

# Why Is The iPad Popular?

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**Abstract** — *Apple is more than just an industry leader; they are innovators at their very core. They don't just modify their technology, or the technology of their competitors, they invent technology. The apple products are sleek, stylish, and are focused towards everyday user. With the apple "app-store" technology the use-fulness of the devices grows exponentially. Above all, the products are marketed exceptionally well with their very own marketing strategy. So why is the iPad so popular? It is no surprise that the apple's unique marketing philosophy and the faithful customer base contributes largely towards the fact. It is a combination of the device's physical aspects and the application store that makes iPad the most sought after device on the market today.*

**Index Terms** — iPad, Apple

## I. INTRODUCTION

Apple was not the first to get into developing tablets, Microsoft was. But Microsoft devices were not sold as Apple iPads are sold. The simple reason for this is Microsoft was too early, Apple got there in the right time.

According to Gartner Inc., the media tablet market is projected to grow 700% over the next three years [1]. The world is thanking apple for that. It was predicted that Apple would sell about 3.5 million iPads in the U.S. in 2010, when it was released. But the predictions were demolished by consumers. In the first 80 days after release, alone Apple sold 3 million iPads. According to the New York's Bernstein Research, these outrageous sales gave the Apple iPad the fastest adoption rate of any tech gadget in history [1]. Apple received the highest-ever score for a computer company on the American Customer Satisfaction index due to the propagation of the iPad [1]. So all these evidence leads to one last question, "Why is the iPad popular?"

The newest arrival of the iPad product line is iPad 2, with staggering 15million sales in the first 9 months of its release. The new arrival has a bright 1024x768 pixel display, the new Apple A5 dual-core processor, 512MB of RAM and a 200MHz bus. iPad2 measures 18.5cm by 24.13cm by 0.8636cms and weighs only 0.6kgs, making the iPad the ideal handheld device [2].

One of the main reasons for the iPad to be popular was the time it was released. Steve Jobs struck at the right time. In today's world, computing is more about accessing content and tools through the cloud. Most of the users are tending towards not running software locally on a hard drive. With the rapid increase in wireless technologies and connectivity, people are allowed to get online almost everywhere [1]. The lightweight, handheld, iPad which is always connected to the internet is

ideal for this purpose.

The number of applications available for the iPad is the next reason for the users to buy the iPad. There are more than 35000 applications for the iPad currently and the number is growing. There is an application to virtually do anything a user want.

Another reason for the iPad's success was the unprecedented levels of speculation around the iPad prior to its unveiling. It literally drove the sales, as did the aggressive enthusiasm of early adopters [1]. iPad was able to quickly replace many of the devices that were used by the time it was released. E-readers such as Amazon Kindle are some of the victims.

The iPad is tailored for web browsing, email, and even viewing and editing documents, therefore it can take over some functions of laptops as well. In fact netbook and notebook sales have slowed recently and iPad is the reason [1].

In this research paper the practical applications of the iPad will be considered first as it was why people got around the iPad. These practical approaches will mainly not only be the day-to-day applications of iPad such as entertainment, but much higher possible useful applications of iPad will also be considered here ([1],[2],[3],[4],[5],[6],[7]). With no doubt the higher purpose which the iPad serves will be one of the biggest reasons to sky-rocket sales of the iPad. Later in the paper the technical aspects of the iPad which enforces the integrity of its design for both users and developers will be discussed ([8],[9]). Next a comparison of its features and a comparison with the competitive devices that are in the market are conducted, concluding the paper with a close analysis of the popularity of the iPad ([1], [10], [11], [12], [13]).

In the days that followed Steve Jobs' death, he was remembered for the change he created in the world of technology. He was creating experiences, not technologies or products. He and Apple were creating a new symbolic register in which we all might participate, even if we all didn't purchase.

### A. iPad And Healthcare Industry

IPad can be considered as a replacement for many things. It is obviously making our lives easier. We can use iPads in business, education, transportation, communication, health sector and etc. But, when it comes to medical sector, use of IPad is not yet popular.

If we consider the medical sector, iPad is rather like God send as it will be able to provide numerous facilities for medical personnel. According to Eric Berger's (2010) journal [3] he reviews ideas of several medical personnel. In the journal,

Ilfat Husain, a fourth-year MD/MPH student at Wake Forest University School of Medicine, who also is the founder and editor of *MedicalApps.com* states the potential facilities that iPad would be able to provide to the medical sector, such as, text boxes on relatively large screen of iPad making medical students to easily read, rather than on a much smaller iPhone, means for physicians to view and update patient records, patient education through iPad with its user-friendly interface and large screen. It is obvious from these facts that, iPad has a much brighter future in the medical sector, according to Eric Berger (2010) [3].

Thus, it is high time that we move our discussions more towards, addressing the iPad's contribution towards the medical sector.

The web article by Joshua Topolsky on "iPad 2 Review" [4], explains the hardware and software detail of iPad 2. Those configuration details points out the possibility of combining the iPad and health sector tremendously. A major area, that the doctors or nurses can use iPad is where charts, reports, and other graphics related representations of patients'. Currently, patient data is analyzed manually or by using desktop or laptop computers. Emergency physician Nicholas Genes, MD, also states that, the importance of having a bigger screen for iPads unlike iPhones, which makes a huge difference for the health sector related implementations[3]. The advantage of having a bigger screen is that the doctors and nurses will have the privilege of viewing various patient details as charts. According to him, in iPhones, there's an app which helps in scheduling and reviewing lab reports. Yet, those apps don't provide the facility of entering information to a chart. Thus, Mr. Nicholas Genes believes such capabilities will be available on iPad.

Not only that, the doctors and nurses will be spared from the pain of taking down details and again entering them into a desktop or laptop. But, if an iPad is to be used, life will be more easy for them, as it is very easy to carry, they will be able to enter patient data real time into their patient database. According to technical details of iPad2 provided in the web article [4], the iPad has high frame rate for graphics, which would give a quality to all the graphics related medical work. Using iPad, doctors can educate their patients through pointing out how a particular disease has functioned inside the body through advanced graphical facilities which comes with the iPad. The 1GHz, dual core A5, processor in iPad2 enhances the quality use of faster service for the customers, which in turn would be a great benefit to the medical community.

The use of a real-time camera would open doors for many areas in medical sector. Taking photographs of infected areas of a patient, and later analyzing them would be a good option in having an iPad. But, according to Joshua Topolsky on [4],

iPad cameras are not up to the standards yet. An excerpt of the article on the iPad camera quality says that iPad2 cameras are not up to standard, as the sensors used are not in top quality. The "HD" lens around back (which means it's roughly a single megapixel shooter), and lowly VGA cam on the back adds to the poor quality of iPad cam. Neither one of these produces remotely satisfying results for still shots, and in particular, the back camera just seems utterly second rate according to Joshua Topolsky's explorations.

Face Time/ Photo Booth facility on iPad would become handy on analyzing medical diagnosis. You can get nine different views on the images of a video call, with views like thermal camera and x-ray plus seven more views [4]. The x-ray view will be very useful for the doctors. They will be able to diagnose patient condition on real-time through video calls, which would become very popular. Apple needs to improve the image quality more to cater this need professionally.

### *B. iPad And The Education*

Long ago, schoolchildren only needed a slate and chalk for all learning. Similarly, today's tablets can provide for every kind of learning requirement without external devices like a mouse or keyboard.

Modern educators are voicing the need for learning to be more contextual and engaging. Mobile phones and digital whiteboards add a level of interactivity, but not a lot of computing power, and a laptop is not always convenient. The iPad fills this gap by enabling a host of activities such as referencing, collaborating, and creating content.

Many iPad applications allow the device to be used as an eReader but with more interactive features than other e-texts... iPads can also serve as part of a student response system and for numerous other purposes. iPads have longer battery life than most laptops, and educational applications designed for the iPad often incorporate audio, video, animation, and illustrations. iPad apps frequently make use of the touch screen for navigation and exploration.

"A wide range of applications support teaching and learning, including many apps developed by institutions and third-party developers. For individual study, students might find that flashcard apps like Cram offer a rich, interactive learning opportunity. Alternatively, they might turn the iPad into a graphing calculator by downloading the Pi83 application or challenge themselves with vocabulary word games like Word Warp. In a classroom setting, polling applications such as eClicker can collect, collate, and present student responses during lectures or discussions. Or the iPad might function as a backchannel tool using cloud services like Twitter or Google Moderator." [5]

Students will now experience the most amazing textbooks they have ever read in their life. It is possible to flip through a book by sliding their finger along thumbnail images of the pages. If they don't know the definition of a word they can find it easily and quickly by one tap which takes them to a

dictionary. Drawing and understanding 3D images is not easy if we use white board or Paper. But there is solution to this issue in iPad. There are several iPad applications which handle 3D images in effective and efficient manner. For example students "can use a finger to rotate a 3D object to show a human brain from every angle." [6]

Because of the budget constraints many schools use the same books year after year, long after the content is out of date. But with textbooks on iPad, students can get a brand new version each year for a fraction of the price of a paper book. They can discover and download iBooks textbooks from the Textbook section of the iBookstore directly to their iPad.

Three iWork productivity apps help students and teachers put together professional looking documents, presentations, and spreadsheets.

- Pages- this is a powerful word processor with simple to use layout tools and a large onscreen keyboard.
- Keynote- helps to create presentations with animations and effects.
- Numbers- lets students and teachers build compelling, attractive spreadsheets in minutes, including tables and charts.

"And now with iCloud built into iWork apps, you can keep your work up to date across all your iOS devices. Create a document and it automatically appears everywhere. "[6] So you can do things like taking notes on your iPhone and editing them on your iPad later. When you finish what you've been working on, use AirPrint to print it directly from your iPad.

Imagine for just a second, how the textbook industry would change if every student in a classroom had a tablet. Textbooks would no longer be printed on paper, and the publishers could then charge a rental fee. The information could be immediately updated unlike the current format of a textbook that in some instances is obsolete before it is in the hands of the user. When the rental time expires, there is nothing to throw away or take up space. Imagine the learning that can occur when students and teachers are connected in a way that desktops and even laptops cannot provide in the digital age.

### C. iPad And Mobile Entertainment

It is iPad's versatility and portability that has made it so popular. Jason Snell describes about car entertainment systems. Usually car entertainment systems are very expensive equipment which usually cost more than \$1500. They basically include music and video playing capability. When we compare the price of the iPad and car entertainment system, the entertainment system is far more costly than the iPad. Interestingly, iPad has all the functionality that the expensive car entertainment system has. It can play high quality video on a super bright 10.1 inch screen with sounds. [7] There's no need to fix it on a stationary location like the entertainment system.

The integrated Global Positioning System and related applications in iPad allows replacing the path finding GPS with a simple iPad. Unlike traditional GPS systems that comes with few predefined functions, the iPad can provide the user a rich experience with hundreds of apps available for thousands

of various tasks that can be easily installed and removed using some simple gestures on the touch screen.

Jason Snell directs our attention to another important aspect of life that we don't talk much often in technical discussion. That is parenting. iPad gives a lot of wonderful things for parents to make their children happy and get some relief from their unlimited demands. [7] Attractive games and educational applications that iPad offer are ideal tools for children to have fun as well as to gather knowledge interactive.

The versatility and portability of iPad has caused threats for many traditional systems like the ones that are mentioned above.

Although Jason Snell claims that iPad can replace these specialized equipment made solely for a particular task, [7] it is doubtful whether he is correct since as we cannot expect the performance, efficiency and convenience that can be achieved from a specialized/custom made equipment by using a generic small scale computer like iPad which only has a generic processor and some additional generic components..

## II. TECHNICAL ASPECTS OF IPAD

### A. iPad for Enterprise Applications

Imagine the advantage of carrying a SQLite database and the ease of using that on a mobile device which powers on instantly and has a large screen. Imagine browsing through a sales items category through a multi-touch device with up to date details and images. iPad is coming with multiple facilities and applications. Among what was mentioned above there are, Database applications, Bar Code Scanning, printing from iPad, making applications with 3D graphics, Video conferencing, gaming and internet. Eventually iPad will become the virtual desktop that is used as the core enterprise level application execution point [8].

Checking the status of the stock market, reviewing a financial statement, analyzing a business intelligence document or simply checking market growth graphs will be just a swipe away with the iPad. iPad is becoming a popular device among the managers, directors, CTOs and CEOs of companies. So the iPad applications will not just be eBook readers for undergraduates or game-pads for teenagers, the iPad will evolve into a device with a much larger purpose.

With Introduction of iPad, Apple has given a strong benefit to the organizations who are planning to go mobile for their business applications such as BI, Sales Force Automation etc [8]. Though, some analysts have declared that the iPad is not ready for Enterprise Application because of Security, Some are keeping a wait-and-watch approach. Lot of Enterprise Applications has already come to the market. Giants like Mercedes-Benz, Wells Fargo has already started experimenting their enterprise level applications on iPad [8]. Competition with other platforms is hurrying the development of enterprise applications. A survey reveals that 54% of Android/BlackBerry users are already planning to switch to iPhone/iPad. Eventually, it will be Apple [8]. The enterprise

level application developers will be waiting for that day which may be not so far away.

### B. iPad and the Security

There Apple iPad is not only for e-book reading and entertainment. It provides us with facilities to do serious business and corporate activities by access corporate services. It has many security features that can be applied locally as well as over the air from a remote location.

Security features in iPad can be categorized into four groups [9]

- Device Control and Protection
- Data Protection
- Secure Network Communication
- Secure Platform Foundation

#### a. Device Control And Protection

Strong policies are imperative for corporate applications. Unauthorized parties gaining access to corporate services could lead to drastic consequences. Therefore iPad has implemented several defense mechanisms to ensure device control and protection.

Passcode policies- passcodes prevent unauthorized access to device. iPad allows selecting from an extensive set of passcode requirements to suit different security needs. It also supports Microsoft Exchange ActiveSync Passcode policies.

Policy enforcement- can be configured to use Microsoft ActiveSync policies if Microsoft Exchange Server account is available. Else, policies can be distributed as part of configuration profile for users to install.

- Secure device configuration- Configuration profiles can be both signed and encrypted.
- Device Restrictions- Access policies can be enforced to limit the features that are allowed to be accessed.

#### b. Data Protection

Protecting data stored on iPad is important for any environment with a high level of sensitive corporate or customer information.

- Encryption – offers 256 bit AES encoding. Encryption cannot be disabled by users. Data backed up in iTunes to a user's computer can be encrypted.
- Remote wipe- if the device is stolen or lost, the administrator or owner can issue a remote wipe command to delete data.
- Local wipe – device can be configured to initiate a local wipe after several failed login attempts.

#### c. Secure Network Communication

Since iPad is a mobile device if network security is not properly implemented, the sensitive data that are transferred via networks can be leaked to unnecessary parties.

- VPN – iPad comes with a broad range of virtual private network (VPN) technologies (Cisco IPsec, L2TP, PPTP) These protocols ensure highest standards of ip based encryption for transmission. It also supports network

proxy configuration as well as IP tunneling.

- SSL/TLS- supports SSL v3 and TLS v1 Internet security standards for internet applications.
- WPA/WPA2- WPA provides authenticated access to enterprise wireless networks.

#### d. Secure Platform Foundation

iPhone OS which is run on iPad is a platform designed with security at its core.

- Runtime protection- Applications on the device are "sandboxed" as they cannot access data stored by other applications. System files and kernel are shielded from the users' application space. Accessing other applications should be done using API provided by iOS.
- Mandatory code signing – All iPad applications must be signed by Apple Inc. or the developer.
- Secure authentication framework- provides a secure, encrypted keychain for storing digital identities, user names and passwords.
- Common crypto architecture – Application developers have access to encryption APIs so that they can further protect their application data. AES, RC4, 3DES are some encryption standards used.

These security features allows any user to use iPad confidently irrespective of how confidential the operation he/she needs to perform.

## III. FEATURE COMPARISON OF IPAD

### A. Positive Features Of iPad

- Apple app-store: Apple reports that there are more than 100,000 apps for the iPad alone, and that doesn't count the more than 425,000 apps for the iPhone which can be used in the iPad.[1]
- The iPad travels well: The design of the iPad enables carrying it anywhere the user goes.
- The iPad is great for meetings: The iPad's design also helps to improve the dynamics of face-to-face client meetings when compared with a laptop which act like an barrier between the people. iPad has the video-calling applications such as Apple's FaceTime or Skype to hold an online meeting.
- The iPad works as a second monitor: A number of apps like Air Display, MaxiVista and Display Link allow the iPad users to access their desktop remotely on their iPad. As a result of this, lot of printing is saved.
- The iPad works well with documents: A user can use services such as Dropbox or SugarSync to access the documents on the cloud.
- iPads are good communicators: iPads synchronize nicely with Microsoft Exchange, as well as other email services.

iPad also allow you to use online meeting services such as WebEx and GoToMeeting.

- iPads are ideal for taking notes: iPad users have the ability to create cloud-based notes that are searchable and easily accessible from other devices, like desktop computers, smart-phones.
- iBooks: After a user purchase iBooks, those books are readily accessible on their iPad's bookshelf. iBooks offers a link to a dictionary, the search engine, highlighting capabilities, and the option of adding notes. With the introduction of the iPad, the growing expense of textbooks, and the ever improving e-books, iPad is a very good alternative to paper books [10].
- The iPad turns on instantly: iPads power up instantly and ready to work unlike a Laptop. The SSD is much faster than a HDD in a laptop [11].

### B. Negative Features Of iPad

- Fragile: The iPad has a glass front. So if it falls from more than 5 feet, it'll most probably break the glass front. A shock case can be used to prevent this. But even if an iPad falls it can be replaced for 500\$, still saving some money unlike a laptop or a net-book[12].
- Screen size: It is true that iPad has a larger screen than an iPhone or any other smart phone. But it is not the largest screen on a mobile device, when net-books and laptops are considered mobile. 1024x768 resolutions is packed in to 9.7" display which may result in reading difficulties in rare cases [2][12].
- Expandability: There is only one "dock" connector on the iPad and expansion via USB is not much preferred with an expensive adaptor and limited peripheral compatibility [12].
- Security: Connecting iPad remotely to all kinds of company data from numerous apps, creates the need for new policies and security measures.
- There's no mouse: Therefore interacting with small icons and object are difficult [11].
- No Flash: This disables the use of Flash-based videos and games [10].
- Accounting software: There is a huge number of applications available for the iPad. But there are very few accounting-specific applications available for the iPad.[11]
- Cost: Money you have to spend for an iPad than just purchasing the device because there are accessories and apps which are needed to make the iPad more efficient [11]

### C. iPad vs. the Rest

Darren Yates, in his research "iPad versus the rest", provides an unbiased comparison between iPad and other available portable media devices, netbooks and e-book

readers. Since we are considering facts to find out why is the iPad popular, this article gives us a many valuable facts regarding positives and negatives that are included in the Apple iPad. [13]

iPad is vastly used as an e-book reader. It uses traditional LCD screen as the display with 1024x768 resolutions has a long battery life. Apple assures 10 hour battery life for iPad. The most widely used eBook reader Amazon kindle uses e-ink display and has a less battery life compared with iPad but with more quality. [13] Therefore if someone is looking only for an e-book reader, going for Amazon kindle is a wise decision. But Apple iPad is not just an eBook reader, it has many more functionality.

Although iPad is meant to be used for web browsing and personal entertainment, it lacks support for HTML5 and Flash Videos. It needs additional apps to play flash videos. Rich online text editors and not properly supported. Another major disadvantage is iPad's default browser. Apple has included a mobile version of Safari browser ([www.apple.com/safari](http://www.apple.com/safari)) in iPad, which is a waste of resources. [13] This limits users' ability to experience rich web content.

iPad is incapable of playing High Definition Video on its screen or via the available VGA output. Multitasking was also not supported by iPad on earlier iOS versions, but it's available on new iOS versions. It has no expansion ports like USB and only allows syncing with one computer. [13]

It is lighter and compact than a netbook. However, on the other hand, a netbook offers all these lacking functionality at a lower cost. The user interface of iPad is a huge plus point. The touch interface is really attractive and easy to use.

Other media players like iPod touch and Pioneer Dreambook ([pioneercomputers.com.au](http://pioneercomputers.com.au)) are also in competition with Apple iPad. But these competitors are just single purpose devices dedicated to do a specialized task while Apple iPad is a combination of capabilities of all these specialized functions to a certain extent.

### IV. CONCLUSION

iPad has turned into an excellent traveling companion when considered with other products in the market. Since the Internet is available almost everywhere, the iPad users can benefit the nice feature it gives without much difficulty. iPad is the kind of "product" that completely changed the way people do their day to day activities specially the people who travels often.

But iPad is an appliance, not a general purpose computer. That's because the iPad and other tablets are designed for consuming content, not creating it. Therefore if the iPad is used mainly for consumption, not for activities like data entry, it is a highly usable and efficient device.

In conclusion iPad's true appeal could be its flexibility. The intuitive touch interface, light weight portability, and the large super bright screen have made the iPad a malleable tool for users and developers alike. The Apple brand name and the technological leap of faith taken by the company have taken

the iPad so far. The consumers are showing signs that the iPad will go a long way in to the future of human kind as well.

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