A

Seminar report

on

Google Chrome OS

Submitted in partial fulfillment of the requirement for the award of degree
of Bachelor of Technology in Computer Science

SUBMITTED TO: **SUBMITTED BY:**

www.studymafia.org   www.studymafia.org

<u>Preface</u>

I have made this report file on the topic **Google Chrome OS,** I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to …………..who assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

Introduction of Google Chrome OS

Speed is an unsaid feature of the Google Chrome OS. With Google Chrome's tremendous booting speed and more, users have a lot to say about experiencing 'weightlessness'. Weightlessness, in Google's terms, means never having to wait for the web.

Chrome notebooks boot in about 10 seconds and resume from sleep instantly. Websites load quickly and run smoothly, with full support for the latest web standards and Adobe Flash. The web evolves rapidly.

Your Chrome notebook evolves with it. Every time you turn it on, it upgrades itself with the latest features and fixes. Annoying update prompts not included.

The portion of the operating system needed to operate the device will reside in a read-only section of memory. The rest of the operating system is integrated with the Chrome browser and, like the browser, security updates require nothing more than a reboot.

Chrome OS can run multiple Web applications in multiple tabs and each one is locked down from all others, so vulnerability in one Web app can't lead to exposure in another

What is Google Chrome?

Google Chrome is a free, open-source web browser developed by Google. It was released in 2008, and has grown to be one of the most popular browsers today.

When Google decided to make a browser, they wanted to completely rethink the browser, as browsing now is very different from browsing simple text pages. Now we email, shop, pay bills, and run large application in our browsers.

Use of Cloud

Users of devices running Chrome will have to perform all their computing online or "in the cloud," without downloading traditional software applications like iTunes and Microsoft Office, or storing files on hard drives.

Devices running Chrome will receive continuous software updates, providing added security, and most user data will reside on Google's servers.

User data stored on the device, which is minimal, is encrypted. User data is limited to items such as user preferences. All other data will be stored in the cloud.

User preferences will also be synched to a cloud account, so like any thin client. should you lose the device, you would merely log in from another one and your data and preferences should be there.

Google's Chrome OS, is designed to be a very fast, lightweight flavor of Linux that will be available on some netbooks and other PCs by the end of the year. Google hopes to achieve this small footprint and high performance by shipping an OS with only one installed program - their own Chrome browser.

Users would work, live, and save things online, using Google's own cloud computing services and other similar utilities, like Microsoft's Office Web Apps . This is of course a shift from today's computing environment, where most programs are installed locally on the computer's hard drive

Design goals for Google Chrome OS's user interface include using minimal screen space by combining applications and standard Web pages into a single tab strip, rather than separating the two. Designers are considering a reduced window management scheme that would operate only in full-screen mode.

Secondary tasks would be handled with "panels": floating windows that dock to the bottom of the screen for tasks like chat and music players. Split screens are also under consideration for viewing two pieces of content side-by-side.

Google Chrome OS will follow the Chrome browser's practice of leveraging HTML5 's offline modes, background processing, and notifications. Designers propose using search and pinned tabs as a way to quickly locate and access applications

Advantage of Google Chrome OS

CHROME OS

Google Chrome OS is a lightweight, cloud-based operating system, as a result we won't be able to run complex programs which is not available on the cloud. Need an internet connection to operate.

Open Source

The first & the foremost thing is Chrome OS is an OSS, Open Source Software. The source code will be given & you can download it & can start using it & also you can optimize it in the way you want. So no cost.

Internet

Do you stay online for the whole day??, atleast for the maximum hours, then Chrome OS is meant for you. The OS is focussed for the users who spend most of their computer time on the net.

Speed

When it comes to speed, Chrome OS will be faster than any other OS, Chrome OS is designed in a manner such that it can run on low powered ATOM & ARM processors. It can also boot faster.

Integrated Media Player & Printing Service

Google will integrate a Media Player into both the Chrome OS & Chrome browsers, this will enable the user to play back MP3s & also view JPEGs & can also handle other multimedia files while being offline.

Google had planned to create a **GOOGLE CLOUD PRINT** service which will help the users to print any application on any device to print on any printer without the need of any drivers.

Security Measures

This Chrome OS is integrated with the Chrome browser, thus this OS will automatically update the security system by default. One more thing, most of your work & your data are gonna be stored online, since it is an Cloud based OS.

Other Services

Google's service like Gmail, Google Docs, Picasa etc, all these services will be built-in and also we can have offline access via Google Gears. At this point of view no net connection is needed.

Limitations of Google Chrome OS

Chrome OS is tethered to the Web
Due to the tight integration between the operating system and the Internet, what happens when one is cut off from the Web? Despite high Net penetration rates worldwide, a traveler to a foreign land may not want to pay for online access, which, in some countries, can be very expensive.

A Chrome-based Netbook will still be able to open multimedia files and play videos, but there is no built-in application to open Word or PDF documents. The fact that Google currently has no provisions for installing third-party software is another stumbling block.

Am I sending sensitive information for hackers to sniff?
Further concern is data security. With traffic taking place between the Netbook and the Internet cloud, hackers can sniff out Internet packages and intercept information between a PC and a Wi-Fi router. Most companies use encryption via VPN software to hinder hacking attempts, but this may not be possible with Chrome OS.

Hardware compatibility may be an issue
Last but not least, we were told during the briefing that hardware not based on common standards may not be compatible with Chrome OS. Peripherals such as mice, keyboard and thumbdrives will have no problems. However, Webcams, printers and scanners may be a no-go. Google mentioned that it has a solution to the printing issue in the works, though it did not give a definite answer for other devices.

We love how Google is looking at the future and taking the risk to develop a next-generation operating system. However, we wonder if the lack of offline capability might hinder its adoption since most Netbook users take their machine overseas where Internet access may be spotty or expensive.

Still, there is about a year to go before the first Chrome-based Netbooks roll off the factory floor. So if you have any feedback, you can leave your 2 cents right below.

Methodology

In order to acquire the information required, methods of data collation were used to gather the information and layout in a meaningful manner. The author's considered various means of data collation but decided to use just two, Laboratory experimentation and Survey research. These two chosen methods provided the author's with a suitable amount of qualitative and quantitative data to use. Ethical considerations will be taken into account during the collation of data; this includes the University and BCS (British Computing Society) Ethical Code, which can be found in the appendices.

Experimental Design

Due to Google Chrome OS being a fairly new operating system, there were very few people who would have had exposure to the system. This fact alone made it clear the author's had to expose people to Google Chrome OS before they could gather any meaningful data. Laboratory Experiments focus on keeping all variables the same except the one being measured, the unchanging variables are known are dependent variables.. In the case of this situation, the changing (independent) variable will be the individual being exposed to Google Chrome OS. The individuals were specifically chosen to ensure that there was less chance of biased during the experiment and to increase the variety of backgrounds that could be obtained from random screenings.

During the Laboratory Experiment, the individual was asked to perform various activities using Google Chrome OS from a sheet of tasks. Their ability to complete the tasks was recorded and was compiled into graph's to show who could complete the tasks and who couldn't.

The benefits of this method are that the author's can acquire a small sample of thoughts and opinions on the functionality of the OS, which can be used to gain a verdict on the functionality of Google Chrome. A copy of the experimental design can be found in the appendix

Sample Questionnaire

Apart from obtaining data from the individual during testing, it felt necessary to obtain data prior and after testing. This was to gather opinion about Google Chrome OS before exposing the individual to the OS and allowing them to perform the tasks set out by the author's. Once the individual has performed completed/failed the tasks, they will once again be asked questions regarding the OS now that they have had a chance to use it.

The questions designed allows the individual to give both qualitative and quantitative data (open ended/closed ended answers), the qualitative data will be looked through for key phrases which will be matched upto codes decided upon by the author's that are considered key to the functionality of the operating system. The quantitative questions will be arranged into graph's to show how the individuals exposed to the OS perceive the system; this ties in with what Catherine Dawson says in her book (2009, pg 31)

"Many researchers tend to use a combination of both open and closed questions. That way, it is possible to find out how many people use a service and what they think about that service on the same form."

The benefits of this method is that the author's can acquire data about those who have not used Google Chrome OS and compare the data they gave against the data the individual gave after they had used Google Chrome. This allows the author's to compare opinions and to gauge how easy people think it is to pick up using Google Chrome OS.

Rejected Methods

Although two methods were used, others methods were discussed although not used. These were: -

- Case Studies
- Focus Groups

Case Studies required sufficient information about a situation which could be studied, unfortunately Google Chrome has only been about for the last few month's which means there is not enough information to build a case study about Google Chrome.

Focus Groups are used to gather information quickly from samples of people chosen by yourself, these groups are asked questions about the topic studied and their opinion on it. Once again due to Google Chrome being new, it was deemed not worth using a focus group, as the likelihood of gaining useful information from it was low. Catherine Dawson also backs up the decision within her book (pg 30)

"Disadvantages of Focus Groups include… Other people may contaminate an individuals views.. Difficult to extract individual views during the analysis."

Conclusion

Although Chrome OS does update regularly, the current iteration is more usable than where the operating system was even six months ago.

The quirkiness of a PC without the traditional touches of a PC desktop have been replaced by something recognizable and usable.

As long as Google continues to support the project, Chrome OS will keep improving. One day, and perhaps sooner rather than later, it might even be ready for all.