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Desktop Open Source

by ***Bryan Stroubeé***

Recently, a grass roots software movement known as "Open Source" has begun to stir and to successfully challenge some of the world's biggest companies. Open source software has sent waves through the business market by powering the backbone of the World Wide Web [**3**]. Many soothsayers are already predicting the death of proprietary desktop software in exchange for a new world, powered by free software and distribution.

The distinction between free software and open source software is often misunderstood. Open source code software is freely available, however, a large gap exists between open source and other products such as shareware, or free programs like Microsoft Internet Explorer and AOL Instant Messenger. In commercial software, the inner workings and instructions describing a program and how it runs, called the source code, are usually concealed and hidden from the user. Generally this is logical; if a company is going to sell a product, why would the company give away its instructions on how the product is constructed, therefore allowing others to produce, sell, or give away the same product? Open source software is not only freely available, but includes the source code with all of the programs [**4**].

perhaps the strongest incarnation of open source is the GNU/Linux operating system (further referred to as "Linux"). Linux redefined the way certain types of software are developed. "Until the Linux development, everyone believed that any software as complex as an operating system had to be developed in a carefully coordinated way by a relatively small, tightly-knit group of people," notes Eric Raymond, an accomplished open source programmer and industry analyst [**6**]. However, Linux, even on the desktop, is still primarily used by those who are technically- inclined. Improvement to

open source programs, like Linux, comes largely from users acting virtually as co-developers [6]. Linux has proven powerful within the business and hobbyist sectors where the users are generally quite skilled and can provide feedback on the progress of a software project, something critical to the entire idea of the community development. However, the demographic differences between current Linux users and personal computer users creates a barrier when shifting Linux to the average PC user's desktop.

The key to desktop software is simplicity. Open source programmers realize this and are beginning to cater toward simplicity. However, the dynamic, mutable nature of open source often results in complexity. As many people believe flexibility of modification for personalization an important aspect of open source, simplicity might be difficult to achieve [7]. In addition, much open source software is distributed under the GNU General public License which explicitly states in its preamble that it, "is intended to guarantee your freedom to share and change free software [1]." Although the license is beneficial to technically-savvy users, it is less helpful to the majority of desktop users who spend their time developing basic computing skills, instead of programming skills. Unfortunately, not everyone has the time, or even the desire to become a master programmer. Open source development is driven by the needs of developers. Often these needs do not overlap with the needs of casual computer users. Without a financial incentive to develop for the casual user, open source programmers will rightfully devote an inadequate amount of time programming for such users.

Open source and profit are a paradoxical pair. Open source involves the free distribution of programs and information without the complications of ownership. As such, anyone is free to contribute and change the software for his or her own uses. How then can a company capitalize on open source software to make money? Ironically, VA Linux Systems, a company selling Linux based servers, had the highest IPO in Wall Street history. VA Linux Systems saw a six hundred and ninety-eight percent gain on the initial offering price of its stock on the first day [2]. While it is true that companies such as VA Linux, Redhat, and now even IBM, are making inroads into Linux profitability, most of these solutions are aimed at the corporate market. A company has yet to develop a serious strategy for making money on the development of desktop open source software. While a varying number of Linux services and products can and are currently being purchased for business use, desktop users have not yet invested in an open source application.

A current industry trend is to eliminate the computer, package it into a simple to use

device, and market it as a type of new age appliance. The goal is to get away from the complicated interfaces and configurations that are synonymous with personal computing. For years, Apple Computer's appeal was its simplicity over the competition. People want to use computers for services: e-mail, Internet, photos, etc. They do not want to be bothered with installing and updating software. Unfortunately, most open source desktop software, in its purest form does not lend itself well toward simplicity. Many of the benefits open source offers require active user participation. Ironically, open source software is doing well in the Internet appliance market where software can be controlled and distributed for a single purpose by the hardware manufacturer. However, on the desktop, where systems must be used for varying tasks, manufacturer enforced control is not possible.

To date, Linux has had limited impact on the desktop market. Some argue that critical applications are just now being developed and the desktop revolution will quickly follow. Linux is natively a command line based operating system, something standard in the business server market. Many projects have been started to supply Linux with a windowed environment. Open source projects such as Gnome and the K Desktop Environment (KDE) intend to bring the ease of use of Microsoft Windows and the MacOS to Linux and other open source software [**5**]. As these products mature, the plausibility of desktop use increases.

Often, a selling point of a commercial product is the level of support a company provides. Support is a difficult issue for many open source developers. Because open source developers generally do not have the resources to pay tech support staff, almost all support is provided by the web community surrounding the software. For businesses, this is not a problem. Many companies using open source software have an extremely knowledgeable staff that acts as an in-house tech support, many times fixing the problems themselves with a change in the software. Some even devote entire sections of staff to the development of specific open source projects that the company specifically relies on. For technically inclined users, the system of community based web support is often even superior to those found bundled with standard consumer software [**8**]. On the other hand, average consumer is not able to benefit from this system. The "1-800" style packaged support is critical for average desktop users. Unfortunately, smaller, open source software projects cannot provide this type of necessary service. Larger companies, such as Redhat, have begun offering support on a fee-for-service basis. This is vital for open source's acceptance on the desktop.

The desktop situation can hope to benefit by examining the unquestionable success that open source has seen in the business market. There is no better example than the Apache web server. Currently powering almost sixty percent of all web sites, Apache is one of the most successful open source projects to date [**3**]. Consequently, most Apache software runs in Linux, furthering the weight open source has in the business sectors. The development of Apache is driven largely by the staff of corporations that rely on it and who constantly add features and upgrades as they see necessary.

Despite the many deterrents to desktop acceptance of open source, many still preach of a revolution in the near future where Linux and other open source software will prevail over their corporate rivals [**5**]. However, open source software trends indicate otherwise. Key to desktop acceptance is corporate reliance and support of desktop applications like KDE and Gnome. Until businesses can replace their employees' desktop systems with open source alternatives, and more importantly devote sections of programmers to upkeep and update the software, the average desktop user will have no viable alternative to proprietary commercial software.

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Biography

Bryan Stroube (**stroube@acm.org**) is a senior at Central High School in Evansville, Indiana and takes several classes at the University of Southern Indiana. Bryan's computer interests include networking, web design, and studying chemical reaction mechanisms through molecular modeling programs. Since February 2001 he has been involved in a computational chemistry research project also at the University of Southern Indiana. During the summer of 2001 he attended classes at Carnegie Mellon University in Pittsburgh. Bryan plans to major in Computer Engineering when he starts to attend college fulltime in 2002. In his leisure time Bryan enjoys tennis, basketball, and spending time at his grandfather's farm.