The Rise of the Tablet

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INTRODUCTION

Not so long ago, science fiction writers were visualising what the future would be like and how humans and computers would interact. It was within this realm that people began to see characters in movies and television shows using hand held devices with touch screen capabilities casually performing computerised tasks (Dalakov, 2010). With writer's imaginations being slightly ahead of the technology of the time it was not until for some decades that it became possible to create such a device. In the 1980's the tablet starts to take shape and be seen as a viable device by some of the major players in the computer manufacturing. Apple release the "Newton" along with a host of other companies all jostling for market position with their own versions of the tablet but unlike the tablet of today these were pen driven devices with handwriting recognition software. Unfortunately none of these devices where ever really embraced by the consumer, some because they were not user friendly others because they were more suited to being used as a PDA (Personal Digital Assistant) rather than a tablet computer.

It was Bill Gates that coined the phrase "Tablet Computer" when in 2001 he announced to the world at the COMDEX conference in his "State of the Industry speech" that the Tablet would become the most popular form of PC within five years (Hodges et al., 2012). He then went on to reveal the Compac Windows XP Tablet and Acers Tablet. These were unlike the previous attempts boasting full colour screens with their own operating system but still relying on a stylus for single point input. Again many companies came out with their versions but once again none of these tablets captured the consumers or the professional's eye. It was not until 2010 that Apple announced their version of the tablet in the form of the iPad. This was popular and offered consumers a totally new experience in computing. It also showed the way for other companies to follow suit and create tablets of their own.

However of late, there has been a move to more hybrid tablet/laptop devices. For instance, the Microsoft Surface Pro 2 running Windows 8.1 which has an improved battery life over the first Surface pro. The accompanying keyboard however really only works when at a table. More preferable are the hybrid Windows laptops where the screen can be detached and used as a tablet. The Asus tx300 is one such hybrid laptop/tablet where the keyboard dock part actually functions as an additional battery as well as supporting a separate hard drive. The Asus Transformer Duet goes one step further and runs Windows 8 and Android on the same tablet. It is a true dual boot hybrid and we can expect to see more of these in the days ahead.

BACKGROUND

As Media tablets become more affordable their usefulness has become more apparent. As the operating systems evolve and new faster processors are introduced the home user now can pick their tablet up from where ever they are in the home and turn it on, and without having to wait a couple of minutes for it to boot up, they

DOI: 10.4018/978-1-4666-5888-2.ch571

are online almost instantly, emails, social networking, general surfing it is all at their fingertips and it is this tactile approach that people enjoy there is no procedure to go through the interface can be customised to any way the user wishes and with the stroke of a finger it can all change. Its intuitive design makes for sharing the experience much easier due to its compact size it is easily passed around be it showing holiday pictures to explaining homework or giving directions. The media aspect of the tablet is also very important as Internet speeds increase and streaming becomes more of a possibility or even through saved or downloaded content the capabilities of the tablet as an entertainment device come to light with this content been able to be watched in most cases in HD quality video. All this coupled with its mobility with the availability of 3G connections allows the home user a non-cumbersome complete mobile solution. But it still remains that it is in its simplicity that the tablet succeeds and why it will remain so successful and a must have for the tech savvy household and even for those who have little or no tech knowledge (Dodge, 1997).

A salesman for instance can display his products in a web based format that everyone is used to and even hand over the tablet to the manager/customer and let them browse the catalogue themselves. Projected sales and profits and stock levels can be easily displayed and orders easily taken, new products can easily be demonstrated in HD video therefore allowing the salesman to stay ahead of his competitors. Using a tablet as a sales tool will save time for both parties involved and increases the productivity of the salesman as he is able to provide a professional presentation and affording the customer the ability to view future products in a 3d image and all at the touch of the screen. Another benefit to a company is that there are no volumes of paper be it documents or promotional flyers that the salesman must carry around. The tablet will reduce the amount of paper and printing used by a company in their sales force as the tablet will display any and all types of document and as printing is a large part of a business expense especially colour printing the tablet easily becomes a document viewer .

CIOs in the enterprise space already expect to cut spending on printer supplies…..What is more, 90% of iPad users already believe they would print less with access to work documents on their tablets. (Morgan Stanley, 2011).

Stock control in a warehouse is another example of how versatile the tablet can be. The warehouse manager can carry the tablet around with him and have full access to the company's database and see what stock levels are recorded compared to what is physically present. A hotel in London supplies its guests with a tablet during their stay with pre-programmed site-seeing and shows and things to do and a taxi service the tablet in this case acts as the guests own personal concierge with all purchases being charged to the customers hotel bill. A Motor shop body repair company can use tablets in the quotation of prices with pictures taken and a detailed damage report completed by the body shop manager and the customer all on the tablet and is used as an exact record of what is agreed to be repaired. This is sent directly to the insurance company for evaluation and to await confirmation of cover by the insurance (Flynn, 2010). In the boardroom the tablet is used as a performance dashboard showing the members of the board exactly how the company is progressing and highlight any problem areas. It is a good platform for business analytics (Schmidt et al., 2012). Each member is given a tablet at the beginning of the meeting and can browse the data for themselves This would only be the tip of the iceberg as far as business applications for the tablet are concerned and as time goes on and more and more technologies come online and with the integration of the tablet into everyday business practices we will see further business professionals using this medium as a vital tool in the battle for business.

As with all new technologies security is of the utmost importance. Business's will need to adopt security procedures and policy's to deal with how customer account details are stored and how the corporate database can be accessed as customers account information and sensitive corporate data will be easily accessed if the tablet where to be stolen or left behind at a place of business. Data transmissions and their security will be of concern as in large organisations the tablet will be unable to store all of the organisations data this would refer to both the medical profession and in the corporate sense and as the tablet becomes more common the increase in data transmissions between the tablet user and the organisations central data storage will increase and more than ever the need for a secure and reliable encryption method of all transmissions will be required (Weichel et al., 2013).

Security solutions for this medium will need to move quickly as there are several operating systems and

no coherence between any of the main manufacturers. This is nothing new in the world of IT but as tablet integration is moving so quickly IT administrators will need to adopt new skills to manage their devices. The tablet is a connected device in that it performs its functions when it is in a connected state that can be to the Internet or cloud computing (which is where the tablet will excel (Schmidt, 2006) or a organisations servers so it is in the encryption of the transmitted data that most of the security will be placed but there are already procedures in place for normal security much like those in place for a stolen or misplaced laptop but because most of the tablets use flash memory it is easy to wipe all traces of data should a security breach take place. Apart from the usual password procedures a company can use a clean slate protocol installed in all their tablets and if a tablet has not logged on to the corporate portal within a given period of time the tablet will initiate a system restore and lock out from all corporate resources and users. This will provide several benefits to the company with the user having to login regularly the tablet will be updated with the latest data and the company will have that days data and knowledge of that day's activities and in some cases the users locations.

FUTURE RESEARCH DIRECTIONS

It needs to be remembered that the tablet we see today has only been around for the last 4 years and its full potential is not yet been realised. So as we look to the future it can already be seen that this technology has almost limitless potential. A technician out in the field to repair a complex problem can use the tablet as a reference to examine schematics or using the video player as an assistant by utilising the video feature be it YouTube or a company's own tutorials to assist them in the repair. Also the technician can use the tablets camera to photograph or video the problem and send it to a more senior technician for evaluation and solution (Villar et al., 2011).

In education schools are beginning to see the benefits of the tablet as an educational device removing the need for large school bags full of dog-eared books. This will continue to evolve in the class room with the tablets integration into class work through white boards. The teacher will be able to use the white board that will be linked with the tablets in the class so the children will have all of that days lesson's and any examples on their tablet along with reading material to help with their homework or study when they go home. A complete book or syllabus can be stored for reference. If the IT infrastructure in the school has the capabilities the tablet can be connected directly to a virtual learning environment that will enable the students to learn in a self-motivated manner. Any unwanted functionality can be blocked or removed by the administration to keep the students on track.

Medical applications for this technology are another exciting field that can be utilised in many different ways with predictions that 1 in 4 doctors (25%) and dentists plan to purchase a tablet PC within the next year (Shirazi et al., 2013). A doctor can simply use the tablet to explain to patient details about their case and subsequent treatment needed as well as having wireless access to the patients charts and complete medical history the doctor will be able to make his diagnosis having all the facts at hand or likewise for a surgeon they can take the tablet to the bedside of their patient before surgery and use it to explain the procedure in a more understandable format and hopefully allay any fears the patient may have. Consultants will be able to view high resolution images such as scans, MRI's, x-rays and other complex imaging through the tablet in high definition with the ability to zoom in on points of concern. As mentioned dentistry is another field that is embracing the tablet it enables the dentist to show his patient where the problem lies explain the treatment and addresses any concerns the patient may have.

We can also expect disposable tablets. For instance, the Ubislate Android tablet with 1 GHz processor costs £29.99 online. This surely points to a short term future where tablets become throw away. We can expect to see tablets infiltrating many public spaces such as cafes, airports, buses, taxis etc. These usually require little maintenance and thus are suited to public spaces.

Another trend will be convertible laptops. Convertible laptops convert from laptop to tablet at the push of a button or the swivel of a hinge. They are generally super-thin and lightweight, and can be slipped inside your bag without too much bother. A typical convertible laptop like the Lenovo IdeaPad Yoga has a processor that can cope easily with every spreadsheet and document you open and 5pm comes you will still need to do a bit more research on way home as you can switch into tablet mode. These are the devices Windows 8 was built

to run in a bid to blur the boundaries between regular laptops and tablets. It does this with its touchscreen controls and new user interface where programmes and apps are selected by touching tiles.

CONCLUSION

While the tablet is still in its infancy and its true potential is yet to be known it is still a presentation device in that it is a user friendly way to display data, video anything you can think of but when it comes to sitting down to do the difficult tasks like data entry or programming or even arranging the material to be displayed it is more favourable to use the desktop or laptop. The tablet cannot compete with the processing power, storage or content creation of the modern computer. This being said the tablet will revolutionize the way people interact with data. The tablet has opened up new ways for IT to be incorporated into the everyday life of personal users to the companies and organisations. It will benefit the user that is intimidated by the keyboard whether it is on a laptop or desktop. Its size and portability allow the tablet to go places that the laptop is just not convenient to use. The inviting tactile sensation that the tablet introduces to modern computing will win hearts and minds of its users regardless of what field it is used in (Schmidt, 2011).

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KEY TERMS AND DEFINITIONS

Apple Newton: The Apple Newton was a stylus based computer created in 1993. It utilised Apple's own new Newton OS, initially running on hardware manufactured by Motorola and incorporating an ARM CPU that Apple had specifically co-developed with Acorn Computers. The operating system and platform design were later licensed to Sharp and Digital Ocean, who went on to manufacture their own variants.

Content: Data that an encoder or server streams to a client or clients. Content can originate from live audio or live video presentation, stored audio or video files, still images, or slide shows. The content must be translated from its original state into a Windows Media format before a Windows Media server can stream it. Windows Media servers can stream live streams or stored Window Media files as content.

Media: A term with many different meanings, in the context of streaming media, it refers to video, animation, and audio. The term "media" may also refer to something used for storage or transmission, such as tapes, diskettes, CD-ROMs, DVDs, or networks such as the Internet.

Streaming Video: A sequence of moving images that are transmitted in compressed form over the Internet and displayed by a viewer as they arrive; is usually sent from pre-recorded video files, but can be distributed as part of a live broadcast feed.

Tablet: A tablet computer is a mobile computer with display, circuitry and battery in a single unit. Tablets are equipped with sensors, including cameras, microphone, accelerometer and touchscreen, with finger or stylus gestures replacing computer mouse and keyboard. Tablets may include physical buttons, e.g., to control basic features such as speaker volume and power and ports for network communications and to charge the battery. An on-screen, pop-up virtual keyboard is usually used for typing. Tablets are typically larger than smart phones or personal digital assistants at 7 inches (18 cm) or larger.

Touch Interface: A key component among tablet computers is touch input. This allows the user to navigate easily and type with a virtual keyboard on the screen. The first tablet to do this was the GRiDPad by GRiD Systems Corporation; the tablet featured both a stylus, a pen-like tool to aid with precision in a touchscreen device as well as an on-screen keyboard.