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Apple (in 2013): How to Sustain a Competitive Advantage?

APRIL 22, 2013, 11:23 P.M. After a hectic day, an exhausted Tim Cook is arriving back at Apple's headquarters in Cupertino, California. The Apple CEO is trying to find some quiet time to look over the day's events and handle some e-mails. Having joined Apple in 1998 as Senior Vice President of Worldwide Operations, Cook had been appointed CEO based on the recommendation of Steve Jobs, who lost his battle with cancer a few weeks after resigning from the top spot in August 2011. Cook had been filling in as CEO while Jobs had been on medical leave. Cook was a low-profile, but high-impact executive at Apple who was responsible for restructuring Apple's supply chain, which had allowed Jobs to focus on high-profile product launches. Moreover, Apple's now super-efficient supply chain also increased its profitability tremendously.

Steve Jobs had led Apple through a period of innovation that saw the introduction of category-defining products such as the iPod, iPhone, and iPad and disruptive business models complementary to those products, such as the Apple Retail Store and the iTunes online store. iTunes had started by selling music for Apple's iPods and later expanded into books, movies, television shows, and applications for all of Apple's iOS devices. Apple's competitive advantage under Jobs was the ability to continually innovate, but Cook couldn't help but wonder if such success was sustainable, especially without Jobs.

Just the previous September, to great fanfare and expectations, Apple had launched the new iPhone 5. In his presentation to an exuberant crowd of loyal Apple devotees in San Francisco's Moscone Center that day, Cook had highlighted Apple's great performance by focusing on its retail stores and the sales of Mac notebooks and iPads. In particular, Cook had emphasized the performance of Apple's 380 retail stores in 12 countries around the world.¹ An astounding 83 million people had visited Apple retail stores in the preceding quarter, which equates to almost one million people a day, on average. In addition, he had stated that Apple ranked number one in notebook sales in the United States, with 27 percent market share. That represented a notebook sales growth of 15 percent a year. Cook had also commented on the iPad, crediting it with creating a post-PC revolution. Having sold 17 million iPads between April and June 2012, Apple claimed 68 percent market share in tablet computers. In addition, the iPad accounted for 91 percent of web traffic by all tablets, which Cook attributed to the then over 700,000 iOS applications (apps) available to Apple users. A whopping 94 percent of Fortune 100 companies had begun deploying Apple iPads in the workplace, many with customized apps to provide enterprise-specific business solutions. "To put this achievement in some perspective, we sold more iPads than any PC manufacturer sold of their entire PC lineup," Cook said.² By June 2012, Apple had sold a total of 84 million iPads, a product that had been introduced less than 2.5 years prior.

On August 20, 2012, Apple's stock market valuation reached \$623 billion, making it the most valuable public company of all time. The company's value would peak in mid-September at over \$650 billion. Signs of trouble soon emerged, however, and Apple's stock price started to fall. Though the iPhone 5 launch was successful, analysts were able to see Apple's competitors gaining parity. Also, despite Apple's victory over Samsung in court over patent infringements, Samsung was outselling Apple in smartphones for the year 2012 and had proven that its Galaxy S3, which ran Google's Android operating system, was a viable substitute for the popular Apple iPhone 5.

Professor Frank T. Rothaermel prepared this case from public sources. The author is indebted to Research Associate Alicia Ellberger (GT MBA '10) for her contributions to an earlier version of this case and Professor Erin Zimmer and Justin Collins (GT MBA '14) for their contributions to the current version. This case is developed for the purpose of class discussion. It is not intended to be used for any kind of endorsement, source of data, or depiction of efficient or inefficient management. All opinions expressed, and all errors and omissions, are entirely the author's. © by Rothaermel, 2015.

As Cook sat down at his desk, he wondered what the company's next move should be, given the increasingly competitive marketplace for its products. The current company value was \$370 billion. (See Exhibit 1 for a look at how fast Apple's value had declined in recent months.) Steve Jobs had always looked for the "next big thing" despite how successful past ideas had been. Cook wondered if Apple would be able to sustain its competitive advantage or if Apple's time had passed.

The Creation of Apple, Inc.

In 1976, Steve Jobs and Steve Wozniak conceived the idea of a personal computer company and founded Apple Computer, Inc. (The word *Computer* was dropped in 2007 to reflect Apple's expansion from the personal computer market to consumer electronics in general.³) Only 21 years of age, Jobs had to sell his Volkswagen to get money to start the company. Jobs and Wozniak, then 26, began to assemble personal computers in Jobs' garage with a small group of friends. Soon after, they received additional financing to spur the growth of the company. In 1978, the Apple II, the first personal computer, was launched and sold for \$666.66.⁴ In December of that same year, Apple launched a successful IPO, making it a publicly traded company.

By 1980, Apple had released three improved versions of the personal computer, and Jobs and Wozniak had become multimillionaires. Then, IBM entered the personal computer market in 1981 and quickly became a serious competitor. IBM's open architecture was easily imitable by other manufacturers and soon became the industry standard, giving rise to many more computer companies in the United States (e.g., Compaq and Dell), as well as in Taiwan, Korea, and other Asian countries. Even more threatening was the consortium between IBM, which specialized in the development of computer hardware; the newly formed Microsoft with its DOS operating system; and Intel with its expertise in memory and processors. By 1982, IBM had increased its profitability and market share substantially, and Apple's position was under attack.

"OBSESSED WITH DESIGN"

Nonetheless, in just over 10 years Apple had grown into a \$2 billion company with over 4,000 employees.⁵ In 1984, Apple introduced its finest creation yet: the Macintosh. Jobs' curiosity and intuition had led him to become fixated on design and style. This passion began when Jobs dropped out of Reed College at the youthful age of 17. "The minute I dropped out, I could stop taking the required classes that didn't interest me, and begin dropping in on the ones that looked interesting," Jobs remembered.⁶ He decided to take a calligraphy class to learn about serif and sans serif typefaces and what makes great typography: "It was beautiful, historical, artistically subtle in a way that science can't capture, and I found it fascinating. None of this had even a hope of any practical application in my life. But 10 years later, when we were designing the first Macintosh computer, it all came back to me. And we designed it all into the Mac. It was the first computer with beautiful typography."⁷ Jobs firmly believed that if he had not dropped out of college and into that calligraphy class, the Mac would never have had multiple typefaces and proportionally spaced fonts. And, "since Windows just copied the Mac, it's likely that no personal computer would have them," if he had not made that decision.⁸

Although the Macintosh was the first personal computer applauded for unique industrial design and ease of use, it had a slower processor than IBM PCs and their clones, and very few compatible software programs due to Apple's closed proprietary operating system. As a result, the Mac was gradually pushed to the periphery as a niche player with customers mainly in education and graphic design. Apple's integrated value chain enabled the company to produce computers of high quality, but placed the Macintosh at a price disadvantage as the growing consumer technology industry became increasingly commoditized.

NEW MARKETING GURU

In 1983, Jobs decided to bring in John Sculley to run the company with him. At the time, Sculley was a marketing guru from Pepsi whom Jobs “thought was very talented.”⁹ Sculley was responsible for the “Pepsi Challenge” and “Pepsi Generation” ad campaigns that helped Pepsi overtake Coca-Cola in market share for the first time in the history of the “Cola Wars.” He had also turned around PepsiCo’s failing food division by bringing in new management, improving product quality, and instituting new accounting and financial controls.¹⁰

Apple’s innovative advertising tale started on January 22, 1984. During the third quarter of the Super Bowl that year, “one of the most famous television commercials of all time” was broadcast.¹¹ The ad was based on the dystopian society depicted by George Orwell in his novel *1984*. Hundreds of identical drones were shown listening to their larger-than-life dictator, whose black-and-white face was projected onto a screen in the middle of the room. Suddenly, a beautiful woman, escaping capture from armed guards, threw a hammer at the screen which exploded in a Technicolor display of dazzling light. The ad stated, “On January 24th, Apple Computer will introduce Macintosh. And you’ll see why 1984 won’t be like *1984*.”¹² In this fashion, customers were introduced to Apple as the revolutionary, subversive, and rebellious company of the 1980s, ready to take on the tyrant of IBM.

For a while after John Sculley joined Apple, things went well. But Jobs later recalled that “our visions of the future began to diverge and eventually we had a falling out.”¹³ Apple’s core identity changed with Sculley in charge. The business strategy shifted from differentiation based on a premium product with a high price tag to producing a low-cost product with mass-market appeal. Sculley’s new ambition for Apple was to compete directly with IBM in the household-computer market. Apple worked on bringing down the cost of manufacturing and formed alliances with Intel, Novell, and even its old nemesis, IBM. At the same time, Apple moved toward desktop publishing, multimedia, and peripherals. However, a series of major product flops, missed deadlines, and unrealistic earnings forecasts destroyed Apple’s reputation. As a consequence, Apple’s profitability continued on a downward slope. With dismal sales and declining net income, a power struggle erupted between Jobs and Sculley, who eventually succeeded in convincing Apple’s board of directors to throw Jobs out of Apple in 1985.

HARD TIMES

To add insult to injury, Microsoft released its graphical user interface (GUI)-based operating system, Windows 3.0, in 1990, effectively cementing the Wintel standard with 90 percent market share in the PC industry. Wintel represented the powerful combination of a Windows operating system running on the x86 architecture chips made by Intel. Today, the x86 architecture is ubiquitous among computers, and a large amount of software supports the platform, including operating systems such as MS-DOS, Windows, Linux, BSD, Solaris, and Mac OS X. The innovator Apple had become a non-factor in the PC industry, retreating to ever-smaller niches of the market.

In June 1993, leadership changed hands again from Sculley to Michael Spindler. Spindler continued the company’s focus on cost-cutting but also made international growth a main objective. By 1995, Apple was spreading itself too thin across product lines and geographic markets. It had lost any strategic focus and could not stop operating in the red.

Steve Jobs Returns

During this time, Jobs was starting over. “What had been the focus of my entire adult life was gone, and it was devastating.”¹⁴ Jobs had been fired very publicly from a company he had helped to create, and even considered leaving Silicon Valley for good. He later reminisced, “I didn’t see it then, but it turned out that getting fired from

Apple was the best thing that could have ever happened to me. The heaviness of being successful was replaced by the lightness of being a beginner again. . . . It freed me to enter one of the most creative periods of my life.”¹⁵

In 1986 Jobs invested \$10 million in Pixar Animation Studios.¹⁶ Since then, Pixar has earned 12 Academy Awards, 6 Golden Globes, and 11 Grammys, among many other awards. Pixar created the world’s first completely computer-animated feature film, *Toy Story*, and is now the most successful animation studio in the world, with films like *Toy Story 2* and *3*, *Monsters Inc.*, *Cars*, *Finding Nemo*, *The Incredibles*, *WALL-E*, *Up*, and *Brave*.

In 2006, Disney bought Pixar for \$7.4 billion in a deal that also landed Jobs a seat on Disney’s board of directors. “The addition of Pixar significantly enhances Disney animation, which is a critical creative engine for driving growth across our businesses,” Disney CEO Robert Iger stated.¹⁷ Jobs, the majority shareholder of Pixar at the time with 50.1 percent, became Disney’s largest individual shareholder with 7 percent.¹⁸ His holdings greatly exceeded those of the previous top shareholder of Disney, ex-CEO Michael Eisner, who owned 1.7 percent, and even Disney’s Director Emeritus Roy E. Disney, who owned less than 1 percent of the corporation’s shares.

Just one year prior to starting Pixar, Jobs had founded a computer company called NeXT, Inc., later known as NeXTSoftware, Inc. NeXT developed one of the first enterprise web application frameworks for the higher-education and business markets. In a bizarre twist of fate, Apple purchased NeXT on December 20, 1996, for \$429 million.¹⁹

Earlier in 1996, Gilbert Amelio had replaced Spindler as CEO of Apple, which was reporting a mere \$69 million in first-quarter revenues. Amelio’s intention was to revive Apple’s former strategy by focusing again on the premium-product market segment. Amelio made many changes at Apple, including terminating the IBM alliance and announcing massive layoffs of 30 percent of the company’s total work force of 13,400.²⁰ With the acquisition of NeXT, Amelio also brought Jobs back as a part-time adviser to Apple. Despite all these measures, Apple’s market share continued to tumble to just 3 percent worldwide.²¹

Apple experienced its worst year ever in 1997 and subsequently ousted Amelio due to crippling financial losses and a low stock price. Jobs was brought back as interim CEO in September of that same year. Thereafter, Steve Jobs succeeded in orchestrating one of the greatest corporate comebacks in modern-day history. (See Exhibits 2 and 3 for financial performance data.)

Restructuring Apple

When Steve Jobs returned to Apple in 1997, he was ready and eager to shake things up. In a meeting with Apple’s top executives, after hearing all their explanations as to why Apple was performing poorly, Jobs infamously roared: “The products SUCK! There’s no SEX in them anymore!”²² Jobs swiftly refocused the company that he had helped start and discontinued several products such as the Newton PDA, the LaserWriter printer line, and the Apple QuickTake camera—all now collector items for Apple enthusiasts.

During this time of restructuring, Jobs outsourced manufacturing to Taiwan and scaled down the distribution system by ending relationships with smaller outlets. With Jobs’ savvy insight for what consumers wanted, he launched a new, revolutionary website to sell Apple products directly to customers online. For the first time ever, he also opened Apple retail stores, tied to his build-to-order manufacturing strategy. Although these moves seemed risky at the time, all of these operational improvements helped to boost previously declining sales. For the first time in five years (since 1993), Apple once again became profitable.

Jobs also realized the necessity of making Apple’s operating system more accessible for software providers. He switched everything to the open-source, UNIX-based operating system, Mac OS X. This proved to be a more stable

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operating environment and permitted the company to issue annual upgrades in response to customer feedback. In 2005, Apple completed this transition by switching from PowerPC to Intel processors, which meant that Apple Computers could run not only the Mac OS X but also any operating systems that used the x86 architecture. This marked the beginning of a truly open era for Apple computers: They were now the most flexible, as well as the most attractive. As a result, Apple's stock price rose from \$6 in 2003 to over \$80 in 2006, surpassing even Dell's market cap, the then-number-one computer maker in the U.S.²³ Dell's CEO, Michael Dell, was left retracting the words he had very publicly spat nine years prior, "If I ran Apple, I would shut it down and give the money back to shareholders."²⁴

Jobs even formed an alliance with Apple's archrival Microsoft to release new versions of Microsoft Office for the Macintosh. In return, Microsoft made a \$150 million investment in non-voting Apple stock.²⁵ Jobs, in a cell phone call with Gates said, "Bill, thank you. The world is a better place."²⁶

Beyond changing the operating system, the most visible change Jobs instituted was leveraging industrial design to produce more aesthetically pleasing computers. Jobs almost instantly revitalized Apple's image by pushing the limits of technology and design. He appointed Jonathan Ive, a British designer, head of Apple's in-house Industrial Design group (IDg). There have been several distinct design themes in Jobs and Ive's collaboration over the years: translucency, colors, minimalism, and dark aluminum. Ive has been credited with being the chief designer of the iMac, the aluminum and titanium PowerBook G4, the MacBook, unibody MacBook Pro, iPod, iPhone, and the iPad.²⁷ Ive's work at Apple has won him a slew of awards and widespread recognition.

Jobs also started to brand Apple as a functionally appealing, hip alternative to other dull, clone-like computers in the market. Known for his candor, Steve Jobs once accused Michael Dell of making "un-innovative beige boxes."²⁸ Continuing in the same vein as the infamous 1984 television ad, Apple launched its "Think Different" campaign in 1997. The aim of the campaign was to reflect the culture of Apple, comprised of great people who think differently. The television advertisements featured major artists, scientists, and politicians who were seen as independent thinkers, including Albert Einstein, Martin Luther King, Jr., John Lennon, Thomas Edison, Amelia Earhart, Alfred Hitchcock, Pablo Picasso, and Jerry Seinfeld. Similarly, Apple's print advertisements had less to do with specific products, and everything to do with company image. They simply featured a portrait of one of the historic figures and a small Apple logo with the words "Think Different" in the bottom corner. In 2002, Apple launched the "Switch" advertising campaign, which showed various celebrities and non-celebrities talking about the reasons they switched from Windows computers to Apple computers. The "I'm a Mac, I'm a PC" commercials in the last half of the decade, which featured young actor Justin Long as a "Mac" and a middle-aged man (comic John Hodgman) in a suit as a "PC," helped to fortify the image of the Mac as young and hip and the PC as only suitable for business and not the creative needs of the younger generation. As a result of these efforts, Apple's stock price experienced unprecedented growth compared to the NASDAQ 100 index (see Exhibit 4). And this growth continued with Cook at the helm (see Exhibit 5). Cook had been Chief Operating Officer at Apple before becoming CEO. With an MBA from Duke University and a BS in Industrial Engineering from Auburn University, Tim's personality contrasted starkly with Jobs'; he displayed no ego and was much happier out of the limelight. However, there was a sharp increase in the value of Apple's stock from when Cook took over as CEO until its peak in September of 2012. At its height in 2012, Apple's stock price enjoyed a 9,000 percent premium over the index. It rose from \$375 a share in August 2011 to \$700 a share in September 2012 (see Exhibit 6).

Apple's Culture

As early as 1983, Steve Jobs coined the following motto at an offsite retreat: "It's better to be a pirate than join the navy."²⁹ Jobs' Macintosh team had only 80 employees at the time, but already he sensed that they were developing the group-think mentality that he detested. In response to "Captain" Jobs' cry, programmers Steve Capps and Susan Kare painted a rainbow-colored Apple eye patch onto a pirate flag and hung it above the Macintosh building. This iconic image became illustrative of Apple's unique corporate culture and also symbolic of Apple's first inspired slogan in the late 1970s, "Byte into an Apple."

According to its website, working at Apple was “less of a job, more of a calling.”³⁰ Apple looked for employees who were on a mission to “change the world” and create “some of the best-loved technology on the planet.”³¹ Apple promoted itself to prospective candidates as “a whole different thing” with “corporate jobs without the corporate part.”³² Apple looked for people who were “smart, creative, up for any challenge, and incredibly excited about what they do. In other words, Apple people. You know, the kind of people you’d want to hang around with anyway.”³³ From the start, Steve Jobs had been more than instrumental in developing Apple’s envied corporate culture. Employees typically worked 60 to 70 hours a week, and no one complained.

Apple has been thought of as putting Silicon Valley on the map with its hard-working but relaxed, casual atmosphere.³⁴ This characterization would be an impossible contradiction in most other corporations in the United States, but not at Apple. When Jobs returned to Apple in 1997, he became famous for his standard black turtleneck and jeans uniform, walking around the campus with, or sometimes without, his sneakers. Jobs even went barefoot to a 1999 meeting to settle a patent dispute with executives from Microsoft.³⁵ Jobs was the ultimate example of an “I’m-a-genius-and-I-don’t-care” attitude. Apple employees embraced their hero and became convinced that, with confidence and creativity, they too could become rich and leave a legacy—sans suit or shoes.

Apple’s rebel spirit not only attracted a long-lasting appreciation from loyal employees but also created an almost cult-like following among customers who appreciated Apple’s propensity to think differently. Millions of people wanted to be seen as unique individuals, and hence, millions of people bought Apple products. The “Cult of Apple” was a group of rumored fanatical followers devoted to all things Apple, but “while there are many customers who eat, think, and breathe Apple, members of the Cult of Apple take their devotion one step further and *believe* in Apple.”³⁶ The result was that Apple had a conspicuous horde-like following walking down the streets of every major city in the world with the signature white ear buds of Apple products attached to their heads. Apple products became so trendy that other companies had to design their consumer electronics like Apple’s to have a hope of selling. The loyalty of Apple customers has served the company well, and now it is not just the die-hard fanatics who believe. Even people in the mainstream were becoming Apple converts.

Innovation at Apple

The one competency that kept Apple on the cutting edge, all the way from startup to survival to success—and finally to profitability and industry envy—has been innovation. “Innovation distinguishes between a leader and a follower,” Jobs repeatedly said.³⁷ Jobs believed that innovation is a process that can be cultivated and managed within an organization. It begins with idea generation, and then moves to idea adoption and development, and finally to idea implementation. All the while, the innovation process is being enabled by effective leadership and a supportive organizational culture.

Steve Jobs firmly believed that Apple could create major innovation breakthroughs that would reshape future industries. Jobs’ attitude toward innovation as key to a successful strategy and competitive advantage was revealed in an interview that UCLA professor Richard Rumelt conducted shortly after Jobs returned to Apple in 1998:

“I was interested in what Steve Jobs might say about the future of Apple. His survival strategy for Apple, for all its skill and drama, was not going to propel Apple into the future. At that moment in time, Apple had less than 4 percent of the personal computer market. The de facto standard was Windows-Intel and there seemed to be no way for Apple to do more than just hang on to a tiny niche. I said, ‘Steve, this turnaround at Apple has been impressive. But everything we know about the PC business says that Apple cannot really push beyond a small niche position. The network effects are just too strong to upset the Wintel standard. So what are you going to do in the longer term? What is your strategy?’

“[Steve Jobs] did not attack my argument. He didn’t agree with it either. He just smiled and said, ‘I’m going to wait for the next big thing.’”³⁸

Apple's top management was also critical in the effort to nurture an innovative organization because employees needed to know that they would not be reprimanded for making risky choices when attempting a creative project. A high tolerance for failure and calculated risk-taking is necessary for employees to feel comfortable bringing up new ideas in any organization.³⁹ Apple's work force appeared to have embraced this attitude fully, as they proudly "[said] NO to 1,000 things."⁴⁰

Compared to its competitors, Apple spent a mere 2.24 percent of revenues on research and development (R&D) for a grand total of \$2.4 billion in 2011 (Exhibit 7). In contrast, Microsoft spent about 12.93 percent of annual revenues on R&D, equating to a whopping budget of \$9.0 billion. Google similarly spent over 13.62 percent of annual revenues on R&D, for a total expenditure of \$5.1 billion. Comparing the amount of money spent at Apple with that of other technology giants shows how effectively Apple's innovation process works, making possible a significant return on R&D investment. In fact, Jobs was known to say: "Innovation has nothing to do with how many R&D dollars you have. When Apple came up with the Mac, IBM was spending at least 100 times more on R&D. It's not about money. It's about the people you have, how you're led, and how much you 'get it.'"⁴¹

Recently, Apple is spending more on R&D; it spent \$3.38 billion on R&D in 2012 and several billion the first few months in 2013.⁴² Although Apple has not made any new product introductions in the recent past, this increase in spending could be indicative of attempts to launch category-defining products and services such as those for television or smart-watches in the near future.

The iPod/iPhone/iPad Revolution and Apple TV

THE IPOD

The big bang happened at Apple in October 2001 with the launch of the iPod, a portable digital music player based on the MP3 music format. The sleek design and smart graphical user interface bewitched consumers. The product was an instant hit, selling over 100 million units within six years.⁴³ The profitability of the iPod was phenomenal, with margins estimated as high as 47.4 percent before freight, marketing, and other costs.⁴⁴

In April 2003, Apple provided iTunes as a complement for the iPod. iTunes was the first online store from which customers could buy songs individually at 99 cents each, rather than purchasing entire albums for upward of \$15 to \$20 or downloading songs illegally. Within three days of launch, iTunes users had downloaded one million songs. By June 2008, iTunes had exceeded five billion downloads.⁴⁵ On February 25, 2010, which was coincidentally Steve Jobs' 55th birthday, Apple achieved the great milestone of 10 billion iTunes downloaded. Apple had seemingly effortlessly established itself as the newest icon of the digital age, revolutionizing the music industry and holding fast to its leadership position in the technology race.

In keeping with its iconoclastic reputation, Apple promoted its iPod as a stylish alternative to archetypal music technology products with the new "iPod People" campaign. Ads featured several silhouetted people with white headphones in their ears dancing against a colorful background. Apple advertising had always been creative by design, but its "iPod People" promotion brought in an unmistakable "coolness-factor" as the essence of the product. That desired attribute was directly transferred to the customer upon purchase.

THE IPHONE

In June 2007, Apple launched the iPhone, and soon Apple's share price passed the \$100 mark.⁴⁶ The iPhone was a multifunction smartphone that provided the customer with a unique touch-based interface and a revolutionary operating system delivering a computer-based experience. According to Jobs, the iPhone was "the Internet in your pocket."⁴⁷ Apple partnered with AT&T to bring this device to the market and make it affordable for consumers. AT&T was happy to subsidize the phones, as long as it could ride the Apple wave of "coolness" and innovation.

One year later, Apple launched the iPhone 3G, which was advertised as twice as fast at half the price. The iPhone 3G supported all Microsoft document formats and had full support for a Microsoft Exchange server. Apple sold a record six million 3G iPhones in the first year, giving birth to a whole new generation of smartphones. In the summer of 2010, Apple released the iPhone 4 with two built-in cameras and higher resolutions. In that same year, Apple had captured 17.4 percent of the smartphone market, with 82 percent sales growth since 2008. It had taken only two years for Apple to jump to second place behind Nokia, with 32.7 percent market share. BlackBerry was third with 15.3 percent.⁴⁸ The iPhone 4S, an update to the iPhone 4 with a voice assistant known as “Siri,” was released in October of 2011. The iPhone 5, which had a larger screen and was the first 4G iPhone, was released in September of 2012.

THE IPAD

On January 25, 2010, Jobs took his biggest gamble yet with the announcement of the iPad, a multimedia, tablet-style computer designed to take the place of a pencil and pad of paper.⁴⁹ (See Exhibit 8 for a historical timeline of Apple’s product introductions and net income.) During Jobs’ keynote address introducing the iPad two days later, he praised his new invention as the “best browsing experience you’ve ever had. You can see the whole page—it’s phenomenal! It’s an incredible experience.”⁵⁰ Investors apparently shared Jobs’ excitement, as Apple’s stock price rose 15 percent after the iPad was unveiled.⁵¹

However, the idea of a keyboard-free, touchscreen portable computer tablet had been around for more than two decades. Apple had even launched its own Newton MessagePad in 1993, which became known less for its pioneering features and more for being ridiculed in “Doonesbury” for the software’s problem in recognizing handwriting.⁵² Upon returning to Apple in 1997, Jobs withdrew the Newton, which had become a commercial failure and a public relations embarrassment. Competitors learned from Apple’s Newton debacle and started to introduce improved products at a lower price, including Palm’s Pilot, Handspring’s Visor, and BlackBerry. Meanwhile, Jobs continuously scrapped all of Apple’s new tablet prototypes for over a decade, because they reportedly “weren’t good for anything except browsing the Web from the bathroom.”⁵³

Apple had come a long way since the Newton, as evidenced by the fact that its iPad was the most highly anticipated gadget of 2010.⁵⁴ Jobs in his keynote address stated that “the iPad is our most advanced technology in a magical and revolutionary device at an unbelievable price.”⁵² The iPad was half an inch thick, weighed 1.5 pounds, and had a 9.7-inch “gorgeous, super-high quality display” and was “multi-touch, super-responsive, and super-precise.”⁵⁶ It had Wi-Fi wireless connectivity and availability to e-mail, photos, video, music, games, and e-books, and was capable of browsing the web. It operated much like the smaller iPhone and could run all 140,000 existing apps designed for the iPhone. Additionally, the iPad incorporated features like a calendar, photo manager, spreadsheets, and presentations to take on a more multimedia look.⁵⁷

Given initial rumors that the iPad would cost anywhere from \$700 to \$1,000, customers were pleasantly surprised when it debuted at prices ranging from \$499 up to \$829. Many Apple fans remembered when Jobs famously spouted his disdain for the growing development of the notebook market: “We don’t know how to make a \$500 computer that’s not a piece of junk.”⁵⁸ However, customers had to pay an extra \$30 a month to AT&T for the same always-on Internet access that the Kindle provided,⁵⁹ with an option to renew their subscription on a monthly basis. This arrangement represented a significant departure from the wireless industry’s traditional carrier-centered model, allowing Apple to extract more value while carriers bore more of the cost.

Despite pent-up demand, it was estimated that the iPad would cannibalize the market for other Apple products, including the iPhone, iPod, and Mac notebooks, by around 10 percent.⁶⁰ To overcome this potential threat, Jobs would have to convince customers that they needed another gadget, in addition to their laptops and smartphones. Jobs believed there was room for a third category between the laptop and smartphone, but acknowledged that “it must do things far better than both existing devices.” Jobs argued that if the iPad could not do some tasks better than laptops or smartphones, it was unnecessary.⁶¹

Yet critics pointed out that, unlike the iPhone, the iPad lacked a built-in camera for taking photos. It also lacked the ability to play Flash-based content on websites, which accounted for 75 percent of video on the web, and it could run only one app on the screen at a time. While Jobs hailed the iPad as “a dream to type on,”⁶² for many it was not as easy as a typical keyboard with tactile keys to feel. This caused many customers to express disappointment with the iPad as doing less than the iPhone, but on a bigger screen.⁶³ In March 2011, Steve Jobs, in typical showman fashion, unveiled the iPad2, a thinner and sleeker but higher-performing version of the original iPad. The iPad2 also contained two cameras to facilitate online video chat.⁶⁴

With the introduction of the iPad, Steve Jobs defined Apple as a mobile-devices company, competing against Sony, Samsung, and Nokia.⁶⁵ At the same time, Apple faced direct competition from other computer manufacturers, who were quick to jump on the iPad bandwagon, hoping to undercut Apple’s price to gain market share. For example, Hewlett-Packard announced its own keyboardless computer called the “Slate,” and Dell, Acer, and Sony were all refining their own versions of the tablet. In addition, the iPad was likely to face competition from the new mini-laptops or “netbooks” being offered by Apple’s competitors for around \$100.⁶⁶ These devices could perform all of the necessary functions needed for most personal, academic, and even professional needs. Nevertheless, Jobs did not appear to be too concerned: “The problem is netbooks aren’t better at anything—they are just cheaper.”⁶⁷

APPLE TV

In March 2007, Steve Jobs introduced the first-generation Apple TV to the world, having referred to it more as a “hobby” than a mainstream product. The first-generation model was a box that connected to a user’s television set. It allowed the user to sync and then play his or her downloaded content from the iTunes store. The content could be rewound or fast-forwarded, making the Apple TV the equivalent of the modern-day satellite or cable DVR.

The newest generation of the Apple TV provides users with more flexibility. It allows them to view content from their iPhone, iPad, or iPod. Additionally, users can watch movies, play music, show off their videos and photos, and even mirror what’s on their device’s screen to enjoy games, web pages, and more. Ultimately, Apple TV allows users to access all of the benefits of their complementary Apple products from their living rooms. The latest generation model retails for \$99.

The evolved product was expected to have a major impact on the market in time for the 2012 holiday shopping season. However, the complexity of dealing and integrating with established broadcast cable providers and hardware design and supply issues held back the new Apple TV. Even with these holdups, Apple continues to have an “intense interest” in television, and the company continues to test high-definition TVs and possible partnerships with cable companies.

Revolutionizing the Publishing Industry?

Because the iPad allowed users to read books, newspapers, and magazines, Jobs predicted that it would reshape the publishing business much the way his iPod revolutionized the music industry.⁶⁸ Technophiles envisioned that the iPad would “save the newspaper and book publishing industries, present another way to watch television and movies, play video games, and offer a visually rich way to enjoy the web and the expanding world of mobile applications.”⁶⁹

Many believed that the iPad represented the next technological innovation to replace Amazon’s Kindle and Sony’s Reader. Jobs described how Apple would take over Amazon’s e-book market saying: “We’re going to stand on its shoulders and go a bit further.”⁷⁰ He started by announcing a new online store for electronic books called iBookstore, along with new partnerships with major book publishers including the Hachette Book Group, Macmillan, Penguin Group, HarperCollins, Simon & Schuster, and McGraw-Hill to provide e-book content for the iPad. The only publisher that did not sign on with the iPad was Random House. One reason it held out is that publishers and authors would make lower revenues and royalties per book sold.

With few exceptions, the publishing industry was enthusiastic to tap into a market of 125 million Apple customers. “It is never wise to stand between a consumer and a preference for how they get their content,” said John Makinson, CEO of Penguin.⁷¹ Moreover, publishers detested Amazon’s pricing model, which charged Kindle customers a standard \$9.99 for each e-book, causing publishers to lose about \$5 for each e-book sold. In contrast, the iBookstore set the maximum e-book price at the cost of printing the book, so publishers were able to charge anywhere from \$12.99 to \$14.99 for most titles. Apple retained 30 percent of the sale price and returned the remaining 70 percent to the publishers. What publishers liked about the iPad deal was that they (and not Apple) got to determine the prices of e-content for end consumers. In addition, this deal gave publishers leverage to negotiate higher prices for their content with Amazon. It was even possible that publishers would withhold titles from Amazon if they did not agree to raise their prices. As a result, the competition between Apple and Amazon “is as intense a situation as the industry has ever had. . . . It’s a huge chess match.”⁷²

In April of 2012, the U.S. Department of Justice brought a lawsuit against the publishers and Apple. The Department of Justice alleges that the publishers conspired to fix prices by joining together to force Amazon into the same agency business model that Apple offered to the publishers. In the pricing model, Apple gets 30 percent of each book sale through its iBookstore and the publisher retains 70 percent. By forcing Amazon into the same model, Amazon would no longer be able to offer books at the \$9.99 price point that the publishers did not want consumers to expect as the price of a new release. Three publishers settled with the Department of Justice but Apple has not.⁷³ If found guilty of collusion, Apple could be required to change its e-book business model.

Current Competitors

Apple’s exceptional performance, brand loyalty, and innovation capabilities would make any CEO envious. Also, as the industry continues to evolve, the lines between hardware, software, and search engines have blurred as each company vies for market share and dominance. The following companies pose the biggest threat to Apple and consistently seek opportunities to take market share away from the industry giant. (See Exhibits 9, 10, and 11 for comparisons of Apple’s stock performance versus these companies.)

AMAZON.COM

Amazon competes directly against Apple in the sale of electronic media such as music, videos, and books. Amazon also runs an Android app store and is one of the leading providers of cloud computing services.

Founded in 1994 by Jeffrey Bezos as an online book retailer, Amazon’s sales grew from \$20,000 in 1995 to over \$61 billion in 2012 (Exhibit 12).⁷⁴ After the company went public in 1997, it rapidly diversified into multiple product areas, undercutting existing specialty and brick-and-mortar retailers in price.⁷⁵ In 1998, Amazon launched its online music and video store and began to sell toys as well as consumer electronics; it added clothing in 2002. More recently, Amazon has engaged in a series of acquisitions to further expand the breadth of products offered. The firm acquired the No. 1 online shoe retailer, Zappos, for \$890 million in 2009. In 2010, Amazon added both Woot, a social shopping e-commerce site, and Quidsi, the owner of Diapers.com and Soap.com, to its portfolio. By 2012, Amazon employed 51,300 people all over the world and had climbed to No. 56 in the Fortune 500.⁷⁶

The Kindle Fire tablet product line is seen as a direct competitor to the iPad. In January 2013, the Kindle Fire accounted for 7.78 percent of web traffic from tablet computers in North America compared to the iPad’s 81 percent.⁷⁷ The Kindle Fire runs Google’s Android operating system and the Kindle Fire HD was announced in September 2012 and comes in two different sizes: 7” and 8.9.”

Amazon has long been rumored to be working toward introducing a smartphone into the market. It has been testing phones with Asian suppliers, and the device would most likely be built using the company’s experience with its Kindle Fire tablet product line, which competes against the iPad. The company also has more than 60,000

Apple (in 2013): How to Sustain a Competitive Advantage?

apps running on Google's Android software, so a smartphone would appear to be the next logical step in its innovation process. The device could have a large impact on both Apple and Samsung's smartphone market share.

BLACKBERRY

Research in Motion (RIM) was founded in 1984 by University of Waterloo engineering student Mike Lazaridis and University of Windsor engineering student Douglas Fregin. In 2002, the company revolutionized the cellular phone market with its first data and voice product, the BlackBerry 5810. The company won numerous design and innovation awards and entered into partnerships with all of the major phone carriers. By 2005, it had over 5 million subscribers and continued to upgrade and release various new models around the world.⁷⁸

In 2009, *Fortune* named RIM the world's fastest-growing company; its profits grew at an astonishing rate of 84 percent (Exhibit 13). But in 2012, RIM experienced a 90 percent drop in its stock price due to dismal sales and market share numbers. It was the culmination of a decline that began in 2007—the year Apple launched the iPhone. Unlike the BlackBerry, which targeted a smaller contingent of enterprise clients, the iPhone catered to the everyday user, putting RIM at a distinct competitive disadvantage. Also, RIM resisted the use of apps, touchscreen technology, and full access to the Internet that competitors like Apple offered as standard on their smartphones.⁷⁹

In 2013, RIM changed its name to BlackBerry to signal a new start. Though struggling to compete with Apple and the Android phone manufacturers, BlackBerry launched a new operating system and two new phones in January of 2013.

FACEBOOK

In 2004, 19-year-old Mark Zuckerberg and three college pals founded Facebook in a dorm room at Harvard. What began as a hobby to let Ivy Leaguers socialize online has become the world's largest social networking site, with more than one billion users and revenues of over \$4.5 billion in 2012 (Exhibit 14).⁸⁰

Facebook continues to move toward a more mobile-centered business model and has developed applications and advertising specifically for these types of devices. In April of 2013, Facebook and HTC unveiled the HTC First, which is the first phone designed specifically for the Facebook Home Android application.⁸¹ Many wonder if Facebook will ever launch its own phone and operating system.

GOOGLE

In 1998, 24-year-old Sergey Brin and 25-year-old Larry Page founded Google. They met as graduate students in the computer science department at Stanford University where they began working together on a web crawler, with the goal of improving online searches. What they developed was the PageRank algorithm, which returns the most relevant web pages more or less instantaneously and ranks them by how often they are referenced on other important web pages. A clear improvement over early search engines such as AltaVista, Overture, and Yahoo, all of which indexed by keywords, the PageRank algorithm is able to consider 500 million variables and three billion terms. What started as a homework assignment launched the two into an entrepreneurial venture when they set up shop in a garage in Menlo Park, California. Today, Google is the world's leading online search and advertising company, with some 70 percent market share of an industry estimated to be worth more than \$25 billion a year, and growing quickly. (See Exhibit 15 for Google's financials.)

Google's current operating system, Android, is used exclusively by Samsung Electronics, a Korean electronics maker, in all of its smartphone devices. As an alternative to the iPhone, Android phones created by Samsung, HTC, and others have rapidly stolen market share from Apple and BlackBerry. Samsung especially has been able to create phones running Android that are viable alternatives to the iPhone. In a move into the hardware space, Google acquired Motorola Mobility in 2011 and plans to release its own phones and tablets running Android.

Google would have more control over the hardware and ideally be able to optimize the hardware for future Android features. By controlling the software on mobile devices, Google plans to also control the ads shown to users, thus extending its hold on the digital ads market, its main source of revenue. Android is run on 79 percent of all smartphones.⁸²

Google's Chromebook is a line of laptop computers running Google's Chrome operating system. The Chrome OS is designed to provide the user with the minimal amount of hardware and installed applications needed. The user runs applications from the cloud and uses Google's Chrome browser to access these applications. Several manufacturers such as Samsung, Acer, and HP are partnering with Google to create Chromebooks.

Google is also looking to develop more web-connected services for people's homes, powered by the Android operating system. In addition, Google is trying to enter the high-speed Internet market so it can deliver its products to customers without having to worry about poor connection speeds or being blocked by competitors. It began wiring homes in Kansas City, both the Missouri and Kansas sides, in 2012, with plans to expand to other locations around the U.S. in 2013.⁸³ Google is also attempting to hold off both Facebook and Amazon by enabling retailers to reach consumers through its search engine exclusively.

MICROSOFT

The partnership that Paul Allen and Bill Gates formed in 1975 started out small, but Gates and Allen had a vision to one day put a computer in everyone's home. During the next several decades, their company, Microsoft, revolutionized the way people work and play on their computers.⁸⁴

In the 1990s and early 2000s, Microsoft dominated the technology market with its Windows operating system. As it watched the likes of BlackBerry and Apple post substantial profit numbers, it decided to enter the smartphone market and introduced the first Windows phone in late 2010, and then a second model in 2012.

In early 2011, Microsoft announced that it was entering into a partnership with Nokia. Under the agreement, Nokia agreed to use the Windows phone as its primary smartphone and to leverage its strengths in imaging, design, and pricing structure to drive growth for both companies. Nokia's CEO, Stephen Elop, boldly stated that the smartphone market was now a "three-horse race" among itself, Apple, and Samsung.⁸⁵

Microsoft has its own tablet PC to compete with the iPad. The Microsoft Surface was released in October of 2012 with a large campaign to compare it to the iPad. The Surface has an attachable keyboard/cover, a USB port, and runs the Windows 8 operating system.

Like Apple, Microsoft has also opened its own stores to sell Microsoft products and third-party products that run Microsoft's software. (See Exhibit 16 for Microsoft's financials.)

NOKIA

In 1922, three companies spanning five industries—rubber, cable, forestry, electronics, and power generation—officially merged to become the Nokia corporation. By 1998, the company had become the global leader in mobile phones and posted sales of over €30 billion. In 2005, the company sold its billionth phone, but by 2010 it was struggling to compete against more popular Samsung and Apple products.⁸⁶

In early 2011, Nokia announced that it was entering into a partnership with Microsoft to try to become a top competitor in the smartphone market. Later that same year, it launched two models of the Nokia Lumia phone, both of which run Windows phone software. In September of 2012, the latest model, the Nokia Lumia 920, was launched to dismal reviews, with most tech savvy people stating that there was no reason for current Android or iPhone customers to switch. The company's stock price continued to fall, dropping to \$2.50 a share after the new model introduction.⁸⁷ (See Exhibit 17.)

SAMSUNG

On March 1, 1938, Byung-Chull Lee started Samsung, which means *three stars* in Korean, as a small export business focusing primarily on fish, vegetables, and fruit. Within a little over 10 years, Samsung would have its own manufacturing and sales operations. Today, the technology giant sells products around the globe and is instantly recognized for its innovative, consumer-driven products.⁸⁸ (See Exhibit 18 for Samsung's financials.)

By 2012, Samsung Electronics had become the global smartphone market leader, due mostly to its extremely successful Galaxy S device and subsequent versions, which run on Google's Android operating system. The phone is comparable in both design and technical features to the iPhone and poses the biggest competitive threat to Apple. It is estimated that Samsung holds a 28 percent share of the smartphone market, up from 20 percent in 2011. It is the global leader in smartphone sales. Meanwhile, Apple's share was 20.5 percent in 2012, up from 19 percent in 2011.⁸⁹ Together, Samsung and Google have been able to act as complementors to provide a product comparable in quality and experience to the iPhone. With Samsung's manufacturing and hardware expertise and Google's software and user experience expertise, Apple faces potentially its strongest competitor.

One of the main drivers of Samsung's rise has been its two-pronged pricing structure. Its premium products are priced similarly to Apple's in the U.S., but the company also heavily discounts the prices of some phones, sometimes to less than a quarter of the suggested retail price. Additionally, Samsung manufactures all of its own smartphones, including the components, which gives it a distinct cost advantage over its closest competitors. Even Apple uses Samsung to manufacture a portion of its iPhone product line. Meanwhile, for the low-end and emerging smartphone markets, Samsung provides products that compete directly with Microsoft's Windows phone.

The intense competition between Apple and Samsung has led to many legal battles, mostly over patent infringement. In August 2012, a U.S. federal court ruled in favor of Apple in one such case, awarding it more than \$1 billion in damages (later reduced to some \$500 million). Separate infringement cases are pending in various other countries around the world pertaining to the design and technology of both companies' devices.

Challenges Ahead

Apple has created a competitive advantage through its differentiated products, brand loyalty, and seamlessly integrated devices. However, Tim Cook knows the competition is constantly looking at new ways to take market share away from the company. How should he respond to the constant pressure? And where is Apple's future growth going to come from? A new, less expensive iPhone? The next generation iPad? Or another revolutionary product such as WebTV or smartwatches? Other category-defining products and services?

There are also emerging economies, such as China and Brazil, to consider. Sales to these countries could make any company an industry leader with the key advantages they offer: large populations, growing disposable incomes, and low cost of living. How should Apple compete in these markets? Should it stay with its differentiated, premium-price strategy around the world? Or should it let low-price, low-margin products from other competitors battle it out in these areas?

Tim Cook not only has some enormous strategic decisions to make in the short term but also needs to decide where and how Apple should compete in the long term. Given the blurring industry boundaries that allow capable competitors to put pressure on Apple, Cook needs to carefully plan the company's next moves if he wants to sustain Apple's competitive advantage. As his MacBook Pro boots up, Cook pops open a can of low-carb Monster Energy drink and begins to jot down some of his thoughts.

EXHIBIT 1 Apple's Daily Market Cap since December 2011



Source: Author's depiction of publicly available data drawn from Bloomberg.

EXHIBIT 2A Apple's Regional Sales, 2008–2012 (in \$ millions)

Net Sales by Operating Segment	2008	2009	2010	2011	2012
Americas net sales	16,447	18,981	24,498	38,315	57,512
Europe net sales	9,233	11,810	18,692	27,778	36,323
Japan net sales	1,728	2,279	3,981	5,437	10,571
Asia-Pacific net sales	2,791	3,179	8,256	22,592	33,274
Retail net sales	7,292	6,656	9,798	14,127	18,828
Total net sales	37,491	42,905	65,225	108,249	156,508

Note: Other segments include Asia Pacific and FileMaker.

Source: Apple Annual Reports 2008–2012.

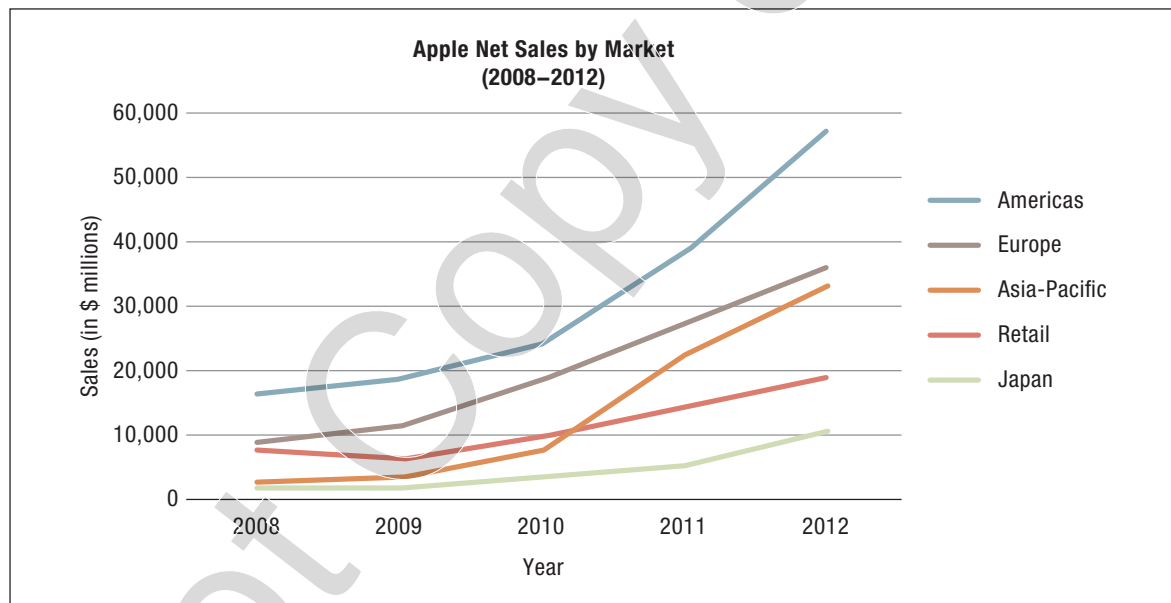


EXHIBIT 2B Net Sales by Product, 2008–2012 (in \$ millions)

Net Sales by Product	2008	2009	2010	2011	2012
Desktops ^a	5,622	4,324	6,201	6,439	6,040
Portables ^b	8,732	9,535	11,278	15,344	17,181
Total Mac net sales	14,354	13,859	17,479	21,783	23,221
iPod	9,153	8,091	8,274	7,453	5,615
Other music-related products and services ^c	3,340	4,036	4,948	6,314	8,534
iPhone and services ^d	6,742	13,033	25,179	47,057	80,477
iPad and related products ^e			4,958	20,358	32,424
Peripherals and hardware ^f	1,694	1,475	1,814	2,330	2,778
Software and service sales ^g	2,208	2,411	2,573	2,954	3,459
Total net sales	37,491	42,905	65,225	108,249	156,508

^a Includes iMac, Mac mini, and Mac Pro product lines (2008–2010 numbers also include Power Mac and Xserve product lines).

^b Includes MacBook, iBook, MacBook Air, MacBook Pro, and PowerBook product lines.

^c Includes sales from iTunes Store, App Store, and iBookstore, as well as sales of iPod services and Apple-branded and third-party iPod accessories.

^d Includes revenue recognized from iPhone sales, carrier agreements, services, and Apple-branded and third-party iPhone accessories.

^e Includes revenue recognized from iPad sales, services, and Apple-branded and third-party iPad accessories.

^f Includes sales of displays, wireless connectivity and networking solutions, and other hardware accessories.

^g Includes sales of Apple-branded operating system and application software, third-party software, and Mac and Internet services.

Source: Apple Annual Reports 2008–2012.

EXHIBIT 2C Unit Sales by Product, 2008–2012 (in millions, except sales-per-unit-sold data)

Unit Sales by Product	2008	2009	2010	2011	2012
Desktops ^a	3,712	3,182	4,627	4,669	4,656
Portables ^b	6,003	7,214	9,035	12,066	13,502
Total Mac unit sales	9,715	10,396	13,662	16,735	18,158
Net sales per Mac unit sold ^c	\$1,478	\$1,333	\$1,279	\$1,301	\$1,278
iPod units sold	54,828	54,132	50,312	46,620	35,165
Net sales per iPod unit sold ^c	\$167	\$149	\$164	\$174	\$159
iPhone units sold	11,627	20,731	39,989	32,394	58,310

^a Includes iMac, Mac mini, and Mac Pro product lines (2008–2010 numbers also include Power Mac and Xserve product lines).

^b Includes MacBook, iBook, MacBook Air, MacBook Pro, and PowerBook product lines.

^c Derived by dividing total product-related net sales by total product-related unit sales.

Source: Apple Annual Reports 2008–2012.

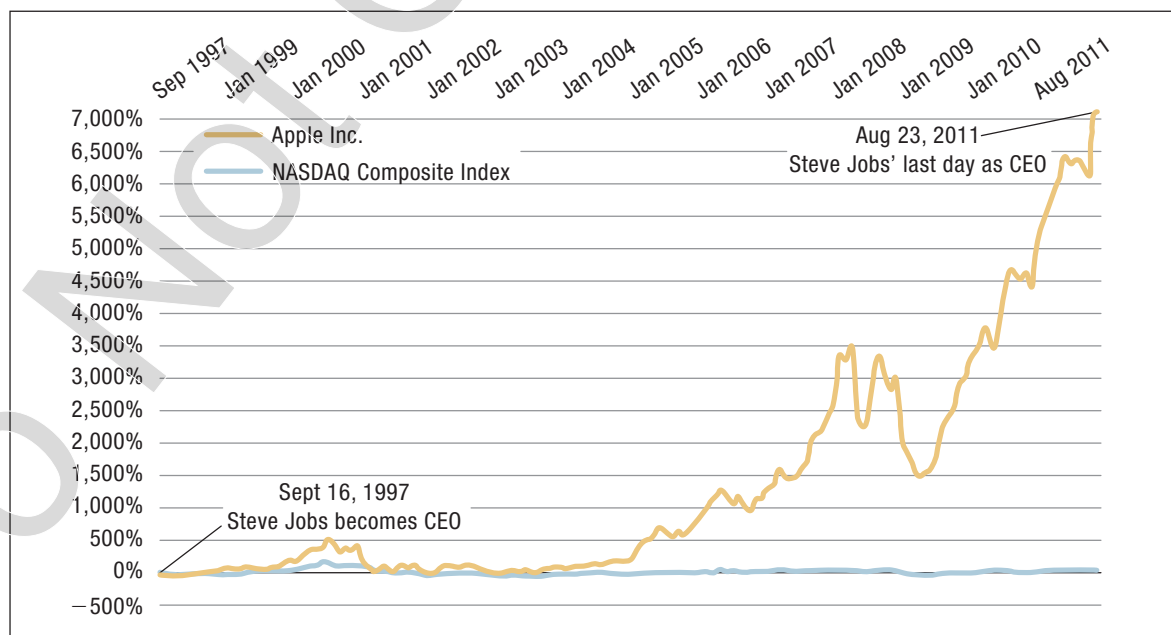
Apple (in 2013): How to Sustain a Competitive Advantage?

EXHIBIT 3 Apple Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	24,490	23,464	25,620	25,952	29,129
Receivables–total	4,704	5,057	9,924	11,717	18,692
Inventories–total	509	455	1,051	776	791
Property, plant, and equipment–total (net)	2,455	2,954	4,768	7,777	15,452
Depreciation, depletion, and amortization (accumulated)	1,292	1,713	2,466	3,991	6,435
Assets–total	39,572	47,501	75,183	116,371	176,064
Accounts payable–trade	5,520	5,601	12,015	14,632	21,175
Long-term debt	0	0	0	0	0
Liabilities–total	18,542	15,861	27,392	39,756	57,854
Stockholders' equity–total	21,030	31,640	47,791	76,615	118,210
Sales (net)	32,479	42,905	65,225	108,249	156,508
Cost of goods sold	20,898	24,999	38,609	62,609	84,641
Selling, general, and administrative expense	4,870	5,482	7,299	10,028	13,421
Income taxes	2,061	3,831	4,527	8,283	14,030
Income before extraordinary items	4,834	8,235	14,013	25,922	41,733
Net income (loss)	4,834	8,235	14,013	25,922	41,733
Earnings per share (basic) excluding extraordinary items	5.48	9.22	15.41	28.05	44.64
Earnings per share (diluted) excluding extraordinary items	5.36	9.08	15.15	27.68	44.15

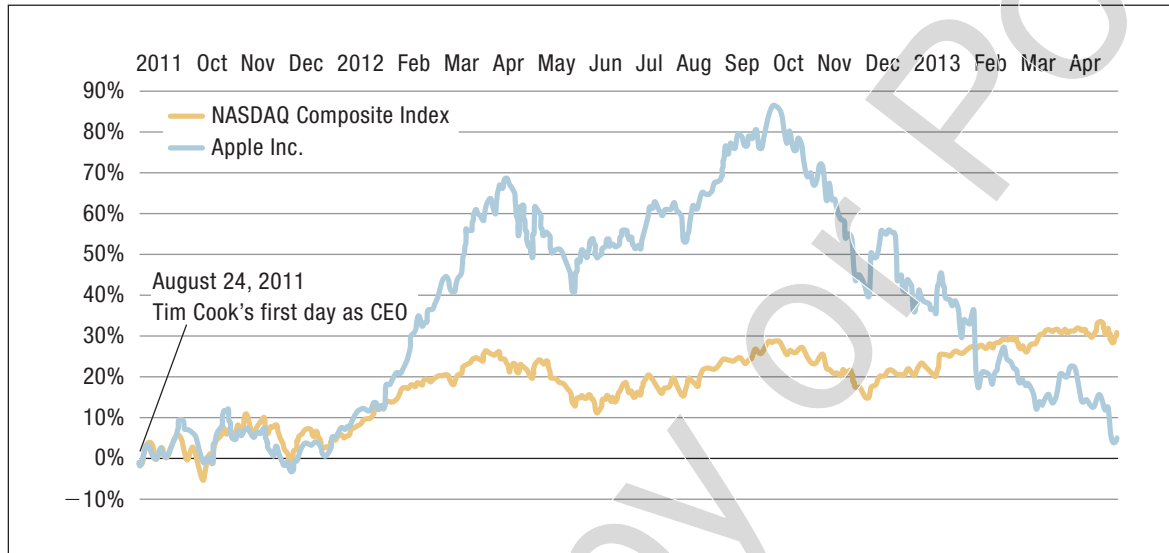
Source: Compustat.

EXHIBIT 4 Apple's Stock Price and NASDAQ, September 1984–August 2011



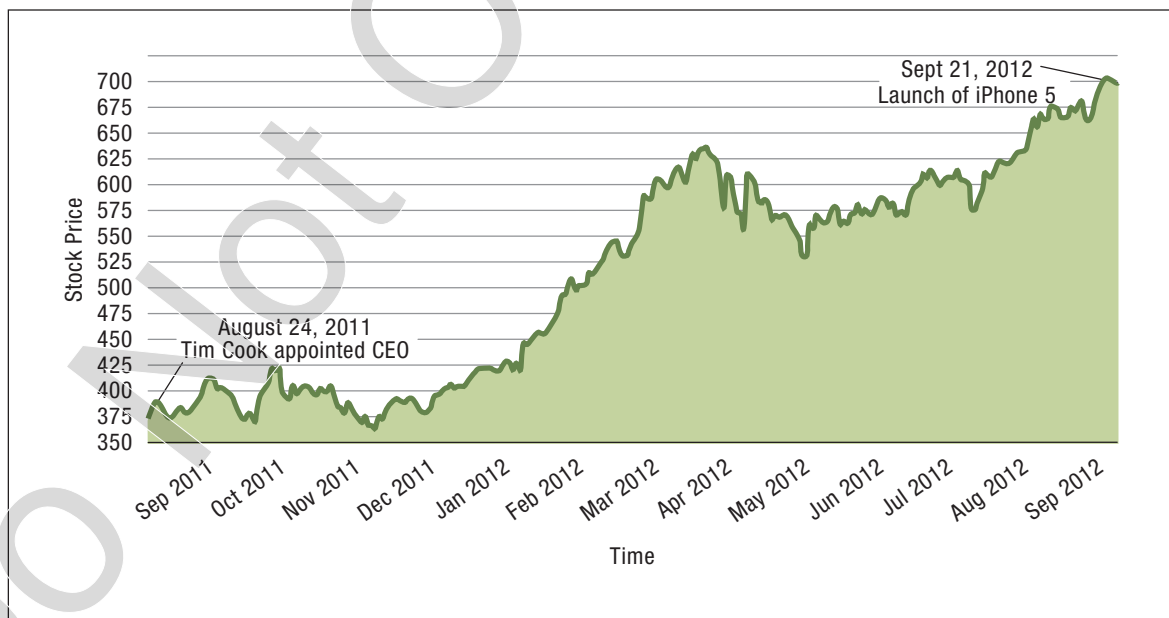
Source: Author's depiction of publicly available data drawn from Yahoo.

EXHIBIT 5 Apple's Stock Price and NASDAQ, August 2011–April 2013



Source: Author's depiction of publicly available data drawn from Yahoo.

EXHIBIT 6 Apple's Stock Price, August 2011–September 2012



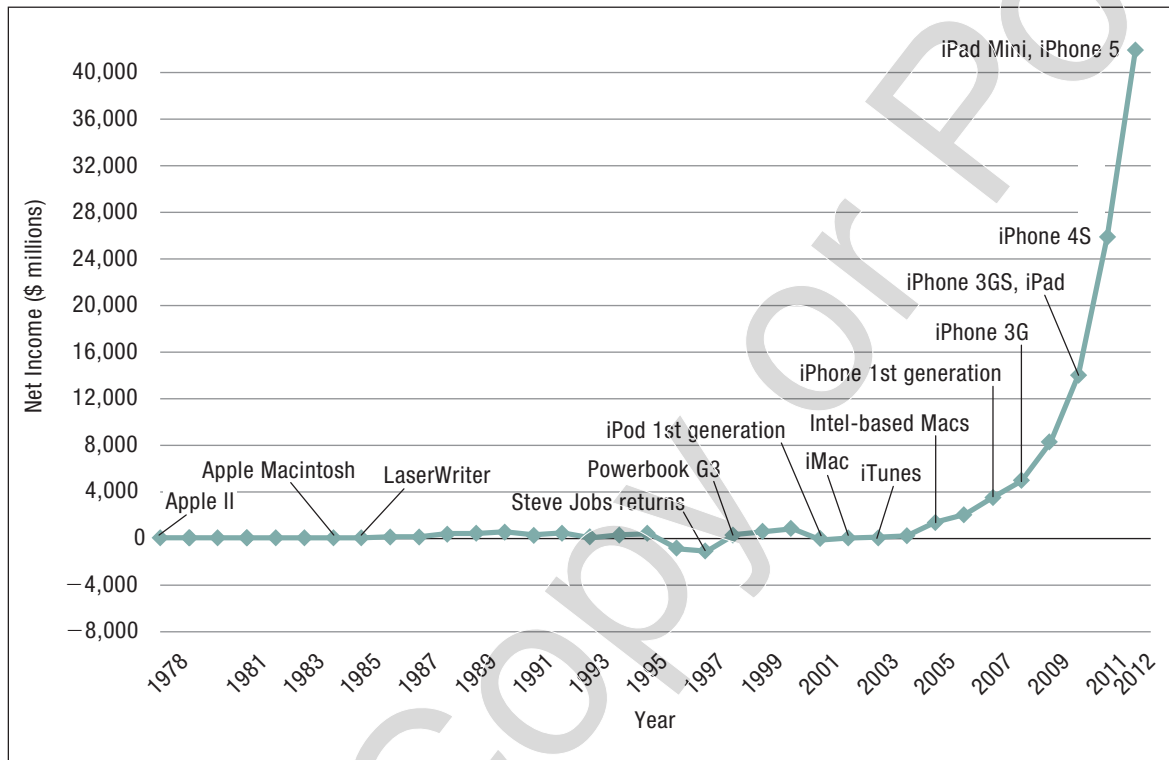
Source: Author's depiction of publicly available data drawn from MSN Money.

EXHIBIT 7 R&D Spending at Selected Tech Companies, 2011 (in thousands)

Rank	Company	R&D, Most Recent	
		Four Quarters	Selected % of Revenue
1	Microsoft	\$9,043,000	12.93
2	Intel	8,350,000	15.46
3	IBM	6,258,000	5.85
4	Cisco	5,823,000	13.47
5	Google	5,162,000	13.62
6	Oracle	4,519,000	12.69
7	Hewlett-Packard	3,254,000	2.56
8	Apple	2,429,000	2.24
9	SAP	2,320,000	13.87
10	EMC	2,149,000	10.74
11	Advanced Micro Devices	1,453,000	22.12
12	BlackBerry	1,351,000	6.79
13	Yahoo	919,000	18.44
14	Seagate	875,000	7.98
15	Symantec	862,000	13.93

Source: Adapted from Robert Herzberg, "Top 50 Technology R&D Spenders," *CIO Zone*, <http://bit.ly/gD0pRS>.

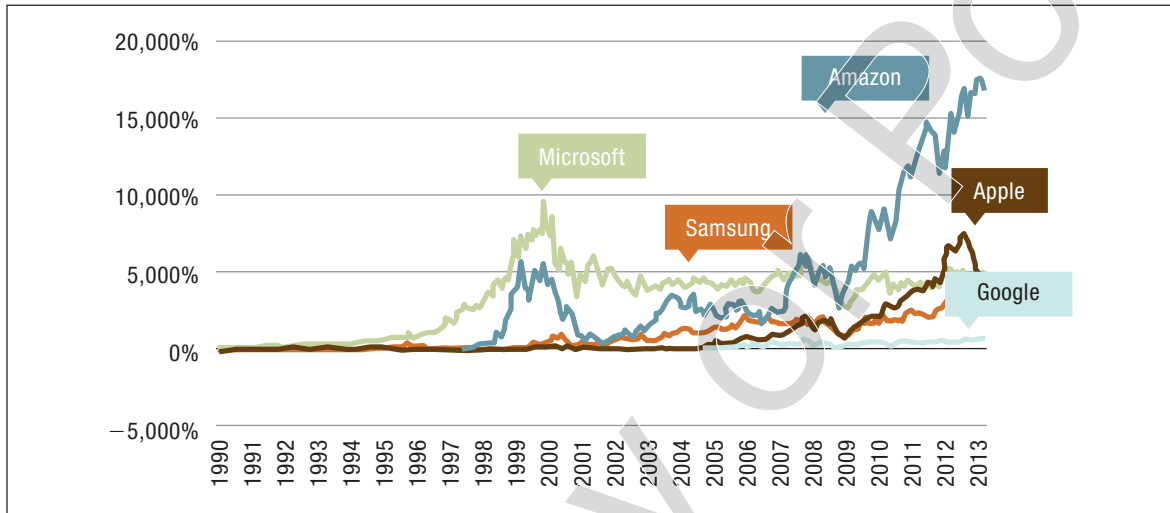
EXHIBIT 8 Apple's Net Income (\$ millions) and Key Events over Time, 1981–2012



Source: Author's depiction of publicly available data drawn from Compustat and various Apple annual reports.

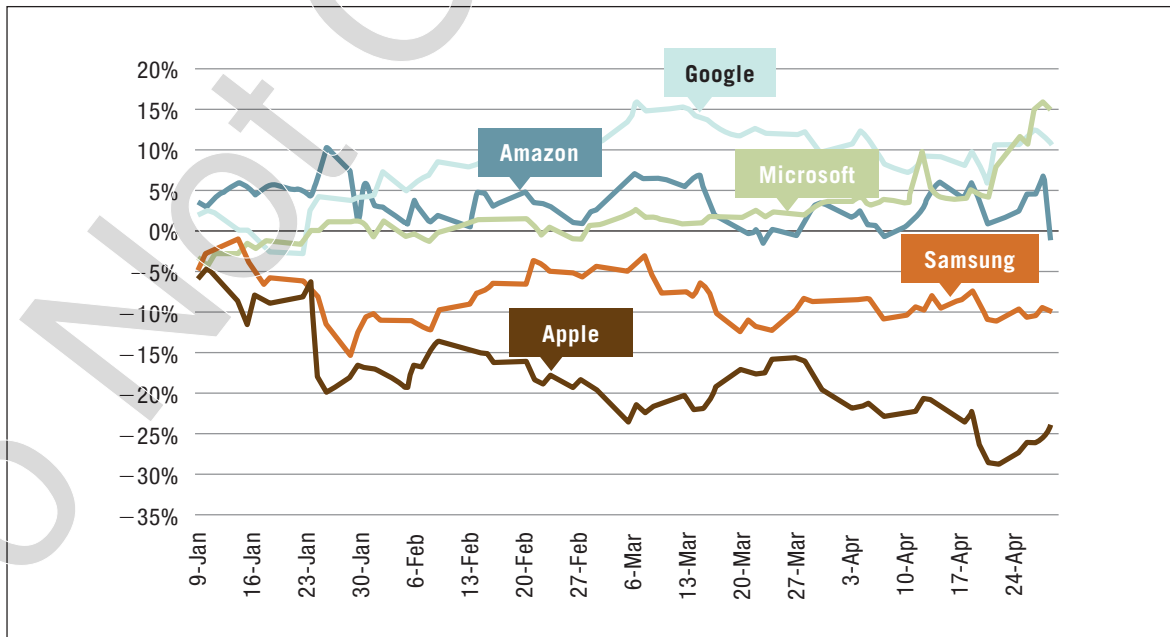
Apple (in 2013): How to Sustain a Competitive Advantage?

EXHIBIT 9 Percent Growth in Stock Price since 1990



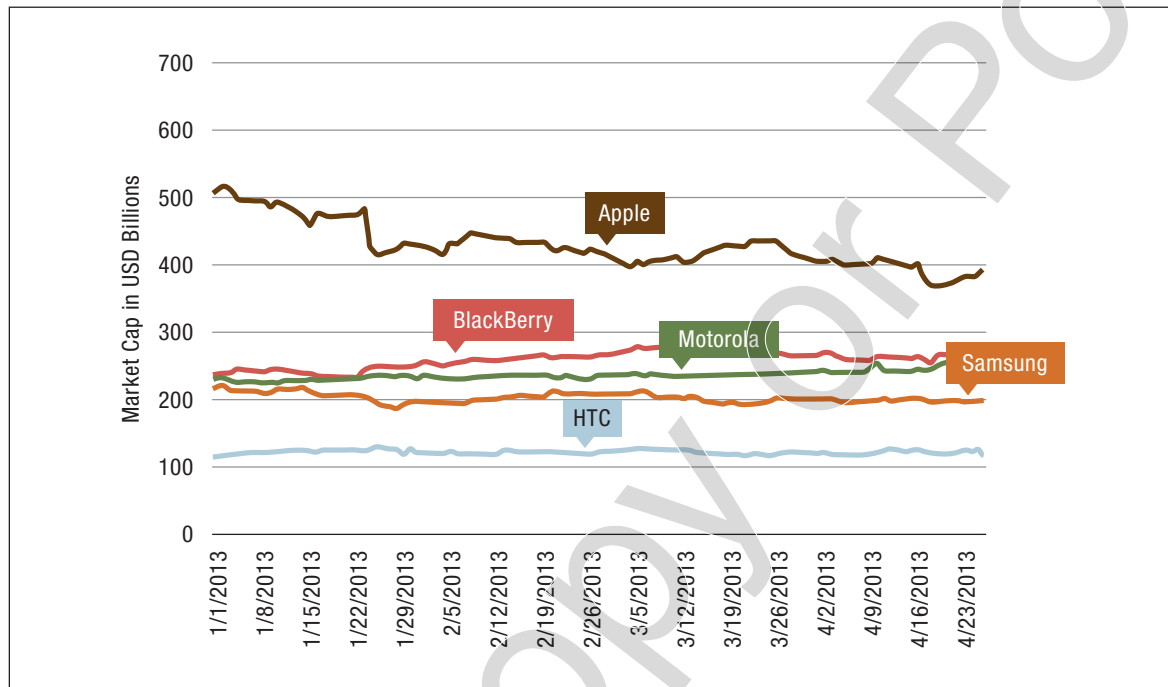
Source: Author's depiction of publicly available data.

EXHIBIT 10 Percent Growth in Stock Price in 2013



Source: Author's depiction of publicly available data.

EXHIBIT 11 Market Cap in 2013



Source: Author's depiction of publicly available data.

EXHIBIT 12 Amazon Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	3,727	6,366	8,762	9,576	11,448
Receivables–total	711	836	1,324	2,134	2,600
Inventories–total	1,399	2,171	3,202	4,992	6,031
Property, plant, and equipment–total (net)	854	1,290	2,414	4,417	7,060
Depreciation, depletion, and amortization (accumulated)	555	625	842	1,369	2,522
Assets–total	8,314	13,813	18,797	25,278	32,555
Accounts payable–trade	3,594	5,605	8,051	11,145	13,318
Long-term debt	533	252	641	1,415	3,830
Liabilities–total	5,642	8,556	11,933	17,521	24,363
Stockholders' equity–total	2,672	5,257	6,864	7,757	8,192
Sales (net)	19,166	24,509	34,204	48,077	61,093
Cost of goods sold	14,585	18,594	26,009	36,288	44,271
Selling, general, and administrative expense	3,452	4,300	6,131	9,773	14,287
Income taxes	247	253	352	291	428
Income before extraordinary items	645	902	1,152	631	–39
Net income (loss)	645	902	1,152	631	–39
Earnings per share (basic) excluding extraordinary items	1.52	2.08	2.58	1.39	–0.09
Earnings per share (diluted) excluding extraordinary items	1.49	2.04	2.53	1.37	–0.09

Source: Compustat.

EXHIBIT 13 BlackBerry Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	1,518	1,911	2,121	1,774	2,654
Receivables–total	2,270	2,800	4,279	3,693	3,222
Inventories–total	682	622	618	1,027	603
Property, plant, and equipment–total (net)	1,335	1,957	2,504	2,748	2,395
Depreciation, depletion, and amortization (accumulated)	588	921	1,395	2,032	2,622
Assets–total	8,101	10,204	12,875	13,731	13,165
Accounts payable–trade	448	616	832	744	1,064
Long-term debt	0	0	0	0	0
Liabilities–total	2,227	2,602	3,937	3,631	3,705
Stockholders' equity–total	5,874	7,603	8,938	10,100	9,460
Sales (net)	11,065	14,953	19,907	18,435	11,073
Cost of goods sold	5,835	8,064	10,593	10,890	6,339
Selling, general, and administrative expense	2,180	2,778	3,750	4,052	3,496
Income taxes	908	809	1,233	347	–592
Income before extraordinary items	1,893	2,457	3,411	1,164	–628
Net income (loss)	1,893	2,457	3,411	1,164	–646
Earnings per share (basic) excluding extraordinary items	3.35	4.35	6.36	2.22	–1.20
Earnings per share (diluted) excluding extraordinary items	3.30	4.31	6.34	2.22	–1.20

Source: Compustat.

EXHIBIT 14 Facebook Financial Data, 2010–2012 (in \$ millions, except EPS data)

Fiscal Year	2010	2011	2012
Cash and short-term investments	1,785	3,908	9,626
Receivables–total	373	547	1,170
Inventories–total	0	0	0
Property, plant, and equipment–total (net)	574	1,475	2,391
Depreciation, depletion, and amortization (accumulated)	246	450	882
Assets–total	2,990	6,331	15,103
Accounts payable–trade	29	63	65
Long-term debt	367	398	1,991
Liabilities–total	828	1,432	3,348
Stockholders' equity–total	2,162	4,899	11,755
Sales (net)	1,974	3,711	5,089
Cost of goods sold	354	537	720
Selling, general, and administrative expense	449	1,095	3,187
Income taxes	402	695	441
Income before extraordinary items	606	1,000	53
Net income (loss)	606	1,000	53
Earnings per share (basic) excluding extraordinary items	0.28	0.47	0.02
Earnings per share (diluted) excluding extraordinary items	0.28	0.47	0.02

Source: Compustat.

EXHIBIT 15 Google Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	15,846	24,485	34,975	44,826	48,088
Receivables–total	2,642	3,202	5,002	6,172	8,585
Inventories–total	0	0	0	0	505
Property, plant, and equipment–total (net)	5,234	4,845	7,759	9,603	11,854
Depreciation, depletion, and amortization (accumulated)	2,342	3,286	4,012	4,797	5,843
Assets–total	31,768	40,497	57,851	72,574	93,798
Accounts payable–trade	178	216	483	588	2,012
Long-term debt	0	0	0	2,986	2,988
Liabilities–total	3,529	4,493	11,610	14,429	22,083
Stockholders' equity–total	28,239	36,004	46,241	58,145	71,715
Sales (net)	21,796	23,651	29,321	37,905	50,175
Cost of goods sold	7,130	7,338	9,036	11,351	17,633
Selling, general, and administrative expense	6,447	6,468	8,523	12,475	16,284
Income taxes	1,627	1,861	2,291	2,589	2,598
Income before extraordinary items	4,227	6,520	8,505	9,737	10,788
Net income (loss)	4,227	6,520	8,505	9,737	10,737
Earnings per share (basic) excluding extraordinary items	13.46	20.62	26.69	30.17	32.97
Earnings per share (diluted) excluding extraordinary items	13.31	20.41	26.31	29.76	32.46

Source: Compustat.

EXHIBIT 16 Microsoft Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	23,662	31,447	36,788	52,772	63,040
Receivables—total	13,589	11,192	13,014	14,987	15,780
Inventories—total	985	717	740	1,372	1,137
Property, plant, and equipment—total (net)	6,242	7,535	7,630	8,162	8,269
Depreciation, depletion, and amortization (accumulated)	6,302	7,547	8,629	9,829	10,962
Assets—total	72,793	77,888	86,113	108,704	121,271
Accounts payable—trade	4,034	3,324	4,025	4,197	4,175
Long-term debt	1	3,756	4,939	11,921	10,713
Liabilities—total	36,507	38,330	39,938	51,621	54,908
Stockholders' equity—total	36,286	39,558	46,175	57,083	66,363
Sales (net)	60,420	58,437	62,484	69,943	73,723
Cost of goods sold	9,726	9,864	9,888	13,040	14,772
Selling, general, and administrative expense	24,817	25,589	25,932	27,205	28,237
Income taxes	6,133	5,252	6,253	4,921	5,289
Income before extraordinary items	17,681	14,569	18,760	23,150	16,978
Net income (loss)	17,681	14,569	18,760	23,150	16,978
Earnings per share (basic) excluding extraordinary items	1.90	1.63	2.13	2.73	2.02
Earnings per share (diluted) excluding extraordinary items	1.87	1.62	2.10	2.69	2.00

Source: Compustat.

EXHIBIT 17 Nokia Financial Data, 2008–2012 (in \$ millions, except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	9,493	12,717	16,288	14,143	13,066
Receivables—total	13,145	11,438	10,045	9,316	7,320
Inventories—total	3,526	2,673	3,348	3,023	2,028
Property, plant, and equipment—total (net)	2,909	2,676	2,593	2,390	1,887
Depreciation, depletion, and amortization (accumulated)	4,958	5,131	4,876	4,943	4,670
Assets—total	55,094	51,220	51,912	46,969	39,491
Accounts payable—trade	7,273	7,094	8,095	7,177	5,794
Long-term debt	1,198	6,352	5,629	5,149	6,708
Liabilities—total	32,114	30,081	30,375	28,916	27,034
Stockholders' equity—total	19,776	18,758	19,086	15,403	10,629
Sales (net)	71,168	59,094	56,639	50,375	40,075
Cost of goods sold	45,988	39,131	38,756	35,122	28,399
Selling, general, and administrative expense	13,520	13,739	12,567	12,047	10,751
Income taxes	1,505	1,006	588	376	1,510
Income before extraordinary items	5,551	1,277	2,455	−1,510	−4,096
Net income (loss)	5,551	1,277	2,455	−1,510	−4,096
Earnings per share (basic) excluding extraordinary items	1.49	0.34	0.66	−0.40	−1.11
Earnings per share (diluted) excluding extraordinary items	1.46	0.34	0.66	−0.40	−1.11

Source: Compustat.

Apple (in 2013): How to Sustain a Competitive Advantage?

EXHIBIT 18 Samsung Financial Data, 2008–2012 (in \$ millions,* except EPS data)

Fiscal Year	2008	2009	2010	2011	2012
Cash and short-term investments	18,311	25,584	20,943	25,040	34,888
Receivables—total	12,672	17,832	19,852	22,502	24,851
Inventories—total	8,844	9,299	12,451	14,642	16,534
Property, plant, and equipment—total (net)	39,591	37,094	49,343	57,802	63,802
Depreciation, depletion, and amortization (accumulated)	45,991	52,619	58,293	67,010	0
Assets—total	98,101	110,195	125,107	144,991	168,692
Accounts payable—trade	5,205	7,671	8,523	9,574	8,840
Long-term debt	5,743	3,418	1,138	4,623	5,080
Liabilities—total	39,479	42,135	41,867	50,109	55,517
Stockholders' equity—total	0	0	83,240	94,882	113,175
Sales (net)	113,001	129,491	144,058	153,721	187,354
Cost of goods sold	74,583	82,258	85,571	92,438	104,180
Selling, general, and administrative expense	23,394	26,050	32,387	34,222	41,557
Income taxes	641	2,175	2,965	3,191	5,655
Income before extraordinary items	5,148	8,990	14,719	12,446	21,600
Net income (loss)	4,451	7,784	14,533	10,800	18,754
Earnings per share (basic) excluding extraordinary items	35.11	61.02	98.75	82.98	143.49

*Converted from South Korean Won (KWN) at 1₩ 5 0.00093163\$US.

Source: Compustat.

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