device</strong></td>
<td><strong>Nokia N900</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manufacturer</strong></td>
<td><strong>Nokia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>630 USD</td>
<td>Prices from <a href="#">Nokia UK store</a>. Shipping charge within UK £4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Maemo 5</td>
<td>Very good strong developer orientated operating system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Very good</td>
<td>Touch screen, stylus and backlit qwerty keyboard. User can define which apps appear on home screen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>Good</td>
<td>Nokia is known for making durable phones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>1 day with active usage</td>
<td>Using Wi-Fi and 2G will bring life down to about 5-9 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.181Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>800 x 480 pixels, 3.5 inches</td>
<td>TFT resistive touch screen, 65K colors, Proximity sensor for auto turn-off, Accelerometer sensor for auto-rotate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wireless, Bluetooth, 3G, infrared and USB</td>
<td>Enabling Wi-Fi and 3G puts a heavy strain on the battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Capable of showing video</td>
<td>Processor and display quality ensure proper video rendering. Easy to watch videos off internet as well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>Customizable operating system</td>
<td>Though of interest to developers mainly, Maemo is a very customizable operating system and allows for user created applications to be installed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?
*2 Angles viewable + Screen quality and type
*3 What provisions does the device have for transmitting data?
5.6.7 Partner Tech M2 POS

Web: [http://www.partnertechcorp.com/M2POS_product_det.html](http://www.partnertechcorp.com/M2POS_product_det.html)

5.6.7.1 Presentation

Various models and makes of hand-help mobile POS (Point Of Sale) devices exist such as the Partner M2-POS examined here. The M2 has been selected due to its over-all capabilities.

The M2-POS is an all in one mobile POS terminal, with integrated 2” thermal printer, 3-track magnetic card reader, wireless 802.11b/g LAN, and optional integrated functions such as IC Smart card reader, barcode scanner, GSM/GPRS or CDMA, 2 megapixel camera, and Bluetooth.

The device comes with Windows CE (Compact Embedded) which is an Operating System provided to OEM (Original Equipment Manufacturers) by Microsoft.

5.6.7.2 Technical details

- Intel Xscale PXA270 520MHz
- 64MB NOR, 64MB NAND, 128MB SDRAM
- 2 inch thermal printer, 80mm/second
- Expansion slot for MicroSD card
- Rechargeable Li-Ion Battery 7.4V 1900mAh
- Dimensions: 3” (W) x 8.74” (H) x 1.31” (D)
- Weight: Standard model 500g

Also available from Partner Tech is the EM-100 mobile device, however this misses many of the features of the above mentioned M2 POS device:
### 5.6.7.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Partner Tech</td>
<td>M2-POS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>1,250USD</td>
<td>Price from Partner Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Microsoft Windows CE 5.0</td>
<td>Embedded compact(CE) operating system for minimalistic computers and embedded systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Good</td>
<td>Touch-screen and numeric keypad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good</td>
<td>Designed for mobile point of sale usage so tough enough to do the job</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>9 hours</td>
<td>Approximate time value. Varies depending on usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.1 lbs = 0.500Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>3.5&quot; TFT - 240 x 320</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>GPRS, Wi-Fi, Bluetooth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Minimal</td>
<td>Equipped with a camera and able to show images and minimal video with poor quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>Good</td>
<td>Operating system allows for development of applications and manufactures have licenses that allow them to tweak the operating system to suit their needs.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.6.8 HP Pee Wee

Web: [http://www.peeweepc.com](http://www.peeweepc.com)

5.6.8.1 Presentation

Pee Wee is a tablet PC which is durable, drop and spill resistant and comes with a handle for carrying it around. Screen allows handwriting recognition.

The computer comes with 15 educational games built-in.

Accessories include special keyboards for learning to type:

Vowels are marked with pink, numbers with red etc. Price is USD45. The keyboard also comes in an ultra-learner edition; Price is USD120.

5.6.8.2 Technical details

- Intel® Atom™ Processor N270 1.6GHz
- Intel 945GSE Chipse60GB 1.8" PATA HDD
- 2-in-1 SD/MMC memory card reader
- Water Resistant Physical Keyboard - when screen is rotated in clamshell mode
- Touch pad (Mouse)
- Touch Screen accepts handwriting recognition and virtual on-screen keyboa
- 1GB Standard (Upgradeable to 2GB)
- Size: 9.5" (W) x 7.5" (H) x 1.5" (D)
- Weight: < 3 lbs
- 6-cell Li Ion Battery
- Battery life aprox 5hrs+ typical usage time
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>599 USD</td>
<td>Free shipping on orders over $100.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Microsoft® Windows® XP Home (installed). Also supports Linux.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Good</td>
<td>Touch screen.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>Good</td>
<td>Computer is drop and spill resistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>5 hours</td>
<td>Approximate time value. Varies depending on usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>3 lbs = 1.36Kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>8.9' LCD, 1024 x 600 Touch Screen Color LCD TFT, LED Backlight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>wireless enabled</td>
<td>Equipped with a camera and able to show images and video</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Acceptable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>(windows)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.7  Asian/Chinese
Manufactured Devices

5.7.1  No Name (?)

Web:

Presentation
“This laptop is great for students and businessman alike, whether you are surfing the internet or getting important work finished with 160 GB hard drive coming standard.”
(From manufacturer’s website)

5.7.1.1  Technical Details

- Processor: Intel Atom N270 Processor 1.60GHz
- Memory: 1GB DDR2 SDRAM (533MHz)
- Internal Storage: 160GB 5400 rpm SATA HDD
- Display: 10.1-inch diagonal WSVGA+ (1024x600)
- Graphics: Intel GMA 945
- Wireless: 54g Wi-Fi (802.11b/g)
- Ports and connectors: (3) USB 2.0 ports, VGA OUT, power connector, RJ-45/Ethernet (10/100), stereo microphone in, 0.3 megapixel (VGA) webcam.
- Dimensions (H x W x D): 0.88 x 12.77 x 8.66 inches
- Weight: 3.5 lbs
- Power: Lithium-Ion battery (2200mAh), 2 hours.
### 5.7.1.2 Matrix

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Netbook</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative Impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>US$300</td>
<td>Wholesale price from lightinthebox.com Site offers free shipping to customers in the UK (as of 20-08-2010).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows XP Trial</td>
<td>Comes with WinXP trial version but can be replaced with genuine Windows or Linux</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>User Friendliness <em>1</em></em></td>
<td>Average</td>
<td>No CD drive.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Durability/sturdiness</strong></td>
<td>?</td>
<td>No reliable information available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>2 hours</td>
<td>Disappointingly low in comparison to others in the range.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>3.5 lbs (1.59 kg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Screen type <em>2</em></em></td>
<td>10.2 inch TFT Screen</td>
<td>Active Matrix TFT Color LCD screen with 1024 * 600 max resolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*<em>Data transmission <em>3</em></em></td>
<td>Wireless enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ability to show video</strong></td>
<td>Able to show video</td>
<td>Atom processor is able to process data reasonably for this.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision for user-specific apps</strong></td>
<td>(Windows)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**

---

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?
*2 Angles viewable + Screen quality and type
*3 What provisions does the device have for transmitting data?
5.7.2 Zenithink


5.7.2.1 Presentation

n/a

5.7.2.2 Technical Details

<table>
<thead>
<tr>
<th>Brand</th>
<th>Chinese laptop 10.2' Zenithink</th>
<th>Model</th>
<th>10.2 Zenithink</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>10.2 inch</td>
<td>Type</td>
<td>New</td>
<td></td>
</tr>
</tbody>
</table>

Information

System operation : Google ANDRIOD2.1
CPU : ZenithinkZT108 1.0Ghz
Storage Device : 2GB NAND Flash Optional 4GB-32G
LCD Size : 10.2 inch TFT LCD with resistance touch screen, single point touch (resistive)
Memory : 256M RAM
Display : Touch screen resistive
Resolution : 1024*600 Pixels
Camera : USB camera
USB : 2*USB
Speaker : YES
SD card : 802.11b/g/n Wi-Fi CERTIFIED® network connection
Battery : Rechargeable polymer battery 2400mAh, 7.4V
3G : module USB 3G
WIFI : marvell8696 SDIO 802.11b/g/l/O ports TF card, U disk, RJ-45, DC in, Ear phone
Color : black and white
Weight : 900
Music : MP3/WMA/AAC/AAC+/WAV
Size : 270*180*15mm
PIC : PEG/GIF
Multimedia video : 1080P MP4, 1080P AVI(XVID, H.263, DIVX), 1080P 1080P MKV
1080P 3GP, 1080P RMVB, RM,
On line chat : MSN/QQ/SKYPE/CTALK/LUMAQQ/QQ
### 5.7.2.3 Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td></td>
<td>Price from Alibaba</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Device</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hong Kong Easybuyberry Co. Ltd</strong></td>
<td><strong>10.2' Zenitink</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cost
- US$100 - US$170 (depending on amount of devices bought).

### Operating System
- Google Android 2.1
- Though still new, the operating system is a good performer on mobile platforms. Expected to be the same on tablets.

### User Friendliness *1
- Touch screen

### Durability/sturdiness
- ?

### Battery life
- ?
- rechargeable battery

### Weight
- 900g

### Screen type *2
- 10.2 inch resistive touch screen

### Data transmission *3
- Wireless enabled

### Ability to show video
- Able to play video
- Good video display with 1024 * 600 pixel resolution

### Provision for user-specific apps
- (Android 2.1)
- Wide variety of apps already developed and can be developed easily for the Android OS

---

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.7.3 Hot Eee PC


5.7.3.1 Presentation
n/a

5.7.3.2 Technical Details

- **CPU:** VIA C7-Mobile processor 1.6G Hz and VIA chipset (Upgradation to Intel Atom N270 with the Same Price!)
- **Operation system:** Windows XP Trial Version (We recommend that you install a genuine copy of Windows XP after purchase)
  - Memory: 1GB(DDR2)
  - HDD Storage Device: 160G
  - LCD display: 1024’600
  - VGA: S3G UniChrome Pro II
  - LAN: 10/100M Ethernet Access
  - WIFI: 802.11b/g
  - Keyboard: 80keys Standard English Keyboard
  - Mouse&Touch pad: Build-in touch panel, set two shortcut key, and support usb port mouse
  - USB Port: USB 2.0 x 3 ports
  - Build-in camera: 1.3 MEGA Pixel
  - Card slot: 1 SD Card Slot
  - Sound effect: In focus Audio
  - Build-in stereo speaker
  - Build-in Microphone
  - Electric current: CPU 15W
  - Battery: 3CELL-2100MAH
  - Size: 250’185’30mm   NW: 1.25KG
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative Impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>US$286</td>
<td>Price from lightinthebox.com Free shipping included.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows XP trial version</td>
<td>Installation of full version operating system will be required after purchase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td></td>
<td>Casing comes with improved scratch resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>4 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.2 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>10-inch WXGA LCD screen</td>
<td>1280 x 600 colour resolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td></td>
<td>Wireless enabled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td></td>
<td>Able to do show video</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps</td>
<td>(OS dependant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.7.4 HiVision NB0700

Web: http://hvsco.com/ProductsView.asp?articleid=788

5.7.4.1 Presentation
n/a

5.7.4.2 Technical Details
- CPU 400Mhz
- 1GB memory
- 64/128 MB RAM
- 3 USB ports
- SD socket
- Built in microphone
### Matrix

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hivision</td>
<td>NB0700</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail/Amount</th>
<th>Qualitative impression</th>
<th>Points (1-5)</th>
<th>Weight (1-5)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>US$98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Linux/ Windows CE</td>
<td>Customized version of Linux required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Friendliness *1</td>
<td>Poor</td>
<td>Described as sluggish and generally not very good looking. Runs basic office applications.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability/sturdiness</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>Lithium, 3 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>650 g (incl. battery)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen type *2</td>
<td>7 inch, 800 x 480 pixel display</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission *3</td>
<td>Wireless enabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to show video</td>
<td>Poor video capabilities</td>
<td>Poor pixel display and slow processor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for user-specific apps *3</td>
<td>Not very good</td>
<td>Apps harder to design for custom Linux OS and Windows CE as option.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 how easy is it to turn on the device? How big is mouse pad? Touch-screen?

*2 Angles viewable + Screen quality and type

*3 What provisions does the device have for transmitting data?
5.8 Other references:
The most popular device being used by mobile and corporate teams in Uganda right now is the Lenovo ThinkPad T400. Among the companies in Uganda providing Lenovo ThinkPads to their employees are Century Bottling Company, British American Tobacco and the UN.

The companies give the device’s sturdiness and durability as the main reason for having chosen it. The internet supports this with reports of T400s having withstood multiple drops and bangs. Other features are long battery life (7hrs) and spill resistant keyboard. Long battery life would be beneficial to workers spending a lot of time in the field.

5.9 Accessories

Most of the laptops (Laptops, Notebooks and Touch PCs) can be equipped with additional features using their USB ports. This provides for Bluetooth connectivity, biometric access control, e.g. fingerprint, modem and GPS connectivity.

Additional accessories are special covers and carrying cases for the laptops as well as solar powered chargers.

Speakers, Solar Charger, GPS, USB internet dongle, Bluetooth USB, USB Fan, USB Light,
6 Contact

Software Factory Uganda
Ntinda Road, plot 121 – P. O. Box 28726
Kampala – Uganda

Mail: info@softwarefactory.ug
Web: www.softwarefactory.ug

Rune Kokholm, Concept & Product Development
Mobile: +256 (0) 776 886 996
Mail: rune@softwarefactory.ug

Raymond Rugunda, CEO
Mobile: +45 20588838
Mail: raymond@softwarefactory.ug