Red Hat Consumer Version Marketing Study:

An Interview

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Interviewee background

Paul Miller, from Georgetown, CA, has extensive (about 30 years) experience with electronics, having begun his work with analog systems used in military jet fighters.

Paul was first exposed to *nux[1] around 1994 and has several years experience working for an Internet Service Provider (ISP)[2] where he has gained a significant understanding of administering Linux systems and the support requirements of individuals and organizations.

With his many years of experience, Paul knows Microsoft, Apple and *nix operating systems well. Similar to Solaris and other *nix variants, Paul began using Linux with Red Hat 5.0, which was released around 1998, and considers himself to be a "power-user."[3]

Summary Points

- Paul is atypical of the consumer computer market with his skills and wealth of previous experience. Also, he is more willing to endure problems with a maturing product such as Linux as a trade off for using the newest and most technically developed products.
- Having worked as a support technician for many years, Paul also understands that the average consumer does not have the knowledge or desire to maintain their own computer. They look at the computer as a tool for primarily email, word processing, web surfing and games, much as how most people do not know how to maintain their car – they simply want to get in it and drive.
- Red Hat is the distribution of choice for Paul but he recognizes that there is not a large difference between distributions. Competition between distributions is low and focused more on niche markets (i.e. home, business, scientific, embedded) than on head-to-head competition. His choice of Red Hat is mostly because he perceives Red Hat as the largest and most stable distributor and he likes that Red Hat does R&D where many distributors do not.
- Red Hat and Linux in general have come a very long way in the past 6 years but Paul sees that it will be a few more years before it is ready for the average consumer.

Interview

How and where do you use Red Hat?

- A small network at home which combines Apple Macintosh, Microsoft Windows and Linux operating systems. Linux is the only viable solution for my server because Windows can not do what I want, would be too expensive and I am able to leverage skills I gained elsewhere to run this server at home.
- On the desktop, I have one computer set up for Linux and use it quite often. Linux is a growing and maturing product and I enjoy watching its growth with every revision.

Who do you perceive as competitors to Red Hat and what are their strengths and weaknesses?

- The SuSe Linux distro[4] is more focused on business, the Debian distro is focused on providing a complete distro (i.e. no software is left out) and, Red Hat is more "grassroots" with a focus on innovation, R&D. **All** Linux distros are more technical (better) than Windows which is just packaging and marketing driven.
- Windows is very easy to use for the average person but also very insecure. Microsft has done a very good job of making computers easy to use but has dumbed down the process too much by limiting what can be done: "This is all there is, a limited universe". This is a double edged sword – Windows does not have the functionality of *nix systems but the neophyte user has less opportunity to "mess up" things, also. Due to the closed nature of Microsoft (not just source code but their entire process is opaque), there is a lack of trust. Windows lacks security, is expensive and end-user support is lacking when compared to *nix OSes.
- Not everyone wants a command line[5] but choice is important – people should be able to choose if they want to use a CLI or GUI.

What if Red Hat was not available? What would you use?

If Red Hat were not available, I would choose to use the Debian distro. Part of this is cultural, what I am used to and what I have previously used.

What attributes are important to you when you use Red Hat?

- I knew I wanted to use a Linux distro and chose Red Hat in particular because of my expectations of the future market and where it would go. *Interestingly enough, given his comments about Microsoft, one of the reasons he chose Red Hat was because they have better marketing than other Linux distros.*
- I used and tried other Linux distros and most of the reasoning behind my choice of Red Hat was from this research. SuSe might be better for businesses but one problem SuSe may have (in America) is that

it is not made in America. SuSe is made in Germany but SuSe has a very strong presence throughout Europe.

- The biggest problem which Red Hat and all other Linux distros have is with the installer scripts[6]. I went through a lot of pain when I first installed Red Hat due to the poor installer. The installers have greatly improved since I began using Red Hat but there is so much choice available when installing Red Hat – you can get confused but that's the price of flexibility. Besides, you need to install an OS three times to get to know it well.
- Positives for Windows and negative for *nix are that Windows is easy to interface with Netware (a common networking package), Windows provides a consistent user interface (all programs share same menu structures, icons, shortcut key combinations, etc.), is geared towards people who do not want to learn (are more interested in the task at hand than the computer itself) and appears safer.
- Negatives for Windows include that it is less secure and is less flexible to use than *nix.
- X-Windows (the framework upon which most GUIs for Linux are built around) has many problems due to the plethora of video cards available and multiple standards. But, like much *nix software, it has matured greatly since the mid-90's.

Which competitors do you perceive as best on each attribute?

- Price is not an issue with Linux distros since all can be acquired for free.
- Mandrake installs better than most other Linux distros and has a good default GUI for most people – so much has to do with appearances.
- Debian is available on floppies (many of them) and strives for backwards hardware compatability.

If you could change one thing about Red Hat, what would it be, and how would it help you?

- Hardware compatibility lists would be of higher quality. Currently these lists include hardware and drivers which may not work as espoused. This is due to many naive but enthusiastic people saying the drivers/hardware work when, in reality, they may only work in a very specific situation. Windows is much more mature on this point because most (if not all) hardware manufacturers produce their own drivers in-house. Microsoft does very little, if any, driver development but, with a 93% market share, they can afford not to. If a hardware vendor wants to reach 93% of all computer users, they must develop a driver on their own.
- Also related to hardware compatibility lists, this would save time on installs and configuring machines.

Segmentation Matrix for Red Hat & Competitors

From the interview with Paul, the below segmentation matrix was developed to show what characteristics he values in an OS and how Red Hat compares with other *nix distros (because all *nix distros are very similar) and with Microsoft OSes (again, because all Microsoft OSes are very similar).

	Weight (%)	Red Hat	Average *nix distro	Windows (all distros)
Quality Attributes	**40**	**33.8**	**33.8**	**23.2**
Flexibility	7	5	5	2
Reliability	7	5	5	2
Security	9	4	4	1
Hardware Compatability	8	3	3	5
Software Availability	3	5	5	5
Software Quality	6	4	4	4
Price Attributes	**20**	**18.8**	**16.4**	**8.8**
Unit Price	4	5	5	1
Volume Price	4	5	5	1
Support Costs	6	5	4	1
Installation Costs	6	4	3	5
Convenience Attributes	**30**	**28**	**24.6**	**18.4**
Flexibility	6	5	5	2
Installation	6	4	3	5
Support	6	5	4	3
Easily acquired	3	5	5	5
Downloadable	3	5	4	1
Customizable	4	5	5	1
Metcalf's Law	2	3	2	5
Signalling Attributes	**10**	**10**	**7.6**	**4.4**
Logo	3	5	1	5
Trust	7	5	5	1
Sum of Weights (%):	100	90.6	82.4	54.8

Note: weights and summaries are expressed as a percentage but scores are recorded on a 5 point scale with 5 being the highest and 1 being the lowest score.

Notes

[1] "*nix" is a common abbreviation used to encompass all of the many Unix variants, Solaris and Linux being two of the more common ones currently.

[2] By looking at bandwidth instead of data flow, the Internet can be broadly broken down into 3 separate areas (but there is much overlap and blurring between these areas):

First is the backbone, maintained by a consortium of universities, governments and large companies, they maintain what is very similar to a long-distance telephone infrastructure. They are analogous to the producers and warehousers in a manufacturing system.

Second are the ISPs themselves. Many backbone providers also function as ISPs either directly or through subsidiaries but there are also many independent ISPs of varying size and sophistication. An ISP is the middleman between the manufacturer and final customer. Some ISPs act as meta-ISPs, buying bandwidth from backbone providers and reselling it to smaller ISPs.

Third are the actual users of the Internet. They connect their computer to an ISP through various methods including dial-up, cable, DSL, T1 lines, etc. However, an end-user can also be host to a network themselves.

[3] In many magazine articles and books, computer users are classified into 4 levels of descending skill/knowledge: Guru, power-user, user and newbie.

[4] "distro" is a very common term used which is short for distribution. Currently it is estimated there are over 300 distributions of Linux available but only about 13 major distributions.

[5] Command Line Interface, or CLI, is the basic interface between humans and computers. In most operating systems, the GUI (Graphical User Interface) runs on top of the CLI and the CLI is easily accessed. In all but the newest of Apple's OSes, there was no easy way to access the CLI without special software and until the latest Windows OSes, all of Microsoft's OSes allowed relatively easy access to the CLI.

[6] All computer programs, including OSes could, in theory, be installed by hand without the assistance of an installer. However, most of the work involved in installing a program is very basic, repetitive copying of files and "pointing" them – telling files where other files are located. With a modern OS, there are literally thousands of files. To copy them by hand and point them would take a skilled individual days. An installer script (or program) can take care of this process (depending on the speed of the computer) anywhere from 10 to 30 minutes.