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# A Strategic Analysis of the Release of Apple's Boot Camp Assistant

A Memorandum to CEO Steve Jobs

*Proprietary Material*

Ruslan Kurdyumov, Dave Kratz, Mark McDuff, Jeremy Leibowitz, and Stephen Chou  
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When Apple introduced the beta version of the Boot Camp Assistant in April 2006, the press release stated that although “Apple has no desire to sell or support Windows...many customers have expressed their interest to run Windows on Apple’s superior hardware now that we use Intel processors...We think Boot Camp makes the Mac even more appealing to Windows users considering making the switch.<sup>1</sup>” Since the press release, Apple has included a finished version of Boot Camp Assistant in the basic utilities package with the newest version of their operating system, OS X Leopard.

The last line of the press release provides some key strategic insight. Boot Camp was not released solely to increase the options of current Apple customers. Rather, Boot Camp was also released because of the potential of conversion of non-Apple users. The main advantage that Apple gains from Boot Camp is the alleviation of software incompatibility as a sticking point for sales. Taking a Mac and a DVD player as the operating comparison, Boot Camp essentially turns the Mac into a DVD/VCR combination. It allows users who have accumulated non-Mac software to switch to a Mac without having to scrap a potentially substantial prior software investment. The thought process behind allowing customers to easily partition their hard drives is that it serves to wean them off the use of their non-vital old software while seamlessly integrating OS X usage time for tasks like checking e-mail and browsing the internet. The endgame for Apple is the hope that their users will stop wanting to consistently reboot in order to change operating systems. Rather, the user will hopefully find comparable substitutes for old software that can be run in the OS X environment, completely alleviating any need for competing operating systems.

As the market stands<sup>2</sup>, over 91% of the operating systems in use are of the Microsoft Windows variety (Figure 1). Thus, any move by Apple to draw customers from any operating system will primarily affect Microsoft. Apple should be prepared, then, to witness Microsoft retaliation strategies aimed at forcing customers to remain loyal to Windows through one means or another. One of the possible strategies of Microsoft could be curtailing the productivity of

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<sup>1</sup> *Apple Introduces Boot Camp*. Press Release, April 5, 2006. Online. <http://www.apple.com/pr/library/2006/apr/05bootcamp.html>.

<sup>2</sup> *Operating System Market Share, April 2008*. May 3, 2008. Online. <http://marketshare.hitslink.com/report.aspx?qprid=8>

Office for Mac. MS Office is a huge product in the educational, home, and office markets. If Microsoft cripples the functionality of the Mac version of MS Office, it could potentially keep people from switching completely to OS X.

Based on Microsoft's reactions to Boot Camp, Apple needs to respond in kind. Internally, they could counter by developing software to compensate for lost functionality or they could attempt to replace Microsoft's software package altogether. Alternatively, they could promote a third party software package that is fully functional on OS X.

Regardless of the final outcome, Apple's release of the Boot Camp Assistant as a part of its included utilities in OS X Leopard is a step toward securing further hardware market share while stealing a share in the operating system market from Microsoft Windows. If Apple's strategy finds success, the complex, multi-phase strategic scenario that will undoubtedly play out is going to consist of retaliation measures by Microsoft and PC manufacturers. If Apple is to be successful in their conversion plan, they will then need to counter these retaliation strategies by one means or another.

## Operating System Market Share

April 2008

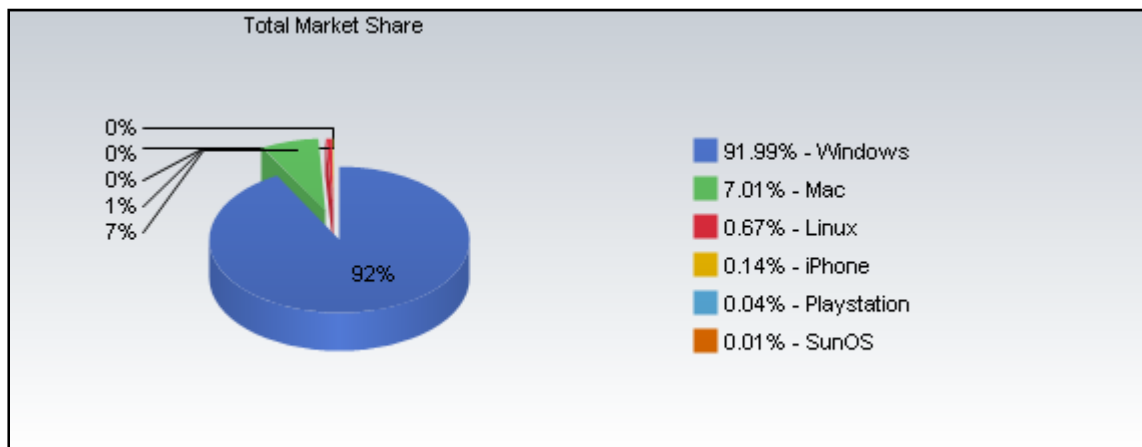


Figure 1

## Pros for Apple

The major advantage of Boot Camp is that it allows users to run Windows programs, alleviating switching costs between two operating systems. Now they can run these programs when necessary but run them on an Apple machine. In fact, analyst Gene Munster, who works for Piper Jaffray, conducted a small-scale survey with some very promising results<sup>3</sup>. Of the participants who plan to buy a PC for their next purchase, Boot Camp deals with 70% of their concerns, primarily familiarity with Windows and use of the operating system for work and school. Further, according to the survey, 14% of PC owners plan to buy a Mac as their next computer, but after hearing about Boot Camp, another 8% said they'd switch to Mac.

Because of Boot Camp, the utility of the Apple hardware will increase – it can be used for every personal computing need. In fact, this will complement Apple's primary commercial strength – their hardware. Apple has always been a hardware company, not an operating system company, and Boot Camp strengthens Apple's core strategy – selling more computers.

Another clear positive is that Boot Camp fills a current need for tech-savvy Apple customers. Many of them want or need to run Windows and are prepared to hack OS X if necessary. Releasing an Apple-certified product will prevent customer support issues from attempted hacking of OS X and will also fill a niche in the multiple OS market. Firms hoping to release virtualization or dual boot software will have a hard time competing with an Apple-made and approved product.

On a related note, allowing Apple machines to dual boot to Windows will prevent Mac users from buying PCs altogether. Users who primarily work on Macs but have a dedicated PC for a few programs or functions will be able to eliminate the PC. Educational institutions that run PCs for a few applications like AutoCAD can also avoid buying PCs once they have Dual Boot Macs.

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<sup>3</sup> “Apple's Stores, Boot Camp Software to Boost Mac Sales.” The Online Reporter, July 15, 2006. < [http://www.onlinereporter.com/article.php?article\\_id=7173](http://www.onlinereporter.com/article.php?article_id=7173)>.

Finally, releasing Boot Camp will result in a stock price and market share increase for Apple. In fact, just one week after the announcement, Apple's stock price jumped 10%, according to PC World Magazine<sup>4</sup>. Moreover, since the Boot Camp release announcement, Apple's US computer market share has grown from around 5% to 14% as of February 2008<sup>5</sup>. Obviously the growth is not purely a result of the Boot Camp release, but it is an indication of Apple's growing market presence, further encouraged by Boot Camp and its synergy with the new generation of Intel Macs.

### Cons for Apple

The greatest drawback to Boot Camp is that it essentially undifferentiates Apple and Windows operating systems – users no longer have to pick one of the two. At the same time, Boot Camp makes it time-consuming to switch between operating systems – you must restart your computer to do it. Moreover, non-tech savvy users will find it very hard to transfer files between the two partitions without using an external device like a USB drive. Essentially Boot Camp will allow a user to use two operating systems, but the hassle will drive the user to prefer only one. And since Windows is the operating system that supports just about everything, there's always the danger that some users will be weaned off their OS X. In fact, Apple once tried the equivalent of the dual boot strategy – it offered Macs with PC cards<sup>6</sup>. The strategy was to snatch up PC users who would see the superiority of the Mac OS. Instead Mac users bought the computers in droves and ended up converting to the state of the art Windows 3.0.

Strategically, Boot Camp is somewhat of a disincentive to software developers who are exploring making Mac applications. Autodesk, the developer of AutoCAD, would have little to

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<sup>4</sup> “Users Find Flaw in Boot Camp.” PC World, 13 April 2006. <<http://www.pcworld.com/article/id,125393-page,1/article.html>>.

<sup>5</sup> “Apple snags 14 percent of US-based PC retail sales in February.” 17 March 2008. <[http://www.appleinsider.com/articles/08/03/17/apple\\_snags\\_14\\_percent\\_of\\_us\\_based\\_pc\\_retail\\_sales\\_in\\_february.html](http://www.appleinsider.com/articles/08/03/17/apple_snags_14_percent_of_us_based_pc_retail_sales_in_february.html)>.

<sup>6</sup> “Boot Camp: Apple's Insanely Bad Idea.” AppleMatters. 6 April 2006. <<http://www.applematters.com/article/bootcamp-apples-insanely-bad-idea/>>.

no incentive to invest heavy resources in developing a Mac version of its program once users can easily switch to Windows and run AutoCAD on a Mac computer. Obviously exclusive Mac developers will continue catering to the niche Mac market, but the more effective dual boot or virtualization become, the less incentive there would be for Windows developers to even consider developing Mac programs.

Further, by opening their hardware to Windows, Apple is inviting a rash of customer service complaints. The Windows OS is much more virus-susceptible, and though partitioning would limit the damage that Windows viruses do to just the Windows partition, you'd still have a sizeable chunk of the Apple hardware affected. Partitioning is dangerous for novice computer users, so Apple will need to devote resources to deal with the inevitable issues that arise. Apple will also need to waste time with users who try to get help with Windows issues on their Mac.

Finally, allowing dual booting will drive up sales of Windows operating systems. Boot Camp doesn't come with a copy of Windows – customers will need to purchase their own copy. So Apple's product will be an obvious complement for Windows, one of the core products of their main competitor. To take any steps forward, Apple will be taking a clear step back.

### Pros & Cons for Microsoft

Microsoft is a company traditionally focused on developing, manufacturing, licensing, and supporting software products for computing devices. The primary product of Microsoft is the Microsoft Windows operating system and the Microsoft Office pack that is associated with it. Apple, by creating a simple way for their customers to utilize both Windows and OS X, has allowed the general public to choose between computers based on their merits instead of simply the available operating system. For Microsoft, this has both positive and negative repercussions.

In essence, Boot Camp allows for a previously unreachable group of customers, Apple-only users, to be exposed to the Windows operating system. “Apple Inc.’s share of the U.S. personal computer market for the third calendar quarter of 2007 was 8.1 percent,” was the report

which estimated U.S Mac shipments rising at a rate of 37.2 percent year-over-year<sup>7</sup>. This rapidly growing portion of the market would not have been available to Microsoft in the past, but with Boot Camp, Windows can be used by that group. In the most basic sense, Macintosh has opened the door for Mac users to purchase Windows and all the associated Microsoft products.

Many developers of software currently produce their product for both Mac OS X and Windows. Allowing the customers to possess both Windows and OS X operating systems eliminates the need for developers to create the product for both. The companies know that Windows still possesses the majority of the market, so it becomes obvious that they can save money by developing their product only on the Windows operating system. This would strengthen the Windows platform as well as weaken OS X.

Since the majority of customers are used to the Windows operating system, the population can now purchase Apple computers simply based on computer specifications and price. They can still stick with their familiar operating system while using the new Apple product. Customers who purchase Macs would have easy access to both operating systems. By exposing Windows users to OS X, some may eventually use OS X exclusively.

Apple does not offer support for Windows, so customers will inevitably run into compatibility problems. As a result, they will be encouraged to utilize OS X more often, since they already own the system which was intended to run OS X. It is possible for Windows users testing out the Apple computers to convert to OS X because of the irresolvable issues they may encounter.

### Microsoft Response

Microsoft will have incentive to respond to Boot Camp so that they do not lose their market share. If Boot Camp is successful, current Microsoft Windows users could switch to using only Apple operating systems in the future. Microsoft's best strategy is some combination of improving their products and making it less convenient to use Apple products. By improving

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<sup>7</sup> "Apple's U.S. Mac market share rises to 8.1 percent in Q3." 17 October 2007. <  
[http://www.appleinsider.com/articles/07/10/17/apples\\_u\\_s\\_mac\\_market\\_share\\_rises\\_to\\_8\\_1\\_per cent\\_in\\_q3.html](http://www.appleinsider.com/articles/07/10/17/apples_u_s_mac_market_share_rises_to_8_1_per cent_in_q3.html)>.

their products, Microsoft creates more competition and causes customers to desire Microsoft Windows more than they already do. If Boot Camp users are always using the Microsoft Windows partition, then they will not switch to an Apple operating system in the future since they would have to abandon Microsoft Windows. As long as Microsoft Windows is still used and customers are not converted to an Apple operating system, Microsoft should be satisfied.

Microsoft can improve its operating system, making it more convenient to use. The most recent release of Windows, Vista, has performed poorly to date. Vista is considered to be such a bad product that many customers have decided to use the previous version of Windows, XP, instead. To encourage OS X users to switch exclusively to Windows, Microsoft needs to release a superior version of Windows.

Alternatively, Microsoft can discontinue releasing updates for Office for Mac. In a relatively short period of time, this would cause Office for Mac to become obsolete. Additionally, Microsoft could cripple the functionality of Office for Mac by removing convenient or popular features from the software package. Although this is a dangerous strategy, it has already been instituted in Microsoft's removal of the equation editor in Office for Mac. Thus, there is a clear incentive for users to choose the Windows version of MS Office, as it would be fully updated and fully function.

By following these strategies, Microsoft hopes to make customers continually desire to run Windows on their computers. To use Boot Camp, they still have to buy Microsoft Windows, which is the goal of Microsoft. As long as customers still buy copies of Windows, Microsoft should not care about the hardware on which the operating system is running because they do not manufacture the computers.

### PC Manufacturer Response

Currently holding 86% of the computer market, PC manufacturers would obviously respond to a strong trend towards the purchase of Apple computers. While Microsoft continues to make money from users buying copies of Windows for Apple computers, PC manufacturers

feel an immediate impact. If consumers begin switching to Mac hardware to take advantage of Boot Camp, PC manufacturers would have to respond to their declining market share.

The key to Boot Camp is that Apple computers run on the same basic framework that Windows-native computers do – the x86 standard. Therefore, with approximately the same amount of effort as it took Apple to produce Boot Camp, Microsoft would be able to produce a Boot Camp analogue. Moreover, highly-priced Apple hardware dwarfs the \$130 price tag on OS X Leopard. Were PC manufacturers to follow Psystar's<sup>8</sup> lead and create PCs that are manufactured to run the Mac OS X, Apple could lose significant potential profits from the presence of a cheaper substitute. For the same computational performance, Apple computers are, on average, 12% more expensive, which would be an obvious incentive for the consumer to choose non-Apple hardware<sup>9</sup>.

While the Mac OS X end user license agreement prohibits running OS X on non-Apple hardware, recent court rulings have created a precedent allowing users to run whatever software they like on their hardware, making this clause of the license agreement ineffectual.

### Apple Counters

If Microsoft pulls the Office productivity suite and related products, Apple can respond with a lawsuit, based on anti-trust. Although a fully successful anti-trust suit would be unlikely, Apple could approach it in three ways.

The first way is to suggest a break-up of Microsoft into two companies, as was considered during the anti-trust case settled in 2000. This would separate the Windows group

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<sup>8</sup> Psystar has attempted to release an “OpenMac” PC, jokingly referred to as a “Hackintosh,” which runs OS X on non-Apple hardware.

<sup>9</sup> “Firm says Macs may cost only slightly more than PCs.” AppleInsider. 16 May <2006 <[http://www.appleinsider.com/articles/06/05/16/firm\\_says\\_macs\\_cost\\_only\\_slightly\\_more\\_than\\_pcs.html](http://www.appleinsider.com/articles/06/05/16/firm_says_macs_cost_only_slightly_more_than_pcs.html)>.

from the applications group, making it more profitable for the applications group to provide a platform-independent version of Office.

The second way is to suggest that Microsoft must continue releasing Office for Mac. This option still leaves Microsoft with some options, such as disabling or crippling the Mac version. In these first two cases, Apple is not forced to produce a non-Office productivity suite.

The third way is to suggest that the Microsoft formats for Office are opened, leaving Apple to produce its own office productivity suite. This can be a great opportunity for Apple if it is able to create an office suite that is intuitive and follows the path of their other integrated software while remaining fully featured. This new software could cause Apple to lose market share, especially in the enterprise market if their productivity suite does not meet the standards of business work and is not an easy switch.

Additionally, Apple could encourage the development of programs like OpenOffice as free, fully-functional alternatives to Office for Mac. This is a good option because it permanently removes OS X dependence on Microsoft.

Apple can also respond competitively to any of Microsoft's moves by lowering the price of its products. Price is one of Microsoft's main selling points, which they use in synergy with the lower price of the PCs that run Windows. One main argument against Apple products is the cost, and the cost of Mac OS X can be lowered if Apple believes the exclusivity of their own hardware can cover losing money on the operating system.

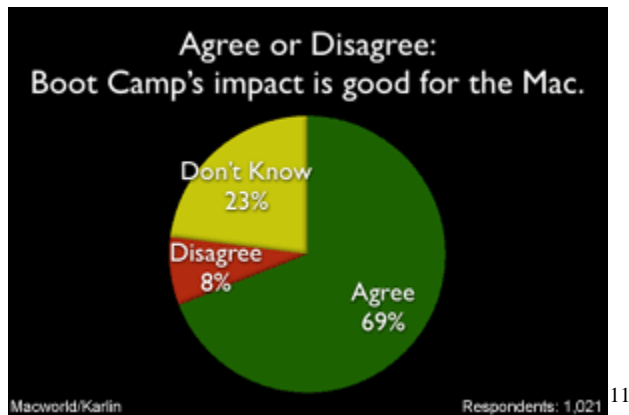
### Public Perception of Boot Camp

The public intuition and associated response are important indicators of the future success of Boot Camp's fit with the Apple family of hardware and software.

- 39% of current Intel Mac owners installed or plan to install Boot Camp
- 60% of would-be buyers plan to install Boot Camp<sup>10</sup>

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<sup>10</sup> "Macworld survey: Users adopting Intel, Boot Camp." Macworld. 15 May 2006 <<http://www.macworld.com/article/50820/2006/05/survey.html>>.



### Boot Camp Perceptions<sup>12</sup>

	Agree	Disagree	Don't Know
Software developers will stop producing programs to run on the Mac	17%	55%	28%
Boot Camp is likely to attract more users to the Mac platform	83%	5%	12%
Boot Camp makes me more likely to stick to a Mac	50%	37%	13%

### Conclusion

Overall, it is a good idea for Apple to release Boot Camp. It alleviates switching costs for users who are heavily invested in Windows-based software while allowing them to perform menial tasks, like checking e-mail and surfing the internet, on the seamlessly-designed OS X. Boot Camp, then, is effectively a safety net for hesitant converts to Apple. Additionally, Boot Camp improves the utility of every Apple computer because all Windows programs become complements to Apple computers as well. Due to the projected success of Boot Camp in drawing increased market shares in both the hardware and operating system markets, retaliation from Microsoft and PC manufacturers is likely. These retaliatory measures, however, can be sufficiently countered by Apple to minimize their effects. The end result, then, would be increased market share in both the hardware and operating system market for Apple.

<sup>11</sup> Ibid

<sup>12</sup> Ibid