

The Trademark History of Linux, the Operating System
by Tonya Gisselberg
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I. Introduction

Despite its name, this article is about more than the trademark history of Linux. It begins at the prehistory of Linux and incorporates other areas of intellectual property on the theory that looking at the subject from its all-inclusive intellectual property context adds depth and understanding to the trademark discussion. A good portion of this article is devoted to telling the Linux story - a fascinating and inspirational story. Telling the Linux story is also a necessary component of describing the history of Linux trademarks.

A trademark is used by the trademark owner “to identify and distinguish his or her goods, including a unique product, from those manufactured or sold by others and to indicate the source of the goods, even if that source is unknown.”¹ A trademark can identify a particular technology, such as Dolby® Surround technology.² Under the statutory definition, a trademark cannot have an existence independent from a good or service. “There is no such thing as property in a trademark except as a right appurtenant to an established business or trade in connection with which the mark is employed.”³ If there is no identifiable good or protectable technology, but instead, a public domain good or technology that anyone can freely copy and use, then there is nothing to trademark. This is particularly true when the product is something as functional and commoditized as software. Ubuntu⁴ Linux and Red Hat⁵ Linux are valid trademarks apart from the software because the companies that own those trademarks also sell services. Linux by itself

¹ 15 U.S.C. §1127 (2006).

² Dolby Surround Trademark Placement, http://www.dolby.com/uploadedFiles/zz-_Shared_Assets/English_PDFs/Professional/71_Trademark_Usage_Notes_Dolby_Surround.pdf (last visited May 26, 2010).

³ United Drug Co. v. Theodore Rectanus Co., 248 U.S. 90, 97 (1918).

⁴ Ubuntu, <http://www.ubuntu.com/> (last visited May 26, 2010).

⁵ Red Hat, <http://www.redhat.com/> (last visited May 26, 2010).

is simply the code and must rely on copyright law to create its protectable IP, the good to which a trademark can attach. The history of Linux trademarks cannot be discussed in a vacuum, but must be discussed in connection with the copyrights that permit their existence.

II. Before Unix

Before Unix came Multics. Multics was an operating system that was created at the Bell Labs to test

some important ideas about how the complexity of an operating system could be hidden inside it, invisible to the user, and even to most programmers. The idea was to make using Multics from the outside (and programming for it!) much simpler, so that more real work could get done.⁶

Bell Labs (AT&T) abandoned the Multics project when it looked like the project was becoming a bloated, unmanageable and useless block of code. In 1969, Ken Thompson, who had worked on Multics, explored implementing ideas from Multics, along with his own, to create the beginnings of Unix. Dennis Ritchie invented “C”, a new computer language, for use in the germinal Unix OS. “Like Unix, C was designed to be pleasant, unconstraining, and flexible.”⁷ In 1971, Thompson and Ritchie won the opportunity to use Unix to produce an office automation system for internal use at Bell Labs. By 1978, Unix was successfully ported to several different types of machines. The implications of this were colossal, as it meant that operating systems could now be written as a common software environment and that completely new software would not have to be written every time a new computer was created.⁸

Although there was no formal support for Unix within AT&T, it spread very rapidly internally, and also externally, to many university and research computing sites. Unix had its own networking environment that allowed the creation of Usenet, which grew to be larger than

⁶ Eric S. Raymond, *The Cathedral & the Bazaar* 8 (rev. ed. 2001).

⁷ *Id.*

⁸ *Id.* at 8-9.

ARPAnet, the precursor to the Internet. Unix was widely shared and the variation developed at Berkeley for use on the VAX “became the hacking system *par excellence*.”⁹ Linux would not have achieved the success that it currently enjoys were it not for this preexisting Unix hacker community and the hacker ethic of sharing.¹⁰ Another important development occurred in 1982, when Unix hackers from Stanford and Berkeley founded Sun Microsystems. Sun marketed networks of Unix workstations running on 68000-based hardware, replacing the VAXes and other time sharing systems.¹¹ Individual hackers gained access to increased computing time.

Under a 1958 antitrust settlement agreement with the U.S. government, AT&T was required to license its non-telephone related technology to anyone requesting a license.¹² Ma Bell divested in 1984 and “Unix became a supported AT&T product for the first time.”¹³ The dynamics surrounding Unix changed. It went from being an open, academic-type atmosphere to a proprietary atmosphere focused on business concerns. Through its subsidiary, Unix System Laboratories, AT&T sued Berkeley Software Design, Inc. and the University of California in 1993, alleging the misappropriation of pieces of AT&T’s Unix program and the use and distribution of those pieces without authorization, in violation of AT&T’s copyrights and trade secrets.¹⁴ The district court found that USL/AT&T’s claims were not ripe in federal court and that they must pursue their state court remedies first.¹⁵ USL/AT&T also alleged trademark violations in the nature of passing off, but the court ruled that the complained of acts occurred before Congress removed Eleventh Amendment immunity and that USL/AT&T failed to state a

⁹ *Id.* at 9 - 11.

¹⁰ Linus Torvalds & David Diamond, *Just for Fun* 57-59 (2001).

¹¹ Raymond, *supra* note 6, at 12.

¹² Minix Definition, <http://www.lininfo.org/minix.html> (last visited May 27, 2010).

¹³ Raymond, *supra* note 6, at 12.

¹⁴ *Unix System Laboratories, Inc. v. Berkeley Software Design, Inc.*, 832 F.Supp. 790, 793 (1993).

¹⁵ *Id.* at 806.

cause of action against the University.¹⁶ The University of California filed suit in state court against USL, but before the proceedings went very far, USL was purchased by Novell. Novell's CEO, Ray Noorda, pressed for a settlement. As part of the settlement, 3 files were removed from the BSD Unix implementation and USL copyrights were added to about 70 other files.¹⁷ As a consequence of the lawsuit, other Unix developers became careful to avoid using certain files claimed by USL as its proprietary code. An interesting question arising out of the development of Unix is how AT&T acquired the copyright, when it appears that Ken Thompson may have developed some portion of it on his own, outside of work. That brings up another interesting question regarding how much of the original Unix operating system was a derivative work of Multics. The answers to these questions will have to wait for other articles.

Minix is a minimal version of Unix, "**MIN**imal Un**IX**."¹⁸ It was written by Andrew Tanenbaum, a professor from Amsterdam, as an aid to teach students about operating systems.¹⁹ When AT&T released its first commercial version of Unix, it stopped making the source code available for development or study. Tanenbaum wrote Minix as a result of this change in policy.²⁰ Tanenbaum wanted to keep Minix as a teaching aid, so purposely did not improve it. A hacker in Australia, Bruce Evans, developed some patches to improve the performance of Minix on a 386. Due to licensing restrictions, Tanenbaum's version of the Minix operating system had to be installed first and the patches ordered and installed separately.²¹ Crippled though it was, Minix was the first Unix clone with all of the source code available. Minix is still

¹⁶ *Id.* at 802.

¹⁷ Marshall Kirk McKusick, Twenty Years of Berkeley Unix: From AT&T-Owned to Freely Redistributable 13 (2000) <http://www.oreillynet.com/pub/a/network/2000/03/17/bsd.html> (last visited May 25, 2010).

¹⁸ Definition of: Minix, http://www.pcmag.com/encyclopedia_term/0,2542,t=Minix&i=47071,00.asp (last visited May 25, 2010).

¹⁹ Torvalds, *supra* note 10, at 61.

²⁰ Minix Definition, <http://www.linfo.org/minix.html> (last visited May 27, 2010).

²¹ Torvalds, *supra* note 10, at 62.

used to teach operating system courses at universities.²² Minix 3 is also used to run single-chip, small-RAM, \$100, low power laptops for children in less developed countries. Minix 3 is licensed under a BSD-type license.²³

III. A Brief Profile of Linus Torvalds

Linus Torvalds grew up as part of the Swedish-speaking population in Finland. His maternal grandfather, Leo Waldemar Törnqvist, was a statistics professor at Helsinki University. When Torvalds was around 11 years old, his grandfather bought a Commodore VIC-20 computer. Torvalds' grandfather let Torvalds type his programs into the computer. Torvalds started reading the manuals and writing programs for the computer. Programming became his favorite indoor sport, getting him through the northern winter.²⁴

When he was sixteen or seventeen, Torvalds felt like he had exhausted his possibilities with the Commodore VIC-20 and bought himself a Sinclair QL, which was one of the first 32-bit machines made for home use. The operating system on the Sinclair QL was Q-DOS, a program written for that computer. It was a multi-tasking operating system, allowing multiple programs to run simultaneously. He bought the computer because he thought the technology was interesting and he loved the CPU, an 8-megahertz 68008 chip. He was always looking for a programming project to work on and wrote his own programming tools. He became interested in operating systems when he bought a floppy controller so that he would not have to use the microdrives, a loop tape, that came with the machine. The driver that came with the floppy controller was so bad that he wrote his own. When he wrote the controller, he found some bugs in the operating system. The problem was that the operating system was read-only and allowed

²² Andy Tanenbaum, Introduction to Minix 3, OS News, Sept. 25, 2006, <http://www.osnews.com/story/15960/Introduction-to-MINIX-3/>.

²³ Minix 3, <http://www.minix3.org/> (last visited May 27, 2010).

²⁴ Torvalds, *supra* note 10, at 6-8, 9, 13.

the user to insert code only in a few places. Next, he wrote his own assembler and editor. He used the Sinclair QL for 3 years and grew tired of its shortcomings, such as its lack of memory management and paging and its propensity to run out of memory and crash at any time. He was keeping track of the latest in the computer market and saw the advantages of the PC and the 386 chip: inexpensive mass market clones, standard hardware, easy to obtain upgrades and add-ons. He decided to leave the 68008 architecture and get a PC, a major decision for a 68008 purist.²⁵ The significance of the 386 is that “[f]or the first time, individual hackers could afford to have home machines comparable in power and storage capacity to the minicomputers of ten years earlier - Unix engines capable of supporting a full development environment and talking to the Internet.”²⁶

Torvalds started studying Unix and C programming even before he got his 386 PC. He spent a whole summer studying *Operating Systems: Design and Implementation*, by Andrew S. Tanenbaum. Tanenbaum discussed Minix in that book. Torvalds knew even before he got his 386 computer that he wanted to run Unix on it. He states, “[a]s I read and started to understand Unix, I got a big enthusiastic jolt. Frankly, it’s never subsided. (I hope you can say the same about something.)” He started out with Minix, as that was the only Unix version he could find that would meet his needs.²⁷

As a high school student, Torvalds created an environment for himself in which he could work on the computer without any cognizance of the time of day, the time of year or the weather

²⁵ Id. at 39, 41, 43-45, 48, 51.

²⁶ Raymond, *supra* note 6, at 13.

²⁷ Torvalds, *supra* note 10, at 51-52.

outside. He “hung thick black drapes on the windows so no sunlight would seep in.”²⁸ This enabled him to hang out in his bathrobe and program virtually nonstop for months at a time.²⁹

IV. The Creation of Linux

Torvalds acquired his 386 computer on January 5, 1991. He ordered the Minix operating system and when it arrived a month later, installed it immediately. He spent the next month downloading programs that he was familiar with from the university computer and making the system his own. Torvalds was disappointed in a number of things about Minix. His greatest disappointment was the terminal emulation, the program he used to connect to the computer at the University of Helsinki, where he was a student. He decided to write his own terminal emulation program, but did not want to do it in Minix. He wanted to write it at the bare hardware level. He thought that the most important thing was for him to figure out what the computer could do and to have fun with it. It took him another month to determine how to write a task-switching program from BIOS, the basic input output system that a PC boots to. He had his terminal emulation program when he was able to create one thread that read from the modem and wrote to the screen and one thread that read from the keyboard and wrote to the modem. It was March or April 1991 when he completed his terminal emulator.³⁰

Once he wrote his terminal emulator, Torvalds discovered that he also wanted to download and upload things. To do that, he had to be able to save to a disk and the terminal emulator had to have a disk driver and a file system driver. He almost did not do it, but decided he had nothing else to do, so did it. He made his file system compatible with Minix, as that was the operating system that was on his computer. When he finished these tasks, it was clear to him that his program was on its way to becoming an operating system. He posted a request on the

²⁸ *Id.* at 19.

²⁹ *Id.* at 64.

³⁰ *Id.* at 53, 61-64.

Minix newsgroup for someone to direct him to where he could get the latest POSIX standards.³¹ “The POSIX standards are the lengthy rules for each of the hundreds of system calls in Unix - what you need in order to get the computer to perform its operations, starting with Read, Write, Open, Close.”³² Since no one responded to his request for POSIX, he relied on the Sun Microsystem manuals that were available at the university. The manuals contained enough of the systems calls to help him get by. Ari Lemke, a teaching assistant at Helsinki University of Technology, recognized that Torvalds was working on an operating system and offered to post the operating system on the university’s FTP site for download by others when Torvalds was ready.³³

After he discovered he was creating an operating system, Torvalds’ original goal was to create a replacement for Minix. It did not have to do much more than Minix, but it did have to do some things that Minix could not do and that Torvalds and others cared about. Torvalds added some things to his operating system that were in the public domain. For example, he added the Bourne Shell, one of the original Unix shells. The shell enables a user to log on and other binaries to start up.³⁴ He also used the GCC compiler.³⁵ A compiler is “[s]oftware that translates a program written in a high-level programming language (C/C++, COBOL, etc.) into machine language.”³⁶ In late August or early September 1991, Torvalds got the shell working. Torvalds posted his operating system on the FTP site on September 17, 1991. He lived in his bathrobe, doing nothing but programming, from April through August.³⁷

³¹ *Id.* at 77-79.

³² *Id.* at 79.

³³ *Id.* at 80.

³⁴ *Id.* at 81-82.

³⁵ *Id.* at 87.

³⁶ Definition of: compiler, http://www.pcmag.com/encyclopedia_term/0,2542,t=compiler&i=40105,00.asp (last visited May 29, 2010).

³⁷ Torvalds, *supra* note 10, at 83-84, 87.

Torvalds privately called his operating system “Linux,” but named it “Freax,” as he thought “Linux” was too egotistical. Ari Lemke hated the name “Freax” and named the posting “pub/OS/Linux.” Torvalds did not fight the use of the name “Linux,” but enjoys an opportunity to point out that someone else named the operating system.³⁸

Following the release of Linux versions 0.01 through 0.03, Torvalds felt that the debugging was not very engaging and probably would have stopped by the end of 1991. Two things happened to change his mind: 1. he mistakenly destroyed his Minix partition and 2. people kept sending him feedback. Destroying his Minix partition forced him to make the decision that Linux was good enough without Minix. At the request of someone in Germany, Torvalds added a smaller compiler, called page-to-disk. The significance was that it allowed the user to run bigger programs than she had memory for and it was something that Minix could not do. In the spring of 1992, Linux started supporting X windowing, which originated at MIT. X windowing allows the user to work in multiple windows simultaneously and supports a graphical user interface. Torvalds decided to use the sockets from X windowing to create external networking, which would allow Linux users to connect to other computers without using a modem. Torvalds realized that once the external networking was in place, Linux would be a full-fledged, reliable operating system. It took 2 years to get the networking done. Linux Version 1.0 was released in March 1994, with a big celebration announcement made from the University of Helsinki Computer Sciences Department Auditorium.³⁹

³⁸ *Id.* at 84, 88.

³⁹ *Id.* at 90-92, 115-117.

Torvalds has continued to guide the direction of Linux since it was first made available to the public. “Torvalds remains the ultimate authority on what new code is incorporated into the standard Linux kernel.”⁴⁰

Torvalds met his wife, Tove, in 1993, when she was a student in one of his computer science classes at the University of Helsinki. They had the first of their three daughters in 1996. Torvalds accepted a position at Transmeta, in Silicon Valley, and the Torvalds family moved to the United States in February 1997.⁴¹ Torvalds left Transmeta and joined the Open Source Development Lab as its first OSDL Fellow in June 2003.⁴² The OSDL and The Free Standards Group merged in January 2007 to form The Linux Foundation.⁴³ Torvalds is currently a Fellow at The Linux Foundation.⁴⁴ The Torvalds family lives in Portland, Oregon.⁴⁵

V. Linux Copyrights

Torvalds did not want to sell Linux and he did not want to lose control by letting other people sell it, either. He therefore included a copyright policy in the copying file of the first version he uploaded on September 17, 1991. Torvalds states:

Thanks to the Berne Convention in Europe in the 1800s, you own the copyright to anything you create, unless you sell the copyright. As the copyright owner, I got to make up the rules: You can use the operating system for free, as long as you don't sell it, and if you make any changes or improvements you must make them available to everybody in source code (as opposed to binaries, which are inaccessible). If you didn't agree with these rules, you didn't have the right to copy the code or do anything with it.⁴⁶

⁴⁰ The Linux Foundation, Staff, <http://www.linuxfoundation.org/about/staff> (last visited May 30, 2010).

⁴¹ Torvalds, *supra* note 10, at 122, 141, 143-144.

⁴² *Torvalds Joins OSDL to Give Linus His Full Attention*, The Free Library by Farlex, June 25, 2003, [http://www.thefreelibrary.com/Torvalds+joins+OSDL+to+give+Linux+his+full+attention.+\(Infrastructure...-a0105204899](http://www.thefreelibrary.com/Torvalds+joins+OSDL+to+give+Linux+his+full+attention.+(Infrastructure...-a0105204899).

⁴³ Linux Online, Linus Torvalds Bio, <http://www.linux.org/info/linus.html>, (last visited May 24, 2010).

⁴⁴ The Linux Foundation, Staff, <http://www.linuxfoundation.org/about/staff> (last visited May 30, 2010).

⁴⁵ Ars Technica, Why Portland Should Get Google Fiber (Hint: Linus Torvalds), <http://arstechnica.com/tech-policy/news/2010/03/portland-goes-after-google-1gps-fiber.ars> (last visited May 30, 2010).

⁴⁶ Torvalds, *supra* note 10, at 94.

The Berne Convention entered into force in Finland on April 1, 1928.⁴⁷ It entered into force in the United States on March 1, 1989.⁴⁸ A significant effect of the Berne Convention in the U.S. is that it removed the copyright notice requirement.⁴⁹ It is not clear from its face that the Berne Convention applies to software, as it does not contain either the word “software” or the word “computer.” It is clear from the face of the U.S. Copyright Act that copyright protection applies to software. Congress specifically extended copyright protection to software in 1980.⁵⁰ The Berne Convention is not necessarily self-executing. It is not self-executing under the U.S. Copyright Act.⁵¹ It seems unlikely that anyone would dispute that Torvalds has valid copyrights in Linux, but it is unclear that the Berne Convention is the initial authority for those copyrights. Determining the precise authority for the copyrights is beyond the scope of this article. Regardless of the legal source underlying the copyright protection, Torvalds included a copyright notice with his first release and people have respected that notice.

By February 1992, people were asking Torvalds whether they could pass out floppy disks of Linux and charge for the cost of the disks and their time. Torvalds’ biggest fear was that someone would brazenly steal his operating system from the FTP postings. Linux caused so much online discussion that that fear subsided. Because he felt that people around the world were contributing towards creating the best operating system anywhere, and because Linux became so recognizable, he felt that he could allow people to sell it. He decided to adopt the General Public License (GPL) and included it with version 0.12.⁵² He was openly critical of

⁴⁷ WIPO, http://www.wipo.int/treaties/en/Remarks.jsp?cnty_id=951C (last visited May 30, 2010).

⁴⁸ WIPO, http://www.wipo.int/treaties/en/Remarks.jsp?cnty_id=1045C (last visited May 30, 2010).

⁴⁹ David Lange, et al., *Intellectual Property Cases and Materials* 891 (3rd. ed. 2007).

⁵⁰ Act of December 12, 1980, Pub.L. No. 96-517, 94 Stat. 3015, 3028.

⁵¹ 17 U.S.C. §104(c) (2006).

⁵² Torvalds, *supra* note 10, at 95-96.

GPL v3 when it was being drafted and prefers GPL v2.⁵³ Here is some of what Torvalds says about the GPL:

The GPL is wonderful in its gift of letting anyone play. Just think about what a major advance for humanity that is! But does that mean that every innovation should be GPL'd?

No way! This is the abortion issue of technology. It should be up to the individual innovator to decide for herself or himself whether to GPL the project or to use a more conventional approach to copyright.⁵⁴

Torvalds has not registered any copyrights with the United States Copyright Office.⁵⁵

Neither has The Linux Foundation.⁵⁶ The same is true of the Open Source Development Lab.⁵⁷

Given the open source model of continual and incremental code changes, it does not make sense.

VI. The LINUX Trademark

On August 15, 1994, William R. Della Croce, Jr. filed for the LINUX word mark, claiming a first use and a first use in commerce of August 2, 1994. The goods and services description was for “computer operating system software to facilitate computer use and operation.” The registration was issued to Della Croce on September 5, 1995.⁵⁸ As was indicated above, Linux Version 1.0 was released in March 1994. Della Croce filed within 5 months of the Version 1.0 release.

⁵³ The Linux Foundation, eWeek: Torvalds Still Will Not License Linux Under GPL v3, Jan. 8, 2008, <http://linux-foundation.org/weblogs/news/2008/01/08/eweek-torvalds-still-will-not-license-linux-under-gpl-v3/>.

⁵⁴ *Id.* at 195.

⁵⁵ Copyright: Public Catalog, http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=Torvalds&Search_Code=TALL&PID=ikbl78obkiSrYFBPIFvObjVvWHua&SEQ=20100530174345&CNT=25&HIST=1, (last visited May 30, 2010).

⁵⁶ Copyright: Public Catalog, http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=Linux+Foundation&Search_Code=TALL&PID=vYycz7wEtwQ_qXblYotNj6K4pf0&SEQ=20100530192722&CNT=25&HIST=1, (last visited May 30, 2010).

⁵⁷ Copyright: Public Catalog, http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=Open+Source+Development+Lab&Search_Code=TALL&PID=700LkONbjNd2fEOx7jwVzgsXH&SEQ=20100530193037&CNT=25&HIST=1, (last visited May 30, 2010).

⁵⁸ Trademark Electronic Search System, <http://tess2.uspto.gov/bin/showfield?f=doc&state=4002:vg5ith.3.217> (last visited May 2, 2010).

Around this time, Red Hat was winning awards, SuSE was flourishing in Europe, Slackware was the first plug and play Linux and Yggdrasil Linux was the first Linux to come out on CDROM. Linux users first found out about Della Croce in March 1995, when Yggdrasil Computing filed for a trademark on The Linux Bible.⁵⁹ The Linux Bible “was probably the worlds’ first comprehensive, commercially available Linux book.”⁶⁰ Yggdrasil’s trademark registration was rejected on the grounds that William R. Della Croce was the owner of the Linux trademark.⁶¹

During the following year, Yggdrasil, Linux Journal and others received demands from Della Croce for payment of 25 per cent of royalties on products that used the name, Linux, informing them that:

LINUX ® is proprietary. Information about obtaining approval for use and/or making payment for past use may be obtained by writing to the following address...

Della Croce had no known history with Linux, and Yggdrasil was able to show not only that Linux was in common use long before 1994 when Della Croce made his first application for the trademark, but that Yggdrasil Computing had been shipping Linux CDs since December 1992. The legal dispute, led by Linux International under the auspices of Jon 'maddog' Hall, with the assistance of a friendly lawyer, Gerry Davis, and financial help from Red Hat, DEC and others, was finally resolved in August 1997. The Linux trademark was assigned to Linus Torvalds as part of the settlement.⁶²

The above language quoted from Tux Deluxe is probably as succinct and objective a description of the Linux trademark dispute as is publicly available. Many of the articles regarding this trademark issue are emotionally charged. There does not appear to be any account of the story from Della Croce’s perspective. He seems to be universally tagged a bad actor.

⁵⁹ Tux Deluxe, Asterix, the Gall - The Strange History of Linux and Trademarks, Mar. 27, 2007, <http://tuxdeluxe.org/node/107>.

⁶⁰ DistroWatch.com, Featured Distribution of the Week: Yggdrasil Linux, Nov. 15, 2004, <http://distrowatch.com/weekly.php?issue=20041115>.

⁶¹ Tux Deluxe, Asterix, the Gall - The Strange History of Linux and Trademarks, Mar. 27, 2007, <http://tuxdeluxe.org/node/107>.

⁶² *Id.*

There is no reported decision from the Trademark Trial and Appeal Board (TTAB) and the case occurred before LEXIS started making TTAB pleadings available on its website.⁶³

Apparently, this type of takeover attempt is an ongoing problem for the Linux trademark.

According to maddog Hall,

all around the world people were getting the same strange idea. Free software advocates and developers can't afford to go to the 200 countries around the world and buy trademarks, and maintain them, so we have to fight them on a case by case basis.⁶⁴

The Linux leaders have taken steps to ensure that these attempts to misuse the Linux trademark decrease over time, rather than increase. For example, the Linux word mark has been registered in the European Union as a Community Mark.⁶⁵ A Community Trade Mark is valid in all 27 EU Member States.⁶⁶ The Linux trademark has also been registered under the Madrid System.⁶⁷ The Madrid System includes both the Madrid Agreement and the Madrid Protocol.⁶⁸ The Madrid Agreement provides protection in 55 signatory countries and the Madrid Protocol provides protection in 78 signatory countries.⁶⁹ Additionally, the trademark can be protected by methods other than registration, such as by contract. The Linux trademark is currently managed by The Linux Foundation,⁷⁰ which “sponsors the work of Linux creator Linus Torvalds and is supported by leading Linux and open source companies and developers from around the

⁶³ After I wrote this article, I found a copy of the Petition to Cancel Registration using the Internet Archive Wayback Machine at <http://waybackmachine.org/>. I entered www.iplawyers.com and chose the December 28, 1996, snapshot. That takes you to a former web page of Davis & Schroeder, a law firm. I then clicked on “Read the Petition to Cancel Registration of the “LINUX” trademark” and accessed a copy of the petition.

⁶⁴ Tux Deluxe, Asterix, the Gall - The Strange History of Linux and Trademarks, Mar. 27, 2007, <http://tuxdeluxe.org/node/107>.

⁶⁵ The Trade Marks and Designs Registration Office of the European Union, CTM-Online, Detailed results of “Linux” search, http://oami.europa.eu/CTMOnline/RequestManager/en_Result_NoReg (last visited November 22, 2010).

⁶⁶ The Trade Marks and Designs Registration Office of the European Union, Trade Marks, <http://oami.europa.eu/ows/rw/pages/CTM/index.en.do> (last visited June 1, 2010).

⁶⁷ <http://www.wipo.int/romarin/detail.do?ID=2> (last visited November 22, 2010).

⁶⁸ Madrid System for the International Registration of Marks, <http://www.wipo.int/madrid/en/>, (last visited November 22, 2010).

⁶⁹ Intellectus, International Trademark, <http://www.intellektus.com/trademarks-countries-world-intellectual-property-organization.html> (last visited June 1, 2010).

⁷⁰ The Linux Foundation, Linux Trademark Institute, <http://www.linuxfoundation.org/programs/legal/trademark> (last visited June 1, 2010).

world.”⁷¹ Sublicensees of the trademark “must agree not to challenge Linus Torvalds’ ownership of the Linux mark in any jurisdiction, and to provide proper attribution of ownership on their goods, services and elsewhere,”⁷² in exchange for a free, perpetual, world-wide sublicense. The Linux Foundation uses contract terms to enhance the protectability of the Linux trademark.

Torvalds lived in Finland when the Linux trademark registration dispute began in 1995. According to Torvalds, everyone in the Linux community knew they would contest the trademark registration, but were not sure how that was going to get done. It was decided that Linux International would lead the fight.⁷³ Linux International is not a vendor organization, but is “a world-wide non-profit association of end users who are dedicated to furthering the acceptance and use of Free and Open Source Software (FOSS).”⁷⁴ Torvalds wanted the trademark to go into the public domain, but the lawyers involved convinced him that that would not achieve their goals, as “Linux” is not generic and someone else would register it if the trademark was cancelled without being assigned to someone truly connected with Linux. Torvalds next wanted the trademark assigned to Linux International, but others were concerned that Linux International was not well enough established as an organization. The consensus was that the trademark should be assigned to Torvalds.⁷⁵

Linus Torvalds, Yggdrasil Computing, Specialized Systems Consultants, Inc. (*Linux Journal*) of Seattle, Linux International and Work Group Solutions filed a cancellation proceeding against Della Croce’s registration in November 1996. Red Hat Software, Inc., Metro Link Inc. and Digital Equipment Corporation supported the litigation and contributed toward its

⁷¹ The Linux Foundation, About Us, <http://www.linuxfoundation.org/about> (last visited June 2, 2010).

⁷² The Linux Foundation, Linux Trademark Institute, <http://www.linuxfoundation.org/programs/legal/trademark> (last visited June 1, 2010).

⁷³ Torvalds, *supra* note 10, at 134.

⁷⁴ Linux International, <http://www.li.org/> (last visited June 2, 2010).

⁷⁵ Torvalds, *supra* note 10, at 134-135.

cost.⁷⁶ It appears from the above description of the case from Tux Deluxe that the petitioners relied on the commercial uses of companies such as Yggdrasil, rather than Torvalds' use, in establishing the prior use of the mark. Torvalds states in his account of the dispute that "[t]he lawyer suggested that the legal arguments would be easier if the Linux trademark were to be transferred to me because I was the original user of the word."⁷⁷ This article discusses both the prior commercial use of the trademark by companies such as Yggdrasil and Torvalds' prior use.

A trademark registrant may file an application for either actual use of the trademark in commerce or a bona fide intent to use the trademark.⁷⁸ Applicants applying under the actual use in commerce subsection must verify that

to the best of the verifier's knowledge and belief, no other person has the right to use such mark in commerce either in the identical form thereof or in such near resemblance thereto as to be likely, when used on or in connection with the goods of such other person, to cause confusion, or to cause mistake, or to deceive.⁷⁹

Della Croce filed an application for actual use, claiming first use and first use in commerce beginning August 2, 1994.⁸⁰ Use based applicants must also file a specimen.⁸¹ Della Croce apparently filed "a disk on which he claimed to have a program called Linux."⁸² Della Croce did not register a copyright for the Linux program on the disk.⁸³

Under §1064, a petition to cancel a registration of a mark may be filed by any person who believes she is or will be damaged by the registration of the mark on the principal register.

Section 1064 distinguishes between cancellation petitions filed within five years of the date of

⁷⁶ Marjorie Richardson, Ownership of Linux Trademark Resolved, *Linux Journal*, Nov. 1, 1997, <http://www.linuxjournal.com/article/2559>.

⁷⁷ Torvalds, *supra* note 10, at 135.

⁷⁸ 15 U.S.C. §1051 (2006).

⁷⁹ §1051(a)(3)(D).

⁸⁰ Trademark Electronic Search System, <http://tess2.uspto.gov/bin/showfield?f=doc&state=4002:vg5ith.3.217> (last visited May 2, 2010).

⁸¹ §1051(a)(1).

⁸² Torvalds, *supra* note 10, at 134.

⁸³ Copyright: Public Catalog, http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=Della+Croce+William&Search_Code=NALL&PID=Uo4iegbLsHMTKWLEQthf2Zb8PBG1&SEQ=20100603152545&CNT=25&HIST=1 (last visited June 3, 2010).

registration of the mark and those filed more than five years after the mark is registered. During the first five years after registration,

cancellation may be brought on all the grounds available in an opposition proceeding. These grounds include: likelihood of confusion with petitioner's previously used or registered mark; descriptiveness and genericness; misdescriptiveness and deceptiveness; fraud; and abandonment.⁸⁴

Under § 1064, the cancellation petitioner must establish standing by meeting the "damage" requirement. The standing requirement in a cancellation petition is similar to the standing requirement in an opposition.⁸⁵

The "standing" requirement is liberally interpreted. Standing exists where the opposer has a personal interest in the outcome beyond that of the general public. For example, in order to challenge a mark as generic or merely descriptive, opposer should have an interest in using the mark generically or descriptively. In other words, opposer must be commercially involved with goods that could be described by the alleged mark.⁸⁶

"Allegations sufficient to support standing include likelihood of confusion and rejection of petitioner's application on the basis of the challenged registration."⁸⁷ Yggdrasil's trademark registration application was rejected on the basis of Della Croce's registration. Torvalds also had a personal interest in controlling the name that was attached to his operating system, even though he did not sell anything. All of the Linux cancellation petitioners could easily meet the standing requirement. The commercial interest analysis undertaken for the purposes of the standing requirement in §1064 is not the protracted "use in commerce" analysis that occurs in infringement actions brought under §§1114 and 1125(a).⁸⁸

In the Linux trademark case, the possible grounds for cancellation are likelihood of confusion with petitioner's previously used or registered mark, and fraud. Fraud charges

⁸⁴ Siegrun D. Kane, Kane on Trademark Law §19:4.5 (5th ed. 2008).

⁸⁵ *Id.* at §19:4.4.

⁸⁶ *Id.* at §19:2.2[A] (citations omitted).

⁸⁷ *Id.* at §19:4.4 (citations omitted).

⁸⁸ *Rescuecom Corp. v. Google Inc.*, 562 F.3d 123 (2nd Cir. 2009).

typically arise in cases in which the registrant has sworn that no other person has the right to use the trademark in commerce,⁸⁹ as happened in the Linux case. Rule 9(b)⁹⁰ applies to cancellation proceedings and fraud must be stated with particularity. The cancellation petition must “recite detailed facts tending to show willful or knowingly-made false representations by the registrant during ex parte prosecution of the application.”⁹¹ Fraud involves “a willful withholding from the Office by an applicant or registrant of material information or facts which, if transmitted and disclosed to the Examiner, would have resulted in the disallowance of the registration sought.”⁹² Fraud involves an intent to deceive the examiner.⁹³ Della Croce’s registration of the Linux trademark certainly seems like an intent to deceive the examiner, but it is difficult to make an unqualified statement about Della Croce’s willful withholding and intent when the only facts available are from the perspective of Linux supporters.

Likelihood of confusion in the cancellation context is similar to the likelihood of confusion in the infringement context, in that it is a multifactor test. Nevertheless, there are important differences.

In a proceeding seeking the cancellation of a trade-mark or opposing an application for registration, likelihood of confusion is determined only as to the registrability of the applicant's mark exactly as shown in the application and only as to the goods listed, regardless of actual usage. Similarly, if [the party contesting the registration] relies on its own federal registration, its rights are determined as of the format and goods in that registration, regardless of the reality of actual usage.... Thus, an inter partes decision of the Trademark Board, whether reviewed by the CAFC or not, must be carefully examined to determine exactly what was decided and on what evidentiary basis. Many such oppositions and cancellations are decided only upon a limited comparison of the registered or applied-for format and goods without regard for their marketplace manner of use.⁹⁴

⁸⁹ Kane, *supra* note 80, at 19:2.2[B]4.

⁹⁰ Fed.R.Civ.P. 9(b).

⁹¹ Liberty Trouser Co., Inc. v. Liberty & Co., Ltd., 222 U.S.P.Q. 357, 358 (T.T.A.B. 1983).

⁹² Abc Moving Company, Inc. v. Brown, 218 U.S.P.Q. 336, 339 (T.T.A.B. 1983).

⁹³ *Id.*

⁹⁴ Jim Beam Brands Co. v. Beamish & Crawford, Ltd., 19 U.S.P.Q. 1352, 1356 (2nd Cir. 1991).

In a cancellation proceeding, the inquiry is limited to an evaluation of similarity of the registered trademark to the mark of the opposer, without regard to actual use in the market. In the Linux trademark case, the trademark registered by Della Croce and the uses listed were exactly the same as those of the cancellation petitioners.

The multifactor test used in cancellation proceedings is from *In re E.I. DuPont de Nemours & Co.*⁹⁵ There are thirteen factors: similarity/dissimilarity of the marks in their entireties; similarity/dissimilarity of the goods/services; similarity/dissimilarity of established trade channels; conditions under which purchasing decisions are made; fame of the prior mark; number of similar marks used on similar goods; actual confusion; concurrent use without actual confusion; variety of goods on which a mark is not used; market interface between applicant and owner of the prior mark; extent to which applicant has a right to exclude others from use; extent of potential confusion; and any other probative facts.⁹⁶ In spite of the language cited from *Jim Beam* on the preceding page, it would be difficult to evaluate the *DuPont* factors without regard to the marks' marketplace manner of use.

Applying a few of the above *DuPont* factors to the Linux trademark case, the marks are the same marks for the same services. There were no established trade channels for Della Croce's use, whereas there were established trade channels for a number of commercial Linux users. "Linux" as a name for Torvalds' operating system was on its way it becoming famous at the time of Della Croce's registration, whereas Della Croce had no known previous use. There was actual confusion, and as of 2004, there was still confusion among Linux users as to the ownership of the mark.⁹⁷ The market interface between the applicant and the owner of the prior

⁹⁵ *Id.* at 1356.

⁹⁶ *In re E.I. DuPont de Nemours & Co.*, 476 F.2d 1357, 1361 (C.C.P.A. 1973).

⁹⁷ Legal Forums, Linus Has Trademark Rights on "Linux"?, <http://www.slashlegal.com/showthread.php?t=5170> (last visited June 3, 2010).

mark is that Della Croce sent Torvalds an email about a year and a half before the registration and told Torvalds that he had a tremendous business opportunity for Torvalds. Torvalds did not respond, but did keep the email.⁹⁸ Regarding the right to exclude, Torvalds has a copyright and did have the right to exclude others from exercising his exclusive rights. Distribution is a right that Della Croce interfered with by trying to extract royalties from Linux distributors.⁹⁹ It is doubtful that a trier of fact would have found a single *DuPont* factor in Della Croce's favor.

Prior use is part of the likelihood of confusion analysis, as it is the "likelihood of confusion with petitioner's *previously used or registered mark*."¹⁰⁰ (Emphasis added.) Again, this analysis is the same as the analysis for an opposition.¹⁰¹

Prior use may be based on public use as a trademark or trade name, or in advertising. It is not necessary that the prior use qualify as "technical" trademark use, that is, use in connection with goods transported in commerce. However, an opposition based on use "analogous" to trademark use can succeed only if the use is of such a nature and extent as to create public identification of the term with opposer's products or services.¹⁰²

Torvalds' use was not a "technical" trademark use, in that he did not sell Linux and did not make money off of Linux, aside from speaking engagements, until the Red Hat IPO.¹⁰³ Torvalds' use of the word "Linux" did create public identification of the term in connection with his operating system. Nobody used a different term to identify it and there was only one known Linux operating system. Users such as Red Hat and Yggdrasil were using "Linux" in commerce in a trademark sense; they sold goods and/or services on which they used the mark. The Linux cancellation petitioners would have been able to establish a prior use across the board, in commercial and noncommercial applications of the mark.

⁹⁸ Torvalds, *supra* note 10, at 133.

⁹⁹ 17 U.S.C. §106(3) (2006).

¹⁰⁰ Kane, *supra* note 80, at 19:4.5[A].

¹⁰¹ *Id.*

¹⁰² *Id.* at 19:2.2[B]1 (citations omitted).

¹⁰³ Torvalds, *supra* note 10, at 172-175.

A trademark cannot be registered on the principle register if it is descriptive.¹⁰⁴

Descriptive marks must acquire secondary meaning before they can be registered on the principle register.¹⁰⁵ From the least protection to the most protection, the classes of trademarks are (1) generic, (2) descriptive, (3) suggestive, and (4) arbitrary or fanciful. A generic term can never be a trademark. At the other end of the spectrum, fanciful trademarks are words created solely for use as a trademark. Arbitrary trademarks are ordinary words used in an unfamiliar way. In the middle are descriptive trademarks and suggestive trademarks.¹⁰⁶

A term is suggestive if it requires imagination, thought and perception to reach a conclusion as to the nature of goods. A term is descriptive if it forthwith conveys an immediate idea of the ingredients, qualities or characteristics of the goods.¹⁰⁷

Where does “Linux” fall on the scale of descriptiveness? “Linux” is a word that was made up solely to name Torvalds’ operating system. In that regard, it is fanciful. It could also be suggestive, in that it is “Unix” with an “L” in front and the “U” and “i” transposed. Both Torvalds and Ari Lemke easily thought of the name, so from that view, it is more suggestive than fanciful. It is not a descriptive trademark, as the word does not immediately convey an idea of the goods. There is no dictionary definition for the word “Linux.”¹⁰⁸ The word has no meaning outside of its use as the name of an operating system. It makes little difference whether the mark is arbitrary or suggestive, as both types of marks are entitled to registration without proof of secondary meaning.¹⁰⁹ The significance of the level of distinctiveness is that the Linux word mark was obviously entitled to registration without acquiring secondary meaning. It meant that the Linux cancellation petitioners would not have to worry about the evidentiary difficulties in

¹⁰⁴ §1052(e).

¹⁰⁵ §1052(f).

¹⁰⁶ *Abercrombie & Fitch Co. v. Hunting World, Inc.*, 537 F.2d 4, 9, 11 (2nd Cir. 1976).

¹⁰⁷ *Id.* at 11.

¹⁰⁸ Merriam-Webster’s Online Dictionary, <http://www.merriam-webster.com/dictionary/linux> (last visited June 3, 2010).

¹⁰⁹ *Id.*

establishing secondary meaning for a descriptive word mark. The uniqueness of the Linux mark strengthened the case against Della Croce, as it would have made it very difficult for him to argue that he thought up the word without any knowledge that it already existed and happened to put it on a computer program.¹¹⁰

The Linux cancellation petitioners reached an out of court settlement with Della Croce and the trademark was assigned to Torvalds.¹¹¹ Although getting a trademark cancelled is no small feat, the facts and legal arguments weighed heavily in the favor of the cancellation petitioners, probably so much so that even Della Croce must have recognized that it was highly unlikely he would be allowed to retain the mark. The equities also weighed strongly in favor of the cancellation petitioners. It is acutely unfair that the Linux cancellation petitioners used “Linux” as a common law trademark for years, then Della Croce tried to claim the word as his own and unjustly profit from the efforts of others. Torvalds does not know the details of the settlement, stating that he was “happily uninterested in it all.”¹¹²

VII. Why chose a penguin as a symbol?

There is a dispute within the Torvalds household about whose idea it was to choose the penguin as the Linux symbol. The Linux companies had symbols and people were asking whether there should be a symbol for Linux itself. Torvalds’ wife, Tove, claims the penguin was her idea. A fairy penguin bit Torvalds at a zoo in Australia when he put his hand into its cage and wiggled his fingers, pretending they were fish. Tove says that Torvalds liked getting bit by the penguin and that after that, he wanted to see penguins whenever possible. Torvalds started

¹¹⁰ In the Petition to Cancel Registration referred to in note 63, the Linux attorneys argued that “Linux” is a generic term of art for that type of operating system and that it did not function to identify or distinguish Della Croce’s goods. The petition argued that the registration should be cancelled, not that the mark should be assigned to Torvalds.

¹¹¹ Torvalds, *supra* note 10, at 135.

¹¹² *Id.*

looking for a Linux symbol and Tove said, “Why don’t you have a penguin because you fell in love with those penguins.” Torvalds replied, “Okay, I’ll think about it.”¹¹³

Torvalds’ version of how a penguin was chosen as a symbol is that he was talking to maddog and Henry Hall and that is how the idea came up. Henry Hall said he knew of an artist who could draw a penguin. Instead of following up on that lead, Torvalds “asked on the Internet if there were people who wanted to send in pictures of penguins. He chose a version by Larry Ewing, a graphic artist who works at the Institute for Scientific Computing at Texas A&M University.”¹¹⁴

Torvalds wanted a penguin that looked happy, “as if it had just polished off a pitcher of beer and then had the best sex of its life.” He also wanted a penguin that was distinct. “Hence, while all other penguins have black beaks and feet, those features are orange on the Linux mascot, making it look almost like a penguin whose father was a duck. As if Daffy Duck got a little kwazy on a cruise to Antarctica and had a wild one-night-stand with some native fowl.”¹¹⁵

“Tux” is the name of the Linux penguin. The name was suggested by James Hughes in response to a Torvalds email entitled “Let’s name the penguin!” “(T)orvalds (U)ni(X) = TUX!”¹¹⁶ The Linux Foundation indicates on its website that Tux can be licensed through its creator, Larry Ewing.¹¹⁷ Ewing has not registered Tux as either a copyright or a trademark.^{118 119}

¹¹³ *Id.* at 138-139.

¹¹⁴ *Id.* at 139.

¹¹⁵ *Id.* at 139-140.

¹¹⁶ Let’s Name the Penguin!, <http://lkml.indiana.edu/hypermail/linux/kernel/9606.1/0175.html> (last visited June 3, 2010).

¹¹⁷ The Linux Foundation, Linux Trademark Institute, <http://www.linuxfoundation.org/programs/legal/trademark> (last visited June 3, 2010).

¹¹⁸ Copyright: Public Catalog, http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=Ewing+Larry&Search_Code=TALL&PID=oyYpV77RsBEOoUi4pUHrR2ZHDvGJ&SEQ=20100603175212&CNT=25&HIST=1 (last visited June 3, 2010).

¹¹⁹ Trademark Electronic Search System, http://tess2.uspto.gov/bin/showfield?f=toc&state=4008%3Ac7ei3u.1.1&p_search=searchss&p_L=50&BackReference=&p_plural=yes&p_s_PARA1=&p_tagrepl%7E%3A=PARA1%24LD&expr=PARA1+AND+PARA2&p_s_PAR

Ewing was contacted by email, inquiring on the licensing terms for the purpose of writing this article, but did not respond.

Tux the penguin is owned by Ewing, not Torvalds or The Linux Foundation. Tux is more a symbol or mascot than a trademark. Tux is not shown on The Linux Foundation website with a TM designation.¹²⁰ I could not find any image of Tux with either a TM or a © designation. The licensing terms between Torvalds and Ewing, if any, are unknown. At a minimum, Torvalds probably has an implied license to use Tux as a common law trademark. It is not uncommon for companies to license cartoon characters for use in advertising, if not as *de facto* trademarks. For example, MetLife has licensed the Peanut characters since 1985. According to MetLife, “[t]he magic of the Peanuts® brand has helped personify MetLife’s friendly and caring attitude as well as enhance its image of commitment and trustworthiness.”¹²¹ However, MetLife has contractual agreements that control MetLife’s use of the Peanuts characters.¹²²

Torvalds has a chapter on intellectual property in his book. He states that “there really *are* two sides to intellectual property, and they share nothing but the name.”¹²³ One side of it is that “it’s the act of creation...It’s something so precious that selling it isn’t even possible: It’s indelibly a part of who you are.”¹²⁴ The other side is that “intellectual property is huge business.”¹²⁵ Torvalds has some objections about copyright, in that rights that are too strong hurt

A2=Tux&p_tagrepl%7E%3A=PARA2%24COMB&p_op_ALL=AND&a_default=search&a_search=Submit+Query (last visited June 3, 2010).

¹²⁰ The Linux Foundation, <http://www.linuxfoundation.org/> (last visited June 3, 2010).

¹²¹ MetLife: Press & Promotions, <http://www.metlife.com.hk/eng/press.htm> (last visited June 3, 2010).

¹²² MetLife: Snoopy as Brand Icon, <http://www.metlife.com/brandcenter/visual/snoopy/brand-icon.html#guidelines> (last visited June 3, 2010).

¹²³ Torvalds, *supra* note 10, at 205.

¹²⁴ *Id.*

¹²⁵ *Id.*

both consumers and other creative people. He states, “I happen to absolutely love copyright, I just don’t believe in taking the rights of the authors *too* far.”¹²⁶ He goes on to say:

And in the end, copyright is, despite even the DMCA, a fairly mild and well-behaved form of intellectual property. The notion of “fair use” does still exist, and holding a copyright does not give *all* rights to the work to the copyright holder.

The same cannot be said for patents, trademarks, and trade secrets; the heavy drugs of IP.¹²⁷

Some of Torvalds’ objections to patents are that it takes a long time to get a patent and the patent office does not have the resources to evaluate the originality of the invention. Torvalds does not like trade secrets, in part because the secret can be shared, but still protected as a trade secret.¹²⁸

Beyond including trademarks in the “heavy drugs of IP,” Torvalds does not state what his objections to trademarks are, although in reference to the Linux trademark case, he states, “what was more irritating at the time was the fact that the entire trademark system put this onus on me, who had done nothing wrong, to go out and fight the guy.”¹²⁹ According to Torvalds, “finding peace in this intellectual property war is what open source is all about.”¹³⁰

The point of the above discussion is that Tux the penguin is not a registered trademark and is not claimed as a trademark and this situation is intentional. Torvalds does not like trademarks and did not want the Linux trademark, but took it because it was the best option for protecting Linux for himself and others to continue to use on *his* terms, under the GPL.

VIII. Conclusion

The most important thing that happened in protecting the LINUX trademark was the early copyright of the Linux operating system. The Linux trademark protection flows from that,

¹²⁶ *Id.* at 207.

¹²⁷ *Id.* at 208.

¹²⁸ *Id.* at 208-210.

¹²⁹ *Id.* at 135.

¹³⁰ *Id.* at 210.

as there would not have been anything to trademark without the copyright. The copyright was intentional, but the trademark was accidental. Had Della Croce not registered the trademark and forced the Linux community to file a cancellation petition, it is very likely that the LINUX trademark would now be a common law trademark. When challenged by Della Croce, the Linux community was completely united in its defense of the LINUX mark and there were no opportunists who broke ranks to try to gain leverage against the others. This unity was a key factor in eventually negotiating the settlement and getting the mark assigned to Torvalds.