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Apple Inc. in 2010

On April 4, 2010, Apple Inc. launched its eagerly anticipated iPad amid great hype. The multimedia computer tablet was the third major innovation that Apple had released over the last decade. CEO Steve Jobs had argued that the iPad was another revolutionary product that could emulate the smashing success of the iPod and the iPhone. Expectations ran high. Even *The Economist* displayed the release of the iPad on its magazine cover with Jobs illustrated as a biblical figure, noting that, "The enthusiasm of the Apple faithful may be overdone, but Mr. Jobs's record suggests that when he blesses a market, it takes off."[1]

The company started off as "Apple Computer," best known for its Macintosh personal computers (PCs) in the 1980's and 1990's. Despite a strong brand, rapid growth, and high profits in the late 1980s, Apple almost went bankrupt in 1996. Then Jobs went to work, transforming "Apple Computer" into "Apple Inc." with innovative non-PC products starting in the early 2000's. In fact, by 2010, the company viewed itself as a "mobile device company."[2] In the 2009 fiscal year, sales related to the iPhone and the iPod represented nearly 60% of Apple's total sales of $43 billion.[3] Even in the midst of a severe economic recession, revenues and net income both soared (see **Exhibits 1a** through **1c**). Meanwhile, Apple's stock was making history of its own. The share price had risen more than 15-fold since 2003 (See **Exhibit 2**).

By almost any measure, Apple's turnaround was a spectacular accomplishment. Yet Steve Jobs knew that no company in the technology industry could relax. Challenges abounded. In 2009, for example, iPod sales were falling. At the same time, Microsoft introduced Window 7, which led to a resurgence in PC sales. Even though Macintosh sales had grown faster than the industry in recent years, Apple's share of the worldwide PC market had remained below 5% since 1997 (see **Exhibit 3**). In addition, there was great uncertainty about the iconic CEO's health. Jobs had taken medical leave for a liver transplant in 2009, following treatment for pancreatic cancer a few years earlier. Many wondered—would Jobs remain at Apple and could the company thrive without him? Finally, would the iPhone continue its march to dominate smartphones in the face of growing competition from Google, RIM, and Nokia? And would Apple's newest creation, the iPad, take the company to the next level?

Professor David B. Yoffie and Research Associate Renee Kim prepared this case. This case derives from earlier cases, including "Apple Inc., 2008," HBS No. 708-480, by Professor David B. Yoffie and Research Associate Michael Slind, and "Apple Computer, 2006," HBS No. 706-496 by Professor David B. Yoffie and Research Associate Michael Slind. This case was developed from published sources. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Apple's History

Steve Jobs and Steve Wozniak, a pair of 20-something college dropouts, founded Apple Computer on April Fool's Day, 1976.[4] Working out of the Jobs family's garage in Los Altos, California, they built a computer circuit board that they named the Apple I. Within several months, they had made 200 units and taken on a new partner—A.C. "Mike" Markkula, Jr., who was instrumental in attracting venture capital as the experienced businessman on the team.

Jobs's mission was to bring an easy-to-use computer to market, which led to the release of the Apple II in April 1978. It sparked a computing revolution that drove the PC industry to $1 billion in annual sales in less than three years.[5] Apple quickly became the industry leader, selling more than 100,000 Apple IIs by the end of 1980. In December 1980, Apple launched a successful IPO.

Apple's competitive position changed fundamentally in 1981 when IBM entered the PC market. The IBM PC, which used Microsoft's DOS operating system (OS) and a microprocessor (also called a CPU) from Intel, was a relatively "open" system that other producers could clone. Apple, on the other hand, practiced horizontal and vertical integration. It relied on its own proprietary designs and refused to license its hardware to third parties.

IBM PCs not only gained more market share, but they also emerged as the new standard for the industry. Apple responded by introducing the Macintosh in 1984. The Mac marked a breakthrough in ease of use, industrial design, and technical elegance. However, the Mac's slow processor speed and lack of compatible software limited sales. Apple's net income fell 62% between 1981 and 1984, sending the company into a crisis. Jobs, who was often referred to as the "soul" of the company, was forced out in 1985.[6] The boardroom coup left John Sculley, the executive whom Jobs had actively recruited from Pepsi-Cola for his marketing skills, alone at the helm.

The Sculley Years, 1985–1993

Sculley pushed the Mac into new markets, most notably in desktop publishing and education. Apple's desktop market was driven by its superior software, such as Aldus (later Adobe) PageMaker, and peripherals, such as laser printers. In education, Apple grabbed more than half the market. Apple's worldwide market share recovered and stabilized at around 8% (see **Exhibit 3**). By 1990, Apple had $1 billion in cash and was the most profitable PC company in the world.

Apple offered its customers a complete desktop solution, including hardware, software, and peripherals that allowed them to simply "plug and play." Apple also stood out for typically designing its products from scratch, using unique chips, disk drives, and monitors. IBM-compatibles narrowed the gap in ease of use in 1990 when Microsoft released Windows 3.0. Still, as one analyst noted, "The majority of IBM and compatible users 'put up' with their machines, but Apple's customers 'love' their Macs."[7]

Macintosh's loyal customers allowed Apple to sell its products at a premium price. Top-of-the-line Macs went for as much as $10,000 and gross profit hovered around an enviable 50%. However, as IBM-compatible prices dropped, Macs appeared overpriced by comparison. As the volume leader, IBM compatibles were also attracting the vast majority of new applications. Moreover, Apple's cost structure was high: Apple devoted 9% of sales to research and development (R&D), compared with 5% at Compaq, and only 1% at many other IBM-clone manufacturers. After adding on the Chief Technology Officer title in 1990, Sculley tried to move Apple into the mainstream by becoming a low-cost producer of computers with mass-market appeal. For instance, the Mac Classic, a $999 computer, was designed to compete head-to-head with low-priced IBM clones.

Sculley also chose to forge an alliance with Apple's foremost rival, IBM. They worked on two joint ventures; Taligent was set up to create a new OS and Kaleida aimed to write multimedia applications. Apple undertook another cooperative project involving Novell and Intel to rework the Mac OS to run on Intel chips that boasted faster processing speed. These projects, coupled with an ambition to bring out new "hit" products every 6 to 12 months, led to a full-scale assault on the PC industry. Yet Apple's gross margin dropped to 34%, 14 points below the company's 10-year average. In June 1993, Sculley was replaced by Michael Spindler, the company's president.

The Spindler and Amelio Years, 1993–1997

Spindler killed the plan to put the Mac OS on Intel chips and announced that Apple would license a handful of companies to make Mac clones. He tried to slash costs, which included cutting 16% of Apple's workforce, and pushed for international growth. In 1992, 45% of Apple's sales came from outside the United States. Yet despite these efforts, Apple lost momentum: A 1995 *Computerworld* survey found that none of the Windows users would consider buying a Mac, while more than half the Apple users expected to buy an Intel-based PC[8] (see **Exhibit 4**). Spindler, like his predecessor, had high hopes for a revolutionary OS that would turn around the company's fate. But at the end of 1995, Apple and IBM parted ways on Taligent and Kaleida. After spending more than $500 million, neither side wanted to switch to a new technology.[9] Following a $69 million loss in Apple's first fiscal quarter of 1996, the company appointed another new CEO, Gilbert Amelio, an Apple director.[10]

Amelio proclaimed that Apple would return to its premium-price differentiation strategy. Yet Macintosh sales fell amid Apple's failure to produce a new OS that would keep it ahead of Microsoft's Windows 95. Amelio ended up turning to Steve Jobs. In December 1996, Amelio announced the acquisition of NeXT Software (founded by Jobs after he left Apple) and plans to develop a new OS based on work done by NeXT. Jobs also returned to Apple as a part-time adviser. Despite more job cuts and restructuring efforts, Apple lost $1.6 billion under Amelio and its worldwide market share tumbled to around 3% (see **Exhibit 3**). In September 1997, Steve Jobs became the company's interim CEO.

Steve Jobs and the Apple Turnaround

Steve Jobs moved quickly to reshape Apple. In August 1997, Apple announced that Microsoft would invest $150 million in Apple and make a five-year commitment to develop core products, such as Microsoft Office, for the Mac. Jobs abruptly halted the Macintosh licensing program. Almost 99% of customers who had bought clones were existing Mac users, cannibalizing Apple's profits.[11] Jobs also refused to license the latest Mac OS. Apple's 15 product lines were slashed to just four categories—desktop and portable Macintoshes, for consumers and professionals. Other restructuring efforts involved hiring Taiwanese contract assemblers to manufacture Mac products and revamping Apple's distribution system from smaller outlets to national chains. In addition, in 1997, Apple launched a website to set up direct sales for the first time. Internally, Jobs focused on reinvigorating innovation. Apple pared down its inventory significantly and increased its spending on R&D (see **Exhibit 5**).

Jobs's first real coup came with the iMac in August 1998. The $1,299 all-in-one computer featured colorful translucent cases with a distinct eggshell design. The iMac also supported "plug-and-play" peripherals, such as printers, that were designed for Windows-based machines for the first time. Thanks to the iMac, Apple's sales outpaced the industry's average for the first time in years. Following Jobs's return, Apple posted a $309 million profit in its 1998 fiscal year, reversing the previous year's $1 billion loss.

Another priority for Jobs was to break away from Apple's tired, tarnished image. Jobs wanted Apple to be a cultural force. Not coincidentally, perhaps, Jobs retained his position as CEO of Pixar, an animation studio that he had bought in 1986. (Jobs later sold Pixar to Walt Disney for $7.4 billion in 2006.) Through multi-million dollar marketing campaigns such as the successful "Think Different" ads and catchy slogans ("The ultimate all-in-one design", "It just works"), Apple promoted itself as a hip alternative to other computer brands. Apple ads were placed in popular and fashion magazines as well, venturing out from general computer publications. Later on, Apple highlighted its computers as the world's "greenest lineup of notebooks" that were energy efficient and used recyclable materials.[12] The goal was to differentiate the Macintosh amid intense competition in the PC industry.

The Personal Computer Industry

While Apple pioneered the first usable "personal" computing devices, it was IBM that brought PCs into the mainstream in the 1980's. But by the early 1990's, a new standard known as "Wintel" (the Windows OS combined with an Intel processor) dominated the industry. Thousands of manufacturers—ranging from Dell Computer to no-name clone makers—built PCs around standard building blocks from Microsoft and Intel. Growth was driven by lower prices and expanding capabilities. The overall industry continued to boom through the early 2000's, propelled by Internet-demand and emerging markets such as China and the Middle East. By 2010, more than one billion PCs were in use around the world.

Revenue growth, however, failed to keep pace with volume growth. Despite PCs that were faster, with more memory and storage, average selling prices (ASPs) declined by a compound annual rate of 8% per year between 1999 and 2005.[13] Prices for key components (CPUs, memory, and hard disk drives) dropped even faster, by an average annual rate of 30%.[14] As a result, most PC manufacturers' average profit margin fell below 5%.[15] The standardization of components also led PC makers to cut spending on research and development. By the early 2000's, Dell—then the industry leader—devoted about 1% of revenue to R&D. Contract manufacturing in Taiwan and China became popular and took over more complex areas, such as design and testing.

New PC products emerged as well. More expensive laptop computers gained traction starting in the late 1980's. Two decades later, portable PCs represented 57% of worldwide PC shipments and were expected to reach 70% by 2012.[16] Like desktops, lower prices led to higher sales volume; the ASP for a laptop was around $544 towards the end of 2009, nearly half of the ASP in 2007.[17] Meanwhile, a new sub-product category of netbooks took off during the global economic downturn in 2009. These light-weight mini notebooks had limited storage capacity and were optimized for the Web. Price-sensitive buyers loved the price; a netbook usually sold for around $400.[18]

Buyers and Distribution

PC buyers fell into five categories: Home, small- and medium-sized business (SMB), corporate, education, and government. Home consumers represented the biggest segment, accounting for nearly half of worldwide PC shipments.[19] While all buyers cared deeply about price, home consumers also valued design, mobility, and wireless connectivity, business consumers balanced price with service and support, and education buyers depended on software availability.

In distribution, a significant shift occurred in the early 1990's when more knowledgeable PC customers moved away from full-service dealers that primarily sold established brands to business managers. Instead, larger enterprises bought directly from the manufacturer, while home and SMB

customers started to buy PCs through superstores (Wal-Mart, Costco), electronics retailers, (Best Buy, Circuit City), and Web-based retailers. At the same time, the so-called "white box" channel—which featured generic machines assembled by local entrepreneurs—represented a large channel for PC sales, especially in key emerging markets. "White-box" PCs reportedly represented about 30% of the overall market in 2009, and were most frequently sold into the small office and home office markets.[20]

PC Manufacturers

The four top PC vendors—Hewlett-Packard, Dell, Acer, and Lenovo—accounted for 55% of worldwide shipments (see **Exhibit 6**). Industry leader Hewlett-Packard (HP) had staged an impressive comeback following a rough period with the acquisition of Compaq Computer in 2002. HP was also the world's largest technology company, diversifying into services, servers, and storage. Around two thirds of HP's PCs were sold outside the U.S. HP also had a strong retail presence through 110,000 worldwide outlets. Dell on the other hand, stumbled (see **Exhibit 7**). Its distinct combination of direct sales and build-to-order manufacturing was a hit in the corporate market. Yet Dell was late to catch the consumer boom. Founder Michael Dell returned as CEO in January 2007 and emphasized consumer-friendly products, re-entered retail distribution, and pushed for international expansion. Still, Dell struggled with cost controls and poor margins. In 2009, Dell was the only top four PC vendor to lose its worldwide market share.

Acer and Lenovo, active in emerging markets, both benefited from acquisitions of high-profile U.S. PC brands. In 2007, Taiwan-based Acer bought Gateway, a leading U.S. PC brand, and became the third-largest PC vendor in the world. Acer also acquired Packard-Bell, a PC maker with a strong presence in Europe (where Acer also was a leading brand). The company's worldwide PC shipments grew 22% in 2009, the fastest among its competitors, thanks to Acer's strength in notebooks and netbooks.[21] China-based Lenovo vaulted into the front ranks of PC vendors in 2005 when it acquired IBM's money-losing PC business for $1.75 billion. Lenovo's greatest strength was its dominant position in China, where it commanded a third of the market.

Suppliers, Complements, and Substitutes

Suppliers to the PC industry fell into two categories: Those that made products (such as memory chips, disk drives, and keyboards) with many sources; and those that made products—notably microprocessors and operating systems—that had just a few sources. Products in the first category were widely available at highly competitive prices. Products in the second category were supplied chiefly by two firms: Intel and Microsoft.

Microprocessors Microprocessors, or CPUs, were the hardware "brains" of a PC. Intel commanded roughly 80% of the PC CPU market. Competition emerged in the 1990s from companies like Advanced Micro Devices and more recently, VIA Technologies. Still, Intel remained the market leader with leading-edge technology, manufacturing scale, and a powerful brand. Since 1970, CPU prices (adjusted for changes in computing power) had dropped by an average of 30% per year.[22]

Operating system An OS was *the* software that managed a PC's resources and supported its applications. Microsoft had dominated this market since the IBM PC in the 1980's. More than 90% of all PCs in the world ran on some version of Windows. Microsoft's big hit in the last decade was Windows XP. Introduced in October 2001, XP sold 17 million copies in its first eight weeks of sales. Developed at a cost of $1 billion, XP initially garnered Microsoft between $45 and $60 in revenue per copy.[23] Vista, the next version introduced in 2007, did not fare as well. Consumers complained about its sluggish performance and were reluctant to upgrade to Vista. Two years later, Windows 7 was

released to strong reviews. Analysts estimated that Microsoft spent $1.5 billion to develop Windows 7 and another $1 billion in marketing. Microsoft shipped over 60 million units of the new OS in its first quarter of sales in the fall of 2009, generating almost $7 billion in revenue. Windows 7 was the fastest selling OS in history.[24]

Application software, content, and complementary products The value of a computer corresponded directly to the complementary software, content, and hardware that were available on that platform. Key application software included word processing, presentation graphics, desktop publishing, and Internet browsing. Since the early 1990's, the number of applications available on PCs exploded, while ASPs for PC software collapsed. Microsoft was the largest vendor of software for Wintel PCs and, aside from Apple itself, for Macs as well.[25] Firms such as Google even offered productivity software (Google Apps) for free. PCs also benefited from a wide selection of content, and a vast array of complementary hardware, ranging from printers to multimedia devices.

Alternative technologies Since the early 2000s, consumer electronics (CE) products, ranging from cell phones and PDAs to TV set-top boxes to game consoles, started to encroach on functionality that was once the sole purview of the PC. For example, advanced game devices like Sony PlayStation3 allowed consumers to watch DVDs, surf the Web, and play games directly online in addition to play traditional video games. At the same time, smartphones increasingly functioned as handheld computers, allowing users to do email, visit websites, and manage their online lives. While several industry insiders worried about the impact of digital devices on the PC industry, Jobs had a different view—positioning the Macintosh at the heart of his business strategy for Apple.

The Macintosh and Apple's "Digital Hub" Strategy

In 2001, marking Apple's 25th anniversary, Jobs presented his vision for the Macintosh in what he called the "digital hub." He believed that the Macintosh had a real advantage for consumers who were becoming entrenched in a digital lifestyle, using digital cameras, portable music players, and digital camcorders, not to mention mobile phones. The Mac could be the preferred "hub" to control, integrate, and add value to these devices. Jobs viewed Apple's control of both hardware and software, one of the very few remaining in the PC industry, as a unique strength.

Apple subsequently revamped its product line to offer machines that could deliver a cutting-edge, tightly integrated user experience. Although the company remained committed to the education market, new PC products focused on home consumers' lifestyle. Thanks to several technological innovations and a new retail strategy, Apple became the fourth-largest PC vendor in the U.S. market with an 8% share by the end of 2009.[26] The company's greatest strength lay in the premium-priced PC category; 91% of PCs priced $1,000 and above in the U.S. market were sold by Apple.[27]

Shift to Intel CPUs Apple introduced the first Mac computer to run on an Intel chip in 2006. By the next year, the entire Macintosh line ran on Intel chips that were better for laptops as well as for higher performance desktops and servers.[28] Critical to the Mac's resurgence, Intel's chips enabled Apple to build laptops that were both faster and less power-hungry.[29] By the 2009 fiscal year, notebooks accounted for 69% of all Macintosh sales compared to 38% seven years ago. With "Intel inside," the Mac also became a machine that could natively run a Windows OS along with Windows applications. This capability potentially offset a longstanding disadvantage to choosing a Mac—the relative lack of Macintosh software.

Operating system Apple introduced a new OS in 2001, the first fully overhauled platform released since 1984. The Mac OS X was based on UNIX, a more stable, industrial-strength OS favored

by computer professionals. Analysts estimated that OS X cost Apple roughly $1 billion to develop. Apple issued upgrades every 12 to 18 months, in greater frequency than what Microsoft had done with Windows. The sixth version, named Leopard, was released in October 2007 and sold two million copies in its opening weekend.[30] Leopard ran on more than half of all Mac computers by January 2010.[31] Early sales of the following Snow Leopard version indicated high adoption rates as well. According to one market survey, 81% of Leopard users were "very satisfied" with the OS compared to 53% of Windows XP users.[32]

Applications Proprietary, Apple-developed applications made up a growing segment of the company's efforts to support the Macintosh line. Building programs such as those in the iLife suite (iPhoto, iTunes, iWeb) required Apple to assume significant development costs.[33] At the same time, the company continued to depend on the cooperation of key independent software vendors—especially Microsoft. In 2003, after Apple developed its Web browser Safari, Microsoft said it would no longer develop Internet Explorer for the Mac. However, Microsoft did continue to develop its Office suite for Macintosh. Full interoperability with Office products was critical to Macintosh's viability. Microsoft benefitted from this arrangement as well. By one estimate, it sold close to $1 billion of Office software to Mac users. Jobs still hedged his bets by developing iWork productivity applications, including Pages, Keynote, and Numbers.[34]

Distribution The first Apple retail store opened in McLean, Virginia, in 2001. Apple not only wanted consumers to look at the eye-catching Macintosh designs, it also wanted people to directly use and experience Apple's software. The Apple retail experience gave many consumers their first exposure to the Macintosh product line. By 2009, the company estimated that half of all retail Mac sales were to "new to Mac" customers.[35] The retail division—with more than 280 stores in 10 countries—grew to account for 16% of Apple's total revenue.[36] Observers viewed Apple's retail strategy as a huge success: One analyst said that the company had become "the Nordstrom of technology."[37] Other retail revenues were explored as well, such as entering a partnership with Best Buy, the world's largest electronics retailer. Yet a key factor in bringing people into the stores, most analysts believed, was the popularity of the iPod.

Moving Beyond the Macintosh

Apple's shift towards a digital hub strategy was initiated by the debut of the iPod in 2001, followed by the iPhone in 2007, then the iPad in 2010. These product lines set Apple on a path toward becoming a full-fledged digital convergence company. The change in the company's name from 'Apple Computer' to "Apple Inc." in 2007 marked the official repositioning of the company.

The iPod Sensation

While the prospects for the Macintosh business had improved, it was the iPod that set Apple on its explosive growth path. The iPod was initially one of many portable digital music players based on the MP3 standard. Thanks to its sleek design, simple user interface, and large storage, it soon became "an icon of the Digital Age," in the words of one writer.[38] While early MP3 players only stored an hour of music, the first iPod stored up to 1,000 songs and retailed for $399. Over the next five years, Apple delivered one new innovative design after another. By 2010, Apple reportedly held more than 70% of the MP3 market in the United States. [39]

The economics of the iPod were stellar by CE industry standards. The iPod nano, for example, had gross margins of around 40% in 2007.[40] The biggest cost component for the nano was flash memory,

which could account for more than half of the bill of materials. Recognizing the importance of flash memory, Apple set out to insure that it got the best prices. In November 2005, for example, Apple agreed to pay $500 million up-front to Intel and Micron to secure "a substantial portion" of their memory output.[41] Similar deals were made with Hynix, Samsung, and Toshiba. Apple subsequently became one of the largest purchasers of flash memory in the world.

Apple's approach to developing and marketing the iPod was more open than its strategy for the Macintosh. The iPod could sync with Windows as well as a Mac. Apple also built an ecosystem with the iPod accessory market that ranged from fashionable cases to docking stations. For every $3 dollars spent on an iPod, according to one analyst, consumers spent another $1 on iPod add-on products.[42] Apple, through a program that licensed its "Made for iPod" logo, earned an estimated 5% of the retail price of such items.[43] Many analysts also believed that the iPod's "halo effect" had benefitted Apple's Mac business.[44]

Within the iPod product line, the Touch was Apple's premier device. Released in 2007, the Touch was the first iPod that had built-in WiFi, a 3.5 inch screen, and a multi-touch graphical interface. Popular handheld game players such as the Nintendo DS and Sony PSP suddenly found themselves competing with the Touch. Some 35 million iPod Touch devices had been sold by April 2010.[45]

While iPods were available in all price segments, iPod ASPs generally ran $50 to $100 higher than the competition.[46] Rivals in the MP3 player market included SanDisk, Creative, and Samsung; each had a market share below 10%. Microsoft also introduced its Zune line of music players in 2006. At the hardware level, most players were roughly comparable to iPod models. Yet competitors found themselves at a major disadvantage with the emergence of Apple's iTunes store.

iTunes Two features which dramatically differentiated Apple's iPods were its iTunes desktop software, which synchronized iPods with computers; and its iTunes Music Store, which opened in April 2003. The two, in combination, completed Apple's vision of an entertainment hub.[47] The iTunes store was the first legal site that allowed music downloads on a pay-per-song basis. Visitors could pay 99 cents per song for a title offered by all five major record labels and by thousands of independent music labels. The downloaded songs could be played on the user's computer, burned onto a CD, or transferred to an iPod. Within three days of launching the service, PC owners had downloaded one million copies of free iTunes software and had paid for one million songs.[48] Customers loved the vast music selections and ease of use, transforming the iTunes store into the number one music store in the world.[49] By February 2010, it had sold 10 billion songs and featured the world's largest music catalog. Offerings expanded to audiobooks and TV shows, including the latest episodes of popular shows such as "American Idol." Over 8,000 movies titles could be rented or downloaded to "own" as well, catering to iPod Touch owners.

The launch of the iTunes store had a galvanic impact on iPod sales. Before the advent of iTunes, Apple sold an average of 113,000 iPods per quarter. After iTunes' launch, iPod sales shot up to 733,000 units, and exploded thereafter.[50] The direct impact of iTunes on Apple's profitability was far less impressive. Of the 99 cents that Apple collected per song, as much as 70 cents went to the music label that owned it, and about 20 cents went toward the cost of credit card processing. That left Apple with only about a dime of revenue per track, from which Apple had to pay for its website, along with other direct and indirect costs.[51] In essence, Jobs had created a razor-and-blade business, only in reverse: Here, the variable element served as a loss leader for a profit-driving durable good.[52]

Central to the initial iTunes model was a set of standards that guarded both the music labels' intellectual property and the proprietary technology inside the iPod. An Apple-exclusive "digital rights management" (DRM) system called FairPlay protected iTunes songs against piracy by limiting

the number of computers that could play a downloaded song to five. FairPlay enabled Jobs to coax music executives into supporting the initial iTunes venture. No competing MP3 player could play FairPlay-protected songs.[53] Observers called iTunes a "Trojan horse" that allowed iPod-specific standards to invade users' music libraries and, in effect, to lock out other music players.[54] The iPod, meanwhile, could play content recorded in most standard formats.

Despite the success of iTunes, Apple had a tense relationship with content companies. They balked at its dominance of the digital music market and objected, in particular, to its fixed pricing structure. Music labels also saw their higher-priced CD sales pushed aside in favor of 99 cent a-la-carte downloads. Then, in a revised agreement announced in 2009, music labels gave up the DRM in exchange for flexible pricing, allowing them to charge more for new or popular songs. In addition, the removal of DRM allowed people to move the songs they bought on iTunes among different computers, phones, and other devices.

Competition Online music stores such as Amazon.com, Napster, and Walmart.com offered individual song downloads at competitive or discounted prices to iTunes. To put more pressure on Apple, music labels had allowed some of these stores to sell DRM-free music for more than a year before signing the new agreement with Apple. Some had subscription plans that allowed unlimited listening, starting at $5 per month. Social networking service MySpace—where millions of music artists maintained profile pages to promote their music—formed a partnership with three major music labels to unveil its own music service in 2008. Most of these competitors offered songs to play on various devices, including the iPod.

In addition to music streaming services from social networks, Apple and other MP3 players had to consider other challenges as well. Internet radio sites, such as Pandora and Last.fm, offered free streaming music. Spotify, Europe's largest legal online music jukebox that was partially owned by major music labels, allowed users to create their own playlists, share them, and stream free music like a virtual MP3 player. Although Spotify was not yet available in the U.S., in markets where service was available, some music labels were making more money from Spotify than iTunes.[55] Even mobile handset manufacturers such as Nokia started to bundle unlimited music services with their phones.

Jobs had two responses to these threats: In 2009, he bought Lala.com, a music streaming service. The deal raised speculations that Apple could be exploring an alternative model to store and play digital music, bypassing downloads on a media player all together. And of course, in June of 2007, he introduced the iPhone.

The iPhone

Hailed as *Time* magazine's "Invention of the Year," the iPhone represented Apple's bid to "reinvent the phone."[56] Two and a half years of development efforts had been devoted to the phone, guarded under intense secrecy, even within the company's own employees. The estimated development cost was around $150 million.

Entry into mobile phones might have been a risky move for Apple. The industry was dominated by Nokia, Motorola, and Samsung, with roughly 60% market share. In addition, products were characterized by short product life cycles (averaging six to nine months) and sophisticated technology, including radio technology, where Apple had little experience. In distribution, Apple faced powerful cellular carriers such as NTT DoCoMo and Vodafone, which controlled the networks and often the phones used on those networks. In the U.S., the top two carriers—Verizon Wireless and AT&T—collectively controlled more than 60% of the market and their networks were 'locked': An AT&T phone would only work on AT&T's network. Especially in the U.S., a handset manufacturer

was usually dependent on the operator to provide a subsidy, which could lower the consumer's purchase price of a popular new handset by as much as $150 or more. In return, most consumers signed a two-year service contract with the carrier. Operators also maintained "walled gardens," which required consumers to access content only from their own networks. Price competition was especially intense in emerging markets like China and India, where, like the PC market, manufacturers had to compete with "white-box" phones.

In the early days when a mobile phone's foremost purpose was to make calls, consumers selected a handset based on its appearance and service provider. Starting in the mid-1990's, the industry's preference shifted towards feature phones that offered more attractive hardware designs and user-friendly interfaces, which was pioneered by Nokia, the world's largest mobile phone manufacturer. Multimedia functions, such as a camera, were added as well. Then smartphones rose to prominence in the next decade. These high-end phones brought multiple functions together in the palm of one's hand, serving as a mobile phone, Internet browser, PDA device (such as managing schedules and address book), and media player.

The iPhone, however, changed the rules in the industry. A revolutionary 3.5 inch touch-screen interface placed commands at the touch of users' fingertips without a physical keyboard. The iPhone's entire system ran on a specially adapted version of Apple's OS X platform. Above all, users found it intuitive to use. The first model was priced at $499 for an 8GB model. At that time, handsets that cost more than $300 accounted for only 5% of worldwide mobile phone sales.[57] AT&T, the exclusive U.S. operator for the iPhone, did not provide a subsidy. Instead, AT&T agreed to an unprecedented revenue sharing agreement with Apple, which gave Apple control over distribution, pricing, and branding.

The first generation iPhone sold about six million units over five quarters. However, more than a million had been sold in the "grey market," in which consumers bought iPhones from unauthorized resellers and used them on unsanctioned mobile networks. Apple's demand for a share of service revenue had led to only a few markets in the world with legal iPhone distribution. One estimate suggested that Apple could lose $1 billion over three years from the loss of service-share revenue.[58]

The second iPhone model was released in 2008. This version ran on a faster 3G network. More importantly, Apple had revamped the pricing model under a new agreement with AT&T. The carrier provided a subsidy on the phone in exchange for dropping the revenue sharing agreement. Consumers could buy an 8GB iPhone with a two-year contract for $199. An unsubsidized iPhone could cost $599 for the same version. With the 3G model, iPhone revenues exploded to $13 billion by the end of the 2009 fiscal year (see **Exhibit 1b**). A third version, the iPhone 3GS, went on sale in June 2009. With its release, the subsidized price of the 8GB iPhone dropped down to $99.

Analysts estimated that Apple generated an ASP of $562 from its iPhones, while competitors' ASP on similar handsets ranged between $300 and $400.[59] Falling component costs and design improvements helped to reduce the iPhone's cost structure. According to one analysis, the bill of materials for the latest 16GB model was just under $180.[60] The first iPhone with half of that storage capacity cost around $220 to build.[61] Lower prices and wider international distribution (94 countries) fueled sales. AT&T also benefitted from being the exclusive carrier for the iPhone in the U.S. The carrier generated an average revenue per user (ARPU) of $95 with the iPhone. The top three U.S. carrier's ARPU, in contrast, was around $50.[62]

Within two years, the iPhone went from zero to 30% of Apple's total revenue. In terms of global smartphones sales, the iPhone was the biggest growth story, capturing more than 14% of the market (see **Exhibit 8**). Like the iTunes store, a key factor behind the iPhone sensation was the extension of the iPhone's ecosystem with the launch of the Apple App Store in 2008.

App Store Software applications for PDAs and smartphones had been around for years. Palm Inc., the PDA market leader in the 1990's, was known for its wealth of third party-developed applications. Microsoft similarly had more than 20,000 apps written for its mobile OS. These applications could be downloaded through multiple outlets with an average price of $10 or more. But Apple's App Store was the first outlet that made it easy to distribute, access, and download applications directly onto the mobile phone. Customers could downloaded apps onto their iPhones over the network or download them to their PC. Many apps were free; even paid apps usually started at 99 cents. The App Store was introduced as part of iTunes, which consumers were already familiar with through the iPod. Third party developers also welcomed the App Store because Apple made it easier to reach consumers. Apple reserved the right to approve all applications before they went on sale, and kept a 30% cut of the developer's app sales.

The popularity of the App Store was stunning. In about 18 months, four billion applications had been downloaded by iPhone and iPod Touch users worldwide.[63] More than 185,000 applications were offered in some 20 categories, ranging from games to health to business productivity programs. Walt Mossberg, the well-known technology columnist for the *Wall Street Journal*, even claimed that, "The App Store is what makes your device worth the price."[64] Mobile apps had turned into a nice side business for Apple as well. Around $4 billion was spent on mobile phone applications in 2009, the bulk of which was spent on iPhone apps.[65] Excluding developers' share, that still left Apple with about $1 billion dollars in app sales.[66] Apple's blockbuster hit sent competitors rushing to offer their own application stores and touchscreen devices as well.

Competitors Apple's competitors fell into two large categories, based on their business models. Research In Motion (RIM), Palm, and to a lesser extent, Nokia, took a similar approach to Apple by controlling both hardware and software. RIM's BlackBerry smartphones delivered one of the best mobile e-mail experiences and was a popular choice among corporate consumers. BlackBerrys were offered through approximately 550 carriers in 175 countries.[67] By far, RIM and Apple were the most profitable smartphone companies in the world: According to the *Wall Street Journal*, RIM and Apple accounted for roughly 5% of the total unit value of the cellphone industry but 60% of total operating profits in 2009.[68] Palm, on the other hand, was struggling to survive. Over the prior decade, a series of break-ups and mergers left Palm in disarray. Despite new phones with good reviews, Palm continued to suffer. In March 2010, Palm reported its 11th consecutive quarterly loss.

The leader in smartphones was Nokia. Its Symbian OS held 47% of worldwide smartphone sales (see **Exhibit 8**). The company's strength lay in Europe and emerging markets such as India and China. However, Nokia's smartphone market share had slipped dramatically. Nokia had a weak presence in the U.S., a key market for smartphones, and struggled to find U.S. carriers to subsidize its handsets. In 2010, Nokia announced that it would abandon Symbian for its high-end smartphones, opting for a new OS developed jointly with Intel. Rejecting Apple's closed system, the new Nokia OS, named MeeGo, would become a free, open platform. One of the main goals was to attract more software developers to write programs and applications for its app store, named Ovi.

Meanwhile, manufacturers such as HTC, Samsung Electronics, LG Electronics, and Motorola were taking a different approach. These firms mostly licensed their operating systems from Microsoft or used Google's free Android OS.[69] Microsoft was one of the few leading platforms that still charged a license fee. It was banking on regaining its lost market share with a next generation Windows Phone 7 platform, which was aiming to start shipping around the 2010 holiday season. Android, on the other hand, was an open platform that allowed mobile operators and handset makers to use it for free with few restrictions. By 2010, there were about 50 Android-based smartphone models in the market and Android had gained a 4% market share.

Moreover, Android Marketplace, Google's competitive app store to iTunes, was gaining momentum (see **Exhibit 9**). A survey of developers in the spring of 2010 suggested that 87% were very interested in developing iPhone apps; 81% for Android apps, with Blackberry and Microsoft a distant third and fourth, at 43% and 34% respectively.[70] Competition between Apple and Google was expected to intensify with iAd, Apple's own ad system, introduced in April 2010. iAd would allow App Store developers to include ads in their software while Apple tried to tap its App Store customer base to reach out to the evolving mobile ad market. One study indicated that an iPhone user had an average of 37 applications on the device compared to Android's average of 22 apps.[71]

Limitations of the iPhone Despite enormous momentum, the iPhone had its critics. In several markets around the world, Apple's decision to restrict the iPhone to a single network operator was unpopular. In the U.S., AT&T's network had spotty data access and dropped calls, especially in New York City and San Francisco. Some even opted to stick with a more reliable carrier such as Verizon Wireless and purchase the iPod Touch instead. Other complaints included the lack of a physical QWERTY keyboard, especially among high-volume e-mail users. The battery life, although improved, was relatively weak, and users could not replace the iPhone battery or add memory. The iPhone did not support Flash technology, which meant that the device could not play embedded video featured on many websites or view shows through Hulu, a popular website that provided streamed video and movies.

The iPad

The launch of the iPad in 2010 was yet another bold move by Jobs to redefine an industry. Positioned between a smartphone and a laptop computer, the iPad was priced from $499 to $829. The computer tablet featured a 9.7 inch LED screen for reading books, watching movies, and some business productivity applications. In fact, several reviews referred to the iPad as a "giant iPod Touch" with almost identical hardware and interface. The iPad could either connect to the Internet via WiFi, or consumers could buy a premium iPad and then spend another $30 per month for AT&T's unlimited 3G service. The device could run, with some limitations, almost all iPhone apps. To offset those limitations, software developers had already released over 1,000 applications specifically developed for the iPad at the time of its launch.

Apple took a somewhat different approach to the iPad compared to the iPod and the iPhone. Going back to his roots, Jobs decided to take more control over the components. Between 2008 and 2010, Jobs bought two microprocessor design companies for about $400 million.[72] The iPad became the first Apple product to run on its own branded chip, the A4. Like Intel's Atom or Qualcomm's Snapdragon CPUs, the A4 was specifically designed for next generation mobile devices that required low-power and fast processing speed. Apple claimed that the A4 enabled the iPad to deliver 10 hours of battery life.

More than 450,000 iPads were sold during its first week on the market. Jobs commented that, "It feels great to have the iPad launched into the world—it's going to be a game changer."[73] Yet the jury was out for the device. Computer tablets, prior to the iPad's launch, accounted for less than one percent of the PC market.[74] The iPad still lacked a physical QWERTY keyboard to the frustration of many business consumers. It could not take advantage of Flash video or animation on the Web. A top complaint was the lack of multi-tasking to run different apps in the background. In April 2010, Jobs announced that the new iPhone OS 4 would enable multi-tasking, and analysts expected the new OS to be available for iPads later in the year.

Perhaps the biggest debate about the iPad was its usage model. One possibility was that the iPad would replace the Kindle, Amazon.com's hugely successful e-reader. But Job had bigger ambitions.

He argued that the iPad would be a netbook killer and drive new consumer behavior. Others thought that the iPad could not replace a laptop, questioning whether consumers would really spend as much as $829 to carry around a third device.

Another controversy for the iPad was its relationship with publishers. For content on the iPod and iPhone, Jobs had insisted on low prices (99 cents for songs, and free or low priced apps). But in trying to woo book and magazine publishers to the iPad, Jobs took a more flexible strategy. Industry leader, Amazon, held an estimated 90% of the small but growing e-book market. Prior to the iPad, Amazon had insisted that electronic books for its Kindle could not be priced higher than $9.99. When Apple entered the market, it chose to let publishers set their own prices, usually ranging from $12 to $15 for an e-book, and took a 30% cut from the sales. After the announcement of the iPad, Amazon was forced to allow some publishers to set their own prices on Kindle books.

The hype over the iPad had produced an immediate competitive response: At least a dozen companies announced plans to ship tablets in 2010, ranging from HP, which said it would make a Wintel-based tablet, while Dell planned to ship an Android-based tablet.

The Occasional Failures

While almost everything that Steve Jobs had touched in the first decade of the 21st century had turned to gold, his record was not unblemished. Apple had two notable products that failed to live up to expectations. One was the Mac Mini. As Apple's entry-level desktop, the $599 price tag did not come with a keyboard or a mouse. The Mac Mini had limited memory and few expansion options. Consumers could get a similar Windows desktop with more functions and faster performance at a lower price. The other disappointment was Apple TV. Introduced in 2007, the set-top-box was Apple's attempt to bring digital video content directly into consumers' living rooms. Users could stream movies and TV shows to a TV set after downloading content from iTunes. However, Apple TV sales were paltry compared to Apple's other products. Nearly three years after its release, the company's management continued to refer to Apple TV as a "hobby."

Apple Inc. in the Next Decade?

Few, if any, could disagree that Apple's evolution from a PC manufacturer to a mobile device company had been a spectacular success. Most of the credit went to Steve Jobs, the man who had "changed the rules" for the company and the industry, again and again. As Apple's market capitalization approached $220 billion in the spring of 2010, surpassing IBM, HP, Cisco, Intel, and the rest of the tech world except Microsoft, one couldn't help but wonder—could anything derail Apple's momentum? The history of technology companies was littered with speeding rockets headed to the sky, only to fall back to earth with a crash. Steve Jobs had to think: Was his second act with Apple going to be the exception?

Exhibit 1a Apple Inc., Selected Financial Information, 1981-2009 (in millions of dollars, except for number of employees and stock-related data)[a]

	1981	1986	1991	1996	1998	2000	2002	2004	2006	2008	2009
Net sales	334	1,902	6,309	9,833	5,941	7,983	5,742	8,279	19,315	37,491	42,905
Cost of sales	170	891	3,314	8,865	4,462	5,817	4,139	6,022	13,717	24,294	25,683
Research and development	21	128	583	604	303	380	446	491	712	1,109	1,333
Selling, general, and administrative	77	610	1,740	1,568	908	1,256	1,109	1,430	2,433	3,761	4,149
Operating income (loss)	66	274	447	-1,204	268	530	48	336	2,453	8,327	11,740
Net income (loss)	39	154	310	-816	309	786	65	266	1,989	6,119	8,235
Total cash and ST investments	73	576	893	1,745	2,300	4,027	4,337	5,464	10,110	22,111	23,464
Accounts receivable, net	42	263	907	1,496	955	953	707	1,050	2,845	4,704	5,057
Inventories	104	109	672	662	78	33	45	101	270	509	455
Net property, plant, and equipment	31	222	448	598	348	419	621	707	1,281	2,455	2,954
Total assets	255	1,160	3,494	5,364	4,289	6,803	6,298	8,050	17,205	36,171	47,501
Total liabilities	77	466	1,727	3,306	2,647	2,696	2,203	2,974	7,221	13,874	15,861
Total shareholders' equity	177	694	1,767	2,058	1,642	4,107	4,095	5,076	9,984	22,297	31,640
Cash dividends paid	—	—	57	14	—	—	—	—	—	—	—
Number of Employees	2,456	5,600	14,432	10,896	9,663	8,568	10,211	11,695	17,787	35100	36,800
International sales/sales	27%	26%	45%	52%	45%	46%	43%	41%	41%	44%	48%
Gross margin	49%	53%	47%	10%	25%	27%	28%	27%	29%	35%	40%
R&D/sales	6%	7%	9%	6%	5%	5%	8%	6%	4%	3%	3%
SG&A/sales	23%	32%	28%	16%	15%	16%	19%	17%	13%	10%	10%
Return on sales	12%	8%	5%	NA	5%	10%	1%	3%	10%	16%	19%
Return on assets	15%	13%	9%	NA	7%	12%	1%	3%	12%	17%	17%
Return on equity	22%	22%	18%	NA	22%	22%	2%	6%	23%	33%	31%
Stock price low	$1.78	$2.75	$10.28	$4.22	$3.28	$7.00	$6.80	$10.64	$50.57	$82.58	$82.33
Stock price high	$4.31	$5.47	$18.19	$8.75	$10.75	$36.05	$13.06	$34.22	$91.63	$188.75	$204.45
P/E ratio at year-end	27.7	16.8	21.9	18.8	17.5	6.1	79.6	90.7	37.4	15.9	33.5
Market value at year-end	1,223.7	2,578.3	6,649.9	2,598.5	5,539.7	4,996.2	5,146.4	25,892.5	72,900.8	75,870.6	189,917.0[b]

Source: Compiled from Capital IQ data and Thomson-Reuters Datastream, accessed March 2010.

[a]All data based on Apple's fiscal year that ends in September, except for share price data which reflect calendar-year results.

[b]Apple's market capitalization on April 12, 2010 was $219.25 billion, according to Capital IQ.

Exhibit 1b Apple's Net Sales by Product Category, 2002-2009 (in millions of dollars)

	2002	2004	2006	2007	2008	2009
Power Macintosh[a]	1,380	1,419	NA	NA	NA	NA
iMac[b]	1,448	954	NA	NA	NA	NA
Desktops[c]	NA	NA	3,319	4,023	5,622	4,324
PowerBook	831	1,589	NA	NA	NA	NA
iBook	875	961	NA	NA	NA	NA
Portables[d]	NA	NA	4,056	6313	8,732	9,535
Total Macintosh Net Sales	4,534	4,923	7,375	10,336	14,354	13,859
iPod	143	1,306	7,676	8,305	9,153	8,091
Other music products[e]	4	278	1,885	2,496	3,340	4,036
iPhone, related products and services[f]	NA	NA	NA	630	6,742	13,033
Peripherals and other hardware[g]	527	951	1,100	1,303	1,694	1,475
Software	307	502	NA	NA	NA	NA
Service and other net sales	227	319	NA	NA	NA	NA
Software, service, and other sales[h]	NA	NA	1,279	1,508	2,208	2,411
Total Net Sales	**5,742**	**8,279**	**19,315**	**24,578**	**37,491**	**42,905**

Source: Apple's financial statements; casewriter calculations.

Note: All data based on fiscal-year results ending September.
NA = Not Available or Not Applicable.

[a]Includes Xserve product line.

[b]Includes eMac product line.

[c]Includes iMac, Mac Mini, Mac Pro, and Xserve product lines.

[d]Includes MacBook, MacBook Air, and MacBook Pro product lines.

[e]Represents iTunes Store sales, iPod services, and Apple-branded and third-party iPod accessories.

[f]Represents handset sales, carrier agreements, and Apple-branded and third-party iPhone accessories.

[g]Includes sales of displays, wireless connectivity and networking solutions, and other hardware accessories.

[h]Includes sales of Apple-branded operating system, application software, third-party software, AppleCare Services, and Internet services.

Exhibit 1c Apple's Unit Sales by Product Category, 2004-2009 (in thousands of units)

	2004	2005	2006	2007	2008	2009
Desktops[a]	1,625	2,520	2,434	2,714	3,712	5,182
Portables[b]	1,665	2,014	2,869	4,337	6,003	7,214
Total Macintosh Unit Sales	3,290	4,534	5,303	7,051	9,715	12,396
Net Sales per Unit Sold	*$1,496*	*$1,384*	*$1,391*	*$1,466*	*$1,478*	*$1,333*
iPods	4,416	22,497	39,409	51,630	54,828	54,132
Net Sales per Unit Sold	*$296*	*$202*	*$195*	*$161*	*$167*	*149*
iPhone unit sold	NA	NA	NA	1,389	11,627	20,731

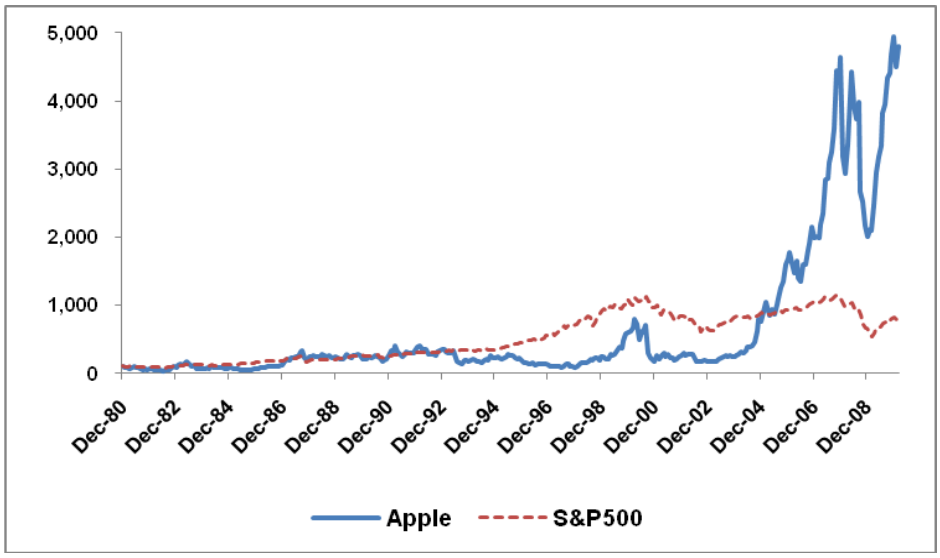
Source: Apple's financial statements; casewriter calculations.

Note: All data based on fiscal-year results ending September.
NA = Not Available or Not Applicable.

[a]Includes iMac, Mac Mini, Mac Pro, and Xserve product lines.

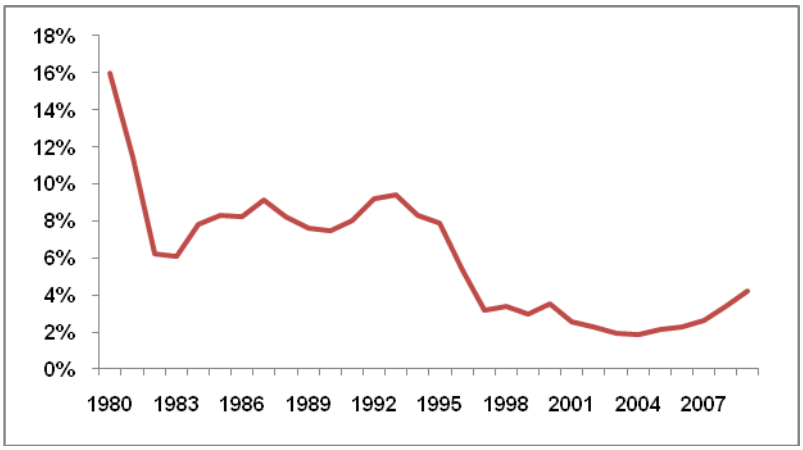
[b]Includes MacBook, MacBook Air, and MacBook Pro product lines.

Exhibit 2 Apple's Share Price vs. S&P 500 Index (December 31, 1980 = 100)



Source: Created by casewriter using data from Thomson-Reuters ONE Banker, accessed March 2010.

Exhibit 3 Apple's Worldwide PC Market Share, 1980-2009



Source: Adapted from InfoCorp., International Data Corp., Gartner Dataquest, and Merrill Lynch Data.

Exhibit 4 Shipments and Installed Base of PC Microprocessor (in millions of units)

Total Shipments	1992	1994	1996	1998	2000	2002	2004	2006	2007	2008	2009
Intel Technologies											
PC units shipped	30.6	47.8	76	105	156	126	170	230	261	287	294
PC installed base	122.2	211.4	347.5	542.5	839	1,111	1,433	1,863	2,124	2,411	2,705
Mac units shipped	NA	NA	NA	NA	NA	NA	NA	5.7	7.7	9.9	11.2
Intel-Mac installed base	NA	NA	NA	NA	NA	NA	NA	5.7	13.4	23.3	34.5
Motorola (680X0)											
Units shipped	3.9	3.9	0.8	0.2	NA	NA	NA	NA	NA	NA	NA
Installed base	16.5	24.9	26.8	27.5	NA	NA	NA	NA	NA	NA	NA
PowerPC											
Units shipped	0	0.8	4	3.5	4.7	3.1	3.5	NA	NA	NA	NA
Installed base	0	0.8	7.8	14.1	22.2	29.4	36.2	NA	NA	NA	NA

Source: Adapted from Gartner Dataquest, InfoCorp., IDC, Merrill Lynch, and Credit Suisse data.

Notes: Between 5% and 10% of total microprocessor shipments go into non-PC end products. In any given year, as much as 60% of microprocessors in the total installed base involve older technologies that were probably no longer in use. The figures for PowerPC shipments included microprocessors destined for Sony PlayStation and Xbox 360 machines. Figures for "Mac units shipped" over Macintosh calendar year sales.

NA = Not Available or Not Applicable.

Exhibit 5 PC Manufacturers' Key Operating Measures, 1997-2009

	1997	2000	2003	2006	2008	2009
Gross margins (%)						
Apple	21%	28%	29%	30%	35%	40%
Dell	23%	21%	19%	18%	18%	18%
Hewlett-Packard	38%	31%	29%	26%	24%	24%
R&D/Sales (%)						
Apple	12%	5%	8%	4%	3%	3%
Dell	1%	2%	1%	1%	1%	1%
Hewlett-Packard	7%	5%	5%	4%	3%	2%

Source: Compiled from Capital IQ, accessed March 2010.

Note: All information is on a fiscal-year basis. Apple's fiscal year ends in September, HP in October, and Dell in January.

Exhibit 6 PC Manufacturers: Worldwide Market Shares, 2000-2009

	2000	2002	2004	2006	2007	2008	2009
Hewlett-Packard[a]	7.8%	16.0%	15.8%	16.5%	18.8%	18.9%	20.3%
Dell	11.4%	15.1%	17.9%	16.6%	14.9%	14.7%	13.1%
Acer	—	—	3.6%	5.8%	7.9%	10.9%	13.0%
Lenovo[b]	—	—	2.3%	7.1%	7.5%	7.6%	8.5%
Toshiba	3.0%	3.2%	3.6%	3.9%	4.1%	4.8%	5.4%
Fujitsu Siemens	5.1%	4.2%	4.0%	—	—	—	—
IBM[b]	7.1%	5.9%	5.9%	—	—	—	—
Compaq[a]	13.0%	—	—	—	—	—	—
Packard Bell NEC	4.5%	3.3%	—	—	—	—	—
Apple	3.5%	2.3%	1.9%	2.3%	2.6%	3.4%	4.2%
Total shipments (in millions)	128.5	136.9	177.5	235.4	269.1	287.6	294.2

Source: "PC Market Still Strong in Q4 With Solid Growth Across Regions, According to IDC" (press release), IDC Press Release, January 16, 2008; IDC data, as cited in Scott H. Kessler, "Computers: Hardware" (industry survey), Standard & Poor's, April 26, 2007, p. 7, and in previous editions of that survey; Apple Inc. annual financial reports; and casewriter estimates. Data for 2009 based on preliminary figures reported in "Global PC Market Leaps Back to Double-Digit Growth in the Fourth Quarter, Led by a Record Quarter in the U.S., According to IDC," IDC Press Release, January 13, 2010.

Note: Market share data for Apple are derived from Macintosh unit sales, as reported in the company's annual reports. The sampling of market shares for other companies comes mainly from annual listings of the top five PC makers, as measured by IDC. Absence of a figure indicates that a company placed below the top five in a given year.

[a]Hewlett-Packard acquired Compaq in mid-2002. The 2002 market share figure for HP incorporates Compaq sales for the first part of that year.

[b]Lenovo acquired IBM's PC business in mid-2005. The 2005 market share figure for Lenovo incorporates IBM sales for the first part of that year.

Exhibit 7 Apple's Competitors: Selected Financial Information, 2000-2009 (in millions of dollars)

	2000	2002	2004	2006	2008	2009
Hewlett-Packard						
Total revenues	48,870	56,588	79,905	91,658	118,364	114,552
Cost of sales	34,813	41,457	60,621	69,178	89,370	87,198
R&D	2,627	3,368	3,563	3,591	3,543	2,819
SG&A	6,984	8,763	10,496	11,266	13,326	11,613
Net income	3,697	-903	3,497	6,198	8,329	7,660
Total assets	34,009	70,710	76,138	81,981	113,331	114,799
Total liabilities	19,800	34,448	38,574	43,837	74,389	74,282
Total shareholders' equity	14,209	36,262	37,564	38,144	38,942	40,517
Gross margin	28.3%	26.4%	23.9%	24.3%	24.2%	23.6%
R&D/sales	5.4%	6.0%	4.5%	3.9%	3.0%	2.5%
SG&A/sales	14.3%	15.5%	13.1%	12.3%	11.3%	10.1%
Return on sales	7.6%	-1.6%	4.4%	6.8%	7.0%	6.7%
Market capitalization[a]	66,896	57,764	58,405	110,546	85,461	119,532
Dell						
Total revenues	25,265	41,444	55,788	61,133	61,101	52,902
Cost of sales	20,047	33,892	45,897	49,462	49,998	43,404
R&D	374	464	458	610	663	624
SG&A	2,387	3,544	4,968	7,446	6,966	6,465
Net income	1,666	2,645	3,602	2,947	2,478	1,433
Total assets	11,471	19,311	23,252	27,561	26,500	33,652
Total liabilities	6,163	13,031	19,205	23,826	22,229	28,011
Total shareholders' equity	5,308	6,280	4,047	3,735	4,271	5,641
Gross margin	20.7%	18.2%	17.7%	19.1%	18.2%	18.0%
R&D/sales	1.5%	1.1%	0.8%	1.0%	1.1%	1.2%
SG&A/sales	9.4%	8.6%	8.9%	12.2%	11.4%	12.2%
Return on sales	6.6%	6.4%	6.5%	4.8%	4.1%	2.7%
Market capitalization[b]	123,194	90,572	68,195	44,640	20,193	28,485
Intel						
Total revenues	33,726	26,764	34,209	35,382	37,586	35,127
Cost of sales	12,650	13,340	14,301	17,164	16,742	15,566
R&D	3,897	4,034	4,778	5,873	5,722	5,653
SG&A	5,089	4,334	4,659	6,138	5,452	5,234
Net income	10,535	3,117	7,516	5,044	5,292	4,369
Total assets	47,945	44,224	48,143	48,368	50,472	53,095
Total liabilities	10,623	8,756	9,564	11,616	10,926	11,391
Total shareholders' equity	37,322	35,468	38,579	36,752	39,546	41,704
Gross margin	62%	50%	58%	51%	55%	56%
R&D/sales	12%	15%	14%	17%	15%	16%
SG&A/sales	15%	16%	14%	17%	15%	15%
Return on sales	31%	12%	22%	14%	14%	12%
Market capitalization	197,341	105,418	147,954	120,242	67,189	115,286

[a]Market capitalization figures for each company is based on the date the earnings were filed with the SEC.

[b]Dell's market capitalization figure for 2009 is from March 18, 2010 rather than the filing date.

	2000	2002	2004	2006	2008	2009
Microsoft						
Total revenues	22,956	28,365	36,835	44,282	60,420	58,437
Cost of sales	3,002	5,699	6,596	7,650	11,598	12,155
R&D	3,772	6,299	7,735	6,584	8,105	9,010
SG&A	5,176	8,095	10,640	12,276	16,587	16,296
Net income	9,421	5,355	8,168	12,599	17,681	14,569
Total assets	52,150	67,646	94,368	69,597	72,793	77,888
Total liabilities	10,782	15,466	19,543	29,493	36,507	38,330
Total shareholders' equity	41,368	52,180	74,825	40,104	36,286	39,558
Gross margin	87%	80%	82%	83%	81%	79%
R&D/sales	16%	22%	21%	15%	13%	15%
SG&A/sales	23%	29%	29%	28%	27%	28%
Return on sales	41%	19%	22%	28%	29%	25%
Market capitalization	322,651	258,967	295,667	257,724	235,364	212,163
Nokia (in million Euros)						
Total revenues	30,376	30,016	29,371	41,121	50,710	40,984
Cost of sales	19,072	18,278	18,179	27,742	32,935	27,569
R&D	2,584	3,052	3,661	3,897	5,922	5,879
SG&A	2,804	3,239	3,175	3,980	5,515	4,963
Net income	3,938	3,381	3,192	4,306	3,988	891
Total assets	19,890	23,327	22,669	22,617	39,582	35,738
Total liabilities	9,082	9,046	8,438	10,649	25,374	22,650
Total shareholders' equity	10,808	14,281	14,231	11,968	14,208	13,088
Gross margin	37%	39%	38%	33%	35%	33%
R&D/sales	9%	10%	12%	9%	12%	14%
SG&A/sales	9%	11%	11%	10%	11%	12%
Return on sales	13%	11%	11%	10%	8%	2%
Market capitalization	119,702	60,935	54,271	65,157	27,107	40,055
RIM						
Total revenues	85	294	595	2,066	6,009	11,065
Cost of sales	49	210	320	926	2,929	5,968
R&D	8	37	63	159	360	685
SG&A	14	94	108	314	881	1,496
Net income	10	(28)	52	375	1,294	1,893
Total assets	337	948	1,937	2,314	5,511	8,101
Total liabilities	26	71	215	319	1,578	2,227
Total shareholders' equity	311	877	1,722	1,995	3,934	5,874
Gross margin	43%	29%	46%	55%	51%	46%
R&D/sales	9%	13%	11%	8%	6%	6%
SG&A/sales	16%	32%	18%	15%	15%	14%
Return on sales	12%	-10%	9%	18%	22%	17%
Market capitalization	3,057	2,203	12,295	13,625	66,461	33,899

Source: Created by casewriter using data from Capital IQ, March 2010.

Note: All information is on a fiscal-year basis, unless noted otherwise. HP's fiscal year ends in October, Dell in January, Intel and Nokia in December, Microsoft in June, and RIM in February.

Exhibit 8 Worldwide Smartphone Sales to End User by Operating System, 2006-2009 (% of Total Market Share)

	2006	2007	2008	2009
Symbian	62.4%	63.5%	52.4%	46.9%
RIM	6.9%	9.6%	16.6%	19.9%
Microsoft	9.8%	12.0%	11.8%	8.7%
Mac OS X	NA	2.7%	8.2%	14.4%
Linux	17.6%	9.6%	7.6%	4.7%
Android[a]	NA	NA	0.5%	3.9%
Palm's WebOS[b]	NA	NA	NA	0.7%
Others	1.3%	1.1%	2.9%	0.6%

Source: Adapted from Gartner Smartphone Sales quarterly press releases between 2007 and 2009; "Gartner Says Worldwide Mobile Phone Sales to End Users Grew 8 Per Cent in Fourth Quarter 2009; Market Remained Flat in 2009," Gartner Press Release (Egham, UK, February 23, 2010).

[a]Android was introduced in 2008; data prior to that year is not applicable.

[b]Palm's WebOs was introduced in 2009; data prior to that year is not applicable.

Exhibit 9 Overview of Smartphone Operating Systems and App Stores (as of March 2010)

Operating System	Owner	Major Handset Vendors	Licensing Fee	App Store	Approximate Number of Available Apps
Symbian	Nokia	Nokia, Sony Ericsson, and Samsung	No	Ovi Store	NA
Mac OS X	Apple	Apple	Proprietary	App Store	185,000
Blackberry	RIM	RIM	Proprietary	BlackBerry App World	6,000
Windows Mobile	Microsoft	HTC, Samsung, LG. Sony Ericsson	Yes	Windows Marketplace for Mobile	700
Android	Open Handset Alliance	HTC, Motorola, Samsung	No	Android Marketplace	30,000
Palm Web OS	Palm	Palm	Proprietary	Palm	2,100
MeeGo	Nokia, Intel	Nokia	No	Ovi Store	NA

Source: Created by case writer based on various public sources.
Note: NA = Not Available or Not Applicable.

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