

Unlike many of the companies in its sector, Apple is a whole product solutions company that is vertically oriented and operates in a platform-specific market.<sup>1</sup> According to Apple's most recent 10-K filing, "Apple is the only company in the personal computer industry that designs and manufactures the entire personal computer—from the hardware and operating system to sophisticated applications."<sup>2</sup> Apple's strength is in creating complements to its own products.<sup>3</sup> The company maintains a proprietary hardware platform, in addition to creating an operating system for the platform, and a core suite of multimedia applications to complement the operating system.

The total solution approach is even stronger at Apple than it is at IBM, as while IBM decided to embrace Linux and other open source standards for its computers, Apple has instead decided to create Darwin, "the Open Source, UNIX-based foundation of Mac OS X".<sup>4</sup> Darwin is based upon FreeBSD, and incorporates technologies such as Apache. However, by creating a separate entity, Apple has maintained a level of control over its open source components that IBM has not. This added control allows Apple to ensure the Mac OS X runs optimally on Apple's proprietary line of hardware.

Additionally, by maintaining a proprietary line of hardware, Apple has avoided the problem that Microsoft faces of being liable for supporting potentially infinite system configurations. Apple restricts the hardware that its platform uses to a finite number of configurations, and does not guarantee continued support to hardware over five years old. Thus, if Apple sells computers in five different configurations each year, and only supports old hardware for five years, it only has to worry about twenty-five different hardware configurations.

While Microsoft opted to delegate system assembly to other companies in favor of making money through software sales, Apple has chosen the model that IBM took in the '60s. Apple creates software largely to generate revenue from selling its hardware products. Apple's operating system, Mac OS X, and applications suite, iLife, both come preinstalled on all new Apple computers. Users must buy the software if they upgrade to the newest version during the lifetime of their system. The primary purpose of developing the software is to drive sales of Apple hardware, as the installed base is too small to generate serious revenues from software sales. In 2003, Macintosh hardware sales accounted for \$4,491 million of Apple's revenue, while software sales accounted for \$362 million of Apple's revenue. The iPod alone generated an additional \$345 million in hardware revenue, making it clear that while Apple invests heavily in creating software, most of its revenue comes from the sale of new hardware.

While IBM was successful in unbundling its software from its hardware offerings in the '70s, Apple has been unable to do so because it has been relegated to a niche market in which it has to make most of its profit from hardware sales.<sup>5</sup> Apple is currently unable to unbundle its software products from its hardware products because, unlike when IBM unbundled, it does not have a dominant operating system, or a suite of applications that it could easily sell to non-Mac users.<sup>6</sup> Apple has let Microsoft create the Mac's productivity suite, leaving Apple to create a series of multimedia applications that

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<sup>1</sup> Michael A. Cusumano, *The Business of Software*, p. 53

<sup>2</sup> "Form 10K for Apple Computer, for Fiscal Year Ended Sept. 27, 2003", [Securities Exchange Commission](http://sec.gov/Archives/edgar/data/320193/000104746903041604/a2124888z10-k.htm).  
<http://sec.gov/Archives/edgar/data/320193/000104746903041604/a2124888z10-k.htm>

<sup>3</sup> Carl Shapiro and Hal Varian, "The Art of Standards Wars," *California Management Review*, Winter 1999, p.18

<sup>4</sup> "Apple—Mac OS X—Features—Unix", [Apple.com](http://www.apple.com/macosex/features/unix/). <http://www.apple.com/macosex/features/unix/>

<sup>5</sup> Michael A. Cusumano, *The Business of Software*, p. 87

<sup>6</sup> Michael A. Cusumano, *The Business of Software*, p. 92

take advantage of the capabilities of Apple hardware, but have little unbundled value. As Apple has not been pressured by the Department of Justice to unbundle, it is unlikely to do so.

In 1993, Apple created a version of its System 7 operating system that was compatible with the 486, which it codenamed “Star Trek”. Star Trek never made it to the marketplace for two reasons. First, Apple was unable to get PC vendors such as Dell to install it on their computers because they already had contracts with Microsoft requiring them to pay for a license to Windows for every computer shipped, regardless of whether the computer contained Windows.<sup>7</sup> Secondly, Apple decided that it was too risky to unbundle the operating system from the hardware, as if people could enjoy the Macintosh user experience on a competitor’s hardware, Apple would lose valuable hardware sales. Thus, Apple chose to forfeit a strategic chance it had to steal market share in the operating systems market from Microsoft. Rumor has it that Apple maintains a build of Mac OS X that is x86-compatible, but has not released it for the same reasons that Star Trek was not released.<sup>8</sup> It is said that this build exists so that it can be sold in the event that IBM ceases developing the PowerPC platform, and Apple is unable to find another source of proprietary hardware.

When the Macintosh was first released, several clones were soon made. However, unlike the IBM, the Mac had a complicated ROM that could not easily be reverse-engineered. As a result, the original clone-makers pulled ROMs from Apple Macs to put in their machines.<sup>9</sup> When Apple briefly licensed Macintosh clones in 1995, it made the mistake that it had previously avoided through the cancellation of Star Trek. When Steve Jobs returned to Apple in 1997, he realized that while Apple could have gained a strategic advantage over Microsoft if it had introduced clones earlier, it had introduced its clones too late, and was cannibalizing its hardware sales. After making this determination, Jobs ended the clone licensing program, which secured the Macintosh as a niche platform that would not directly compete with Intel.<sup>10</sup>

Thus, it is clear that Apple has decided to follow a business model similar to the one followed by IBM in the 1960’s, forfeiting its chance for market domination to Microsoft. Perhaps, Apple’s insistence on offering a complete solution is what has enabled it to survive all of these years, albeit with minimal market share. If Microsoft is the utilitarian McDonalds of the operating systems industry, then perhaps Apple is the luxurious Ruth’s Chris Steakhouse. People don’t buy steaks because they provide more protein than hamburgers; they buy them because consuming them is a more enjoyable experience.

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<sup>7</sup> “Star Trek Project”, The Wikipedia. [http://en.wikipedia.org/wiki/Star\\_Trek\\_project](http://en.wikipedia.org/wiki/Star_Trek_project)

<sup>8</sup> “Conclusion: Why Mac OS X”, kernelthread.com. <http://www.kernelthread.com/mac/osx/conclusion.html>

<sup>9</sup> “The Macintosh Clones”, Low End Mac. <http://lowendmac.com/clones/index.shtml>

<sup>10</sup> “Apple Macintosh”, BrainyEncyclopedia. [http://www.brainyencyclopedia.com/encyclopedia/a/ap/apple\\_macintosh.html](http://www.brainyencyclopedia.com/encyclopedia/a/ap/apple_macintosh.html)