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Apple and Nokia: The Transformation from Products to Services

In the mid- to late 2000s, Nokia flourished as the world's dominant mobile phone – and mobile phone operating software – producer. Founded in 1871 originally as a rubber boots manufacturer, by 2007 Nokia produced more than half of all mobile phones sold on the planet, and its Symbian mobile operating system commanded a 65.6 percent global market share.¹ But within half a decade, Nokia would falter and be surpassed in the smartphone market not only by Apple's revolutionary iPhone but also by competitors including Google and Samsung. And in September 2013, Nokia would sell its mobile phone business to Microsoft for \$7 billion.² Apple literally came out of nowhere – it sold exactly zero mobile phones before the year 2007 (the year Nokia held more than half of the global market share) – but by the first quarter of 2013, Apple had captured almost 40 percent of the US smartphone market and over 50 percent of the operating profit in the global handset industry.³ In fiscal year 2013, Apple would sell five times more smartphones than Nokia: 150 million iPhones compared to Nokia's sales of 30 million Lumia Windows phones.⁴ In contrast to Nokia, Apple realized it wasn't just about the mobile device itself, it was about leveraging software to create a platform for developing compelling mobile experiences – including not just telephony but also music, movies, applications, and computing – and then building a business model that allows partners to make money alongside the company (e.g., Apple's iTunes and AppStore) and, in so doing, perpetuate a virtuous cycle of making the iPhone attractive to customers over multiple life cycles through ever-expanding feature sets. In short, while Nokia was focused on manufacturing

technologically superior products (i.e., feature-rich mobile phones), Apple surpassed Nokia by developing a superior product-service ecosystem.

But at its core, the Apple versus Nokia story is one about which company was hungrier to innovate, particularly by introducing new innovations in technology, business models, and customer experiences. Apple innovated from the iPod – the breakthrough mobile MP3 player that resurrected the Apple franchise with its introduction in 2001 – to the iPhone because it feared that an existing mobile phone manufacturer would add music download and listening functionality to its mobile phones, a marriage that would largely obviate the need for an iPod. Concerned that a competitor would do so, Apple risked cannibalizing its own iPod product with the introduction of the iPhone before someone else could do so. As Michael Saylor explains, “In 2005, riding the success of the iPod, Steve Jobs was worried. He had seen how camera phones had shriveled the digital camera market, and worried that phones with music players could undermine the iPod. He also realized that most cell phones were cheap, hard to use, and ‘brain dead.’ So he set about creating a better one.”⁵

To be sure, Nokia was a firm that had long prided itself on radical, even category-creating, innovation – along with a storied history of reinvention itself. A diverse industrial conglomerate through the first half of the 20th century, Nokia moved into networking equipment in the 1960s and introduced its first mobile phones in the 1970s. By the early 1990s, Nokia decided to concentrate solely on telecommunications, divesting itself of all non-telecommunications businesses, including rubber, cable, and other consumer electronics. In 1992, new Nokia CEO Jorma Ollila created a radical strategy that restructured the organization, focusing away from the current mobile users of the time (business people) and toward younger consumers.⁶ There was little emphasis on price. At the time, this represented a radical and brave step away from the conventional niche business user toward a mass-market, mainstream culture, and it resulted in Nokia’s share price soaring 2300 percent during the first eight years with Ollila as CEO. As noted, Nokia rode that success in the mid-2000s, to become the world’s largest mobile phone manufacturer.⁷ From a value-driven service perspective, by identifying a potential new market – the mainstream consumer – Ollila restructured the organization around both the broad services marketing required to cultivate the brand and connection with the consumer, as well as the operational platform required to build in the mass customerization of the product. The supporting network (the service system) followed the increase in sales and grew accordingly.⁸

But Nokia ran into severe trouble by the early 2010s, particularly because its thinking was dominated by a “phone-first” paradigm that failed to quickly enough adapt to a mobile ecosystem approach combining hardware, operating systems, and applications. To be sure, Nokia continued to innovate brilliant technical features in its mobile devices – Nokia phones were in fact often among the first to introduce novel features, including touchscreen, cameras, WiFi, wireless charging, etc. – but Nokia failed to innovate either in its business model or by introducing radically differentiated customer experiences. Or, as *IHS Screen Digest* analyst Daniel Gleeson puts it, “Nokia’s emphasis was on incremental innovation of existing products rather than aggressively pushing a disruptive innovation.”⁹ In other words, having innovated radically once, Nokia then retreated to a more comfortable state, developing technologically improved products on the same basis but not radical new products and services.

The following tells the tale of the Apple versus Nokia story along the nine dimensions of the Service Innovation Triangle. As Figure 9.1 shows, Apple bested Nokia on virtually every element of the Service Innovation Triangle, with the exception of financial assets, in which the two firms started at parity.

Customer experiences

The Apple versus Nokia story is ultimately one of companies leveraging technology to create compelling customer experiences and being able to monetize those through an effective business model. In fact, Nokia’s initial success arose largely because it reframed the market space away from a singular focus on the business customer and toward a younger consumer, providing them with an alternative to their parents’ landlines. Nokia’s hip mobile phones focused on brand image, with a lot of customization possible, extra functionality, and a robust product that could withstand being in someone’s back pocket in a Finnish nightclub.¹⁰ Nokia made substantial customization possible by enabling users to encase their Nokia phones in personally designed cases. This was in fact a lesson Nokia learned from the extensive customization Swatch made possible for customers of its watches. This insight led Nokia to see the mobile phone as a fashion accessory. In fact, so popular was Nokia’s iconic Nokia 1100 phone that it was once described as “the most popular phone ever.”¹¹ By 2006, Nokia stood head and shoulders above all rivals in customer satisfaction scores.

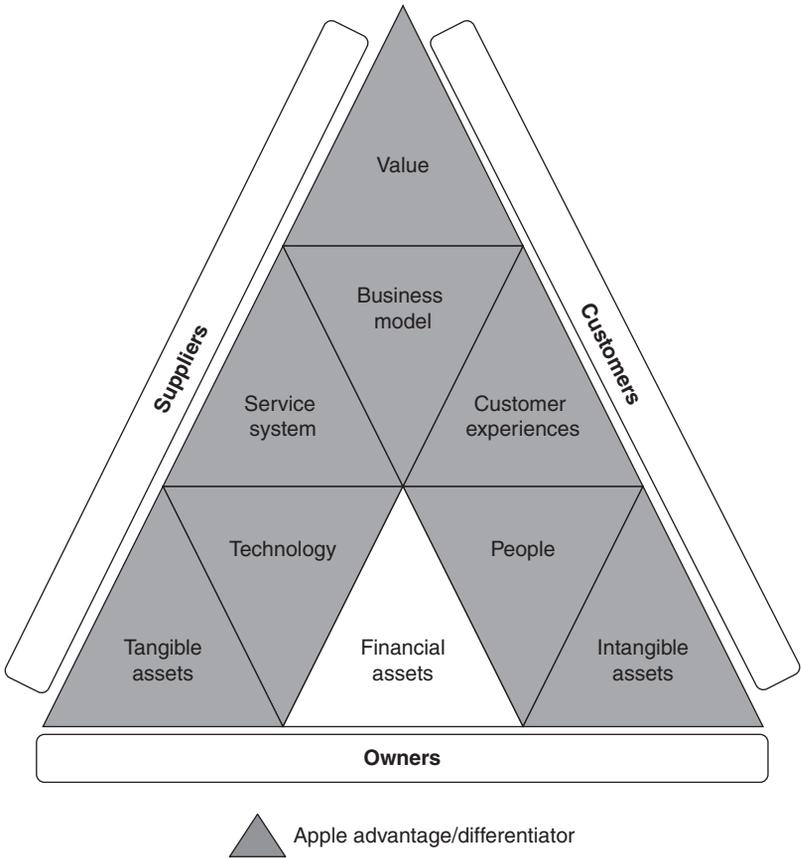


Figure 9.1 Comparing Apple to Nokia on the Service Innovation Triangle

But, as Ryan Kim notes, Apple’s introduction of the iPhone in 2007 “changed everything.”¹² The iPhone offered a striking user experience. Its revolutionary touchscreen interface eliminated keys and menus. It knew its physical orientation and flipped its screen from vertical to horizontal depending on how it was held – a startling experience at the time. It offered unfettered access to the Internet. Connected to iTunes, it offered access to its owner’s complete music library. It connected via the AppStore to thousands of unique, value-added applications. And the iPhone offered all this with an intuitive, elegant design and seamless customer experience. As José Avalos, Worldwide Director of Intel’s Retail

and Digital Signage business, notes, “I think what Apple has done is really focus on what I call ease of joy, which is not only making the experience easy to use or the device easy to use but also making the experience of using the device enjoyable.”¹³ Apple had achieved what Steve Jobs had set out to accomplish: build a phone that he would want for himself as a customer.¹⁴

While even now Nokia has retained a loyal following, it's clear it never recovered from the competitive jolt delivered by Apple's iPhone. So much was vividly reflected in a 2010 UK customer satisfaction survey. It found that – even among Nokia owners who stated that they wanted their next phone to be a Nokia – these Nokia phone owners *were not willing to recommend* Nokia to friends; they were, in effect, *ashamed to own Nokia*.¹⁵ By 2011, one study found that only three out of every five loyal Nokia smartphone users five years earlier still supported Nokia.¹⁶ Nokia had once made the must-have phones; by 2011, few Nokia owners were recommending Nokia phones to their friends. That's a stark contrast to Apple's devoted base of followers, with whom iPhones command a retention rate of 91 percent.¹⁷ In fact, Apple has ranked highest in customer satisfaction nine consecutive times. As John McCray, Juan Gonzalez, and John Darling conclude in “Crisis Management in Smart Phones: The Case of Nokia versus Apple,” clearly “Nokia fell behind Apple in the development of total capability to deliver a user experience equal to the Apple iPhone.”¹⁸

Business model

Nokia's business model revolved around selling mobile devices – and, for a time, its Symbian mobile operating system (OS). Having the ability to design its own mobile operating software was actually a key source of comparative advantage for Nokia, and could have positioned the firm well to develop the software that would better support the applications and content downloads that would help make the iPhone so attractive to consumers. But Nokia's real challenge, as *The Economist* explained, was that, “Today's smartphone business is less about specific devices than about ‘ecosystems,’ a combination of hardware, operating system, and applications. This is where Nokia and RIM have lost out: their ecosystems have been sidelined by Apple's iPhone and by Android, an operating system orchestrated by Google. These two platforms have attracted the most developers, investors, and users.”¹⁹

As then-Nokia CEO Stephen Elop acknowledged in his now-famous “Burning Platform” memo of February 2011, “The battle of devices has now become a war of ecosystems, where ecosystems include not only the hardware and software of the device, but developers, applications, e-commerce, advertising, search, social applications, location-based services, unified communications and many other things. Our competitors aren’t taking our market share with devices; they are taking our market share with an entire ecosystem.”²⁰ As he continued, “the better products are losing out to the better ecosystems.” But Nokia made at least three major mistakes: it failed to recognize the competitive challenge posed by Apple’s iPhone and how it signaled a shift to software as a key differentiator for phones; it failed to continue, and ultimately abandoned, its mobile operating software; and it fundamentally never evolved its business model beyond selling mobile devices to include a diverse revenue stream derived not only from device sales, but also content (e.g., music, video, book) sales and partner-generated application revenue.

Subsequently, strategically, as products such as Apple’s iPhone and Google’s Android began to squeeze Nokia in the smartphone segment (particularly in profitable North American markets, where Nokia held just a 2 percent market share in the second quarter of 2012),²¹ Nokia’s strategy turned to relying on profits generated by selling feature-phones (or “world-phones”) in developing countries, particularly to China, India, and African nations. For a time, Nokia would hold the largest market share in many of these emerging nations – for example, Nokia once held a 70 percent share of the Chinese smartphone market – but Nokia soon found itself embroiled in a low-price competition against lower-cost Chinese and Indian handset manufacturers such as HTE, Huawei, and G’Five.²² (This competition only intensified after MediaTek, a Taiwanese fabless semiconductor manufacturer, supplied complete reference designs for phone chipsets, which enabled manufacturers in the Shenzhen region of China to start producing phones at an unbelievable pace.²³) In short, Nokia lacked strategic clarity about which markets it wanted to serve globally. Nokia thus got caught in a multifront war, increasingly losing the high-end smartphone market to Apple’s iPhone and Google’s and Samsung’s Android-powered mobile devices, while also losing in the lower-end feature phone market in developing nations to lower-cost Asian manufacturers such as HTE.

Perhaps one of Nokia’s biggest strategic missteps was not adequately recognizing or reacting to the threat posed by Apple’s iPhone/iTunes/AppStore ecosystem until it was too late. As McCray, Gonzalez, and Darling write, “In 2001, when Apple iTunes 1.01 was introduced to

provide songs and video files for Apple computer users by downloading them from the Internet, it was apparently not clear to Nokia that they should react. Nokia did not apparently see the approaching crisis. Nokia's principal decision at that time was to produce better and cheaper mobile phones."²⁴ In fact, a total of seven critical years would pass before Nokia developed a similar site to iTunes, in 2008. As McCray, Gonzalez, and Darling write, after Apple's 2007 introduction of the iPhone, finally "Nokia saw the looming crisis," but it didn't have a response.²⁵ Within a year, Apple would become the world's leading smartphone maker. As McCray, Gonzalez, and Darling write, "With iTunes, the iPhone, and applications that would deliver Internet content directly to the iPhone, Apple established itself as the dominant producer of the most exciting new smartphone. Although Nokia had developed [the first] smartphones, it was unable to match the service provided by the iPhone in combination with iTunes and 1,000s of applications that had been developed to use the iPhone."²⁶ As then-Nokia CEO Elop would lament in his "Burning Platform" memo, "The first iPhone shipped in 2007, and we still don't have a product that is close to their experience."²⁷

As analysts with investment firm Piper Jaffray presciently noted, Apple's iPhone (and Google's Android) presented Nokia with "a fundamental identity problem."²⁸ As they wrote in a 2010 investment memo, "Software is what fuels interest in Apple and Android devices. Google is clearly a software company focused on making Android a great mobile OS. Apple is clearly a software company focused on making a great mobile OS and [taking] it a step further by providing integrated hardware. We view competitors like Nokia and RIM as hardware companies that are dabbling in software."²⁹

Of course, the great irony in that statement was that, for years, Nokia's Symbian had been the dominant mobile phone operating system, capturing a 65.6 percent share of the global mobile OS market in 2007. But by February 2011 – and even at a time when Nokia's Symbian still commanded 36.6 percent of the global mobile OS market – Nokia abandoned Symbian as part of a partnership with Microsoft that would task the Redmond-based company with developing operating software for Nokia phones going forward.³⁰ With that, the Windows Phone operating system was chosen as the new platform for Nokia smartphones.

So why did Nokia abandon the operating system? In part, Symbian had originally been designed to run on phones with modest technical requirements and it had not been designed to support touchscreens.³¹ As Elop observed in his "Burning Platform" memo, Symbian "has proven to be non-competitive in leading markets like North America. Additionally,

Symbian is proving to be an increasingly difficult environment in which to develop to meet the continuously expanding consumer requirements, leading to slowness in product development and also creating a disadvantage when we seek to take advantage of new hardware platforms.”³²

But none of this was a surprise, which was why Nokia had started to develop a new operating system called MeeGo in 2007. MeeGo was to be a Linux-based, open-source operating system that could support a variety of platforms including mobile phones, tablet computers, entry-level desktops, and even in-vehicle infotainment devices. MeeGo supported Nokia’s N9 mobile phone, released in September 2011, which received the strongest positive reviews of any Nokia phone ever and which actually bested Apple’s iPad for the Best Product Design of 2012 in the Yellow Pencil awards (known as the “Oscars for design”).³³ But the N9 would be the only MeeGo-supported phone Nokia ever produced, with the company switching to the Windows Phone OS in 2011.³⁴ As Sampsa Kurri, founder of the respected Finnish technology blogsite *Muropaketti* concludes, “In the end, Nokia tried to get other manufacturers on board in developing the MeeGo ecosystem. However, there were no interested parties and Nokia was left alone. In the war of the ecosystems, breaking into the North American market without LTE support and proper support from other manufacturers and operators would have been an impossible task for Nokia.”³⁵ While Kurri praised the MeeGo development team’s work, he noted that “MeeGo development had been disorganized” for several years and that “the technology was developed in various teams, which did not communicate with one another.” In short, while MeeGo could have been a game-changer, it got to market too late, full of “good ideas that were too late to implement as compared to products from more nimble competitors.”³⁶ Put simply, perhaps Nokia’s biggest strategic blunder lay in not transitioning quickly enough from its Symbian to its MeeGo operating system, and then subsequently abandoning its own platform and moving to Microsoft’s operating system. Further, in part because Nokia’s operating system was in flux, application developers had been slow to develop applications for Nokia phones, helping to explain why Nokia’s Ovi (its version of Apple’s AppStore) consistently lagged in the number of applications available for download. On May 16, 2011, Nokia announced it would discontinue the use of the Ovi brand, the name it has used for its services offerings since 2007.³⁷ Many of the application developers moved on to developing applications for Google’s Android – and Apple’s iPhone/iPad.

Whereas Nokia’s business model predominantly centered on selling mobile devices (whether “smartphones” in developed economies or

“feature phones” in developing ones), Apple distinguished itself by building a comprehensive product-service ecosystem featuring the iPod, iPhone, iPad, iTunes, Macintosh computers, and the AppStore, which encourages cross-sales and enables Apple to earn revenues from both products and services. Apple’s compelling product-service ecosystem has enabled it to maintain a consistently profitable price point for its series of iPhones and iPads. For example, Apple earned gross margins of 49–58 percent on its US iPhone sales from April 2010 to March 2012, while it enjoyed gross margins of 23–32 percent on sales of iPads in the United States over that time.³⁸ (The main difference in profitability between the iPhone and iPad tends to be the cell phone contract and the subsidies the mobile phone networks pay Apple for each handset; in contrast, the mobile phone operators don’t subsidize iPad sales.³⁹) For the 2013 fiscal year, the iPhone generated astounding net sales of \$91.3 billion, accounting for 53 percent of Apple’s revenues (iPads contributed 17 percent), up from 51 percent in 2012, and 43 percent in 2011.⁴⁰ iPhones contributed more than half of Apple’s revenues in every quarter of 2013.

But, of course, Apple does not just generate profits from the sale of high-margin-generating devices. Apple’s “open innovation” approach to iTunes and the AppStore – Apple permits AppStore application developers to net 70 percent of the revenues they generate while keeping just 30 percent for itself – allows others to monetize the Apple platform and in the process generates more revenues for Apple itself. In fact, there are now over 1 million AppStore applications.⁴¹ In 2013, Apple’s customers spent \$10 billion through the AppStore, with the company now generating roughly \$1 billion in customer spending per month through the AppStore.⁴² Apple reports that its developers have earned over \$15 billion since the AppStore was launched in July 2008, while *Forbes* estimates that Apple has recognized \$6.4 billion in profits since the AppStore’s launch.⁴³ More than 60 billion applications have been downloaded from the AppStore.⁴⁴ For its part, iTunes controls a 63 percent share of the US digital music market.⁴⁵ Users have downloaded 25 billion songs from Apple’s iTunes, 15 billion of those in the past three years.⁴⁶ Apple’s iTunes/Software/Services revenue line has grown every single quarter but one since 2011, with Apple doubling its quarterly revenue from iTunes/Software/Services from \$2.15 billion in the first quarter of 2011 to \$4.26 billion in the last quarter of 2013. Apple generated \$16 billion from this business line in fiscal year 2013.⁴⁷

Apple has also achieved an advantage by producing just one phone model at a time (akin to Southwest Airlines, which reduces aircrew

training and maintenance costs by flying a single type of aircraft), in contrast to competitors such as Nokia that have introduced and had to support multiple devices simultaneously. As Matt Murphy, a partner at the Silicon Valley venture capital firm Kleiner Perkins Caufield & Byers, notes, “Going all in one product and executing flawlessly has been a huge advantage” for Apple.⁴⁸

Another often overlooked element of Apple’s business model (elaborated on in more detail in the Tangible Assets section) has been its path-breaking success in introducing a direct-to-consumer retail channel through its Apple stores. Amazingly, Apple generates more revenues per square foot in its retail stores than does Tiffany’s.⁴⁹ Apple’s 432 global retail stores hauled in \$20 billion in revenue in fiscal year 2013, atop \$19 billion the prior year.⁵⁰

One final point about Apple’s business model: the company has more direct customer billing relationships than any other company. As of June 2013, Apple boasted 575 million iTunes accounts, was adding a half million new accounts on average each day, and was on track to add 100 million new iTunes accounts in the year 2013 alone.⁵¹ By July 2014, iTunes reached 800 million global account holders.⁵² As Morgan Stanley analyst Katy Huberty points out, Apple’s number of global accounts is now second only to Facebook’s 1.3 billion – but Apple has their credit card information (since users provide it when registering for iTunes), meaning that Apple has more direct customer billing relationships than any company in the world.⁵³ In terms of revenue per account, Morgan Stanley found that Apple generates an average of \$329 per user, placing it first among technology companies, ahead of Amazon’s \$305 per account, and eBay’s third-place \$125.⁵⁴ Moreover, Apple generates \$95 of free cash flow per account, almost five times larger than the \$23 eBay generates and ten times more than the \$9 Amazon generates.⁵⁵ Huberty argues that this impressive install base will enable “Apple to roll out new platforms in the same vein as iTunes” in coming years. She suggests that Apple could generate more than a billion dollars per year with an “iRadio” service and notes that the potential inclusion of a fingerprint sensor in Apple’s next iPhone could set the stage for e-wallet payments.⁵⁶ In other words, Apple’s tremendous install base of customers now represents a tremendous platform for innovation. Finally, it’s worth noting that, at Apple stores, Apple now uses the iPhone to process credit card purchases of Apple products. When your firm has literally invented a device that sells itself, that’s an impressive business model.

In conclusion, as noted at the outset of this section, today’s smartphone business is less about specific devices than about

ecosystems – combinations of hardware, operating systems, and applications. Nokia fell behind because its ecosystem was bested by Apple's iPhone and Samsung/Google's Android, as these ecosystems attracted the most developers, users, and investors.⁵⁷ Apple has since leveraged that ecosystem to build a *variety* of profitable business models, including high-margin sale of digital devices and the creation of an iTunes/AppStore platform that allows musicians, application developers, and other content developers to make money alongside Apple.

Technology

Nokia always offered fantastically technologically feature-rich mobile phones: in fact, Nokia invented the smartphone. But one of Nokia's challenges was always that too much of its technological attention was devoted to the features of the phone itself. To be sure, Nokia's list of technological feats in mobile phone technology was remarkable. As Tomi Ahonen noted, "Between 2005 and 2008, Nokia's top end E-Series and N-Series phones, such as the N93, which came out with a QR reader, TV-out, and a 3x optical zoom, astonished the industry with phenomenal technology."⁵⁸ Nokia actually offered a touchscreen smartphone two years before Apple's iPhone. It offered the world's first mobile phone connected to the Internet, and it offered the first mobile phone outside of Japan to include Wi-Fi connectivity. And Nokia was actually the first mobile phone manufacturer to offer a gaming-oriented app store, bypassing the carriers – something that was actually the prototype for Apple's AppStore. Later, Nokia's Lumia 920 phones were among the first to offer wireless charging.

Yet, despite these strengths, by the late 2000s, Nokia began "to lose out on the innovation front" to Apple. As Ahonen notes, "while Nokia's N8 might have been attractive next to a[n] iPhone 3GS, it wasn't against the retina display iPhone4 ... a phone that (then) had the sharpest phone screen ever produced."⁵⁹ At the same time, in later years, Nokia phones that "once stood for exceptional quality that were durable, robust, reliable, and operationally sound" began to experience quality issues after Nokia's decision to outsource production to Eastern Europe resulted in "delays, problems, and dissatisfaction."⁶⁰

As noted, the groundwork for the success of Apple's iPhone truly lay in the technologies, user experience, and business model that Apple had cultivated with the iPod/iTunes system. As McCray, Gonzalez, and Darling write, "iPod/iTunes was a revolutionary Internet content platform that would provide books, music, movies, news, financial analysis,

college lectures, TV programs and other content.”⁶¹ Apple built upon these with the iPhone. The principal initial advantages of the iPhone were its overall breakthrough design, touchscreen, ability to leverage software applications through the AppStore, and ability to download content directly from the Internet. Of course, subsequent versions of the iPhone would introduce more breakthrough features such as the retina display and AirDrop.

In short, technology was a strength for both companies, but Apple did a better job connecting its technology to an ecosystem.

Service system

Though not without its fair share of hiccups, Apple has performed much better than Nokia at coordinating service operations behind the launch of its new iPhones and iPad products. Apple has made it a point to disclose price, carriers, and availability dates at the same time. Those details let consumers plan purchases, carriers plan marketing programs, and application developers schedule release updates.

In contrast, as it scrambled to catch up with Apple, Nokia took to announcing new smartphones (such as the Lumia 820 and 920) without stating when they would become available, where they could be purchased, or what they would cost.⁶² That frustrated mobile network carriers, consumers, and applications developers, for those details were vital to enabling consumers to plan purchases, carriers to plan marketing promotions, and applications developers to schedule application updates.⁶³ In 2013, Nokia also suffered from supplier shortages for key components in its Lumia line of mobile phones. As Ahonen writes, unfortunately Nokia became “[l]ate on delivering new products [with constant] apologies and delays.”⁶⁴ As Hakan Wranne, an analyst at Swedish banking group Swedbank, noted, “For Nokia, it is all about distribution now, and we get no answers on when these new devices will sell and which U.S. operators will market them.”⁶⁵ In part because some of the products were late in getting to market, in July 2012, Nokia announced it would take an approximately \$270 million “inventory allowance” related to excess component inventory, future purchase commitments, and an inventory revaluation related to its Lumia, Symbian, and one MeeGo device, the N9.⁶⁶ In his “Burning Platform” memo, Elop expressed frustration with Nokia’s delays in getting technologies to market, writing, “Chinese OEMs are cranking out a device much faster than ... the time it takes us to polish a PowerPoint presentation.”⁶⁷ In short, as the *Wall Street Journal* pointed out, Apple was forcing the

mobile industry to operate at much faster speeds, and firms such as Nokia had been unable to keep up.⁶⁸

Tangible assets

According to Steve Jobs, Apple initially became a retailer to increase its 5 percent market share of the US personal computer industry.⁶⁹ At the time, Jobs cited a study reporting that 95 percent of consumers did not consider Apple when purchasing a personal computer. As Jobs reasoned, “if only five of those remaining 95 people switch, we’ll double our market share,” and this actually led Apple to start planning a newspaper advertising campaign entitled “five down, 95 to go.”⁷⁰ Jobs felt he knew what customers wanted and that “the masses would turn to Apple, but only if he could speak directly to them” and that became an important impetus for Apple’s aggressive retail strategy.⁷¹

Yet Jobs embarked on Apple’s retail strategy “with a nervous board [of directors],” recalls Bill Campbell, a former Apple executive and later CEO of Intuit.⁷² To be sure, no consumer electronics manufacturer had previously built a successful direct-to-customer retail presence for itself. Critics derided Apple’s strategy of launching company-owned retail stores, the first of which opened in 2001, as a “risky cash drain.”⁷³ Analysts cited the high retail lease costs in major US cities like Chicago, New York, and Los Angeles, estimating that Apple would have to sell at least \$12 million worth of products per year at each store, an amount three times greater than then-competitor Gateway was generating per store. Moreover, Apple’s retail stores were expected to cannibalize business from resellers, leading to a potential channel rift between the company and its resellers.⁷⁴ As David Goldstein, President of the Channel Marketing Corporation, derisively commented at the time, “I give them two years before they’re turning out the lights on a very painful and expensive mistake.”⁷⁵

But Apple’s retail strategy has been wildly successful – and on a global scale. As of January 2014, Apple operates 432 retail stores in 14 countries and an online store (available in 39 countries), which together generated sales of \$20 billion in 2013. On average, each Apple store generates \$51.5 million in profit per year. Apple stores actually generate twice as many sales per square foot as Tiffany’s stores do, and they lead the US retail market in terms of sales per unit area.⁷⁶ So successful have Apple stores been that Chinese “entrepreneurs” even opened 22 fake Apple stores, unlawfully mimicking Apple’s brand and logo, to the extent that their employees wear (fake) Apple-branded shirts.⁷⁷

People

It's difficult to overstate the transformational role that Steve Jobs played in resurrecting Apple and conceiving the vision and strategy to bring the iPod/iTunes/iPhone/iMac/iPad ecosystem to reality. As Walter Isaacson writes in the biography *Steve Jobs*, Jobs was a true technology visionary who transformed at least six industries: personal computers, animated movies, music, phones, tablet computing, and digital publishing.⁷⁸ As University of Pennsylvania Wharton Business School Professor David Hsu argues, "In order to really come up with the radical innovations, there has to be some personality and vision as to what is the world going to look like in some five, ten years from now," and that's what Jobs excelled at.⁷⁹ Indeed, Jobs "humanized technology and made it work in wondrous ways that genuinely improved our lives."⁸⁰ At the same time, as Jeff Kowalski, the CEO of design software firm Autodesk, observes, while certainly Jobs managed a very difficult and challenging work environment, his managerial style often brought out the best work in his people. As Isaacson writes, Jobs was renowned for hiring only "A" performers and the very best IT personnel.⁸¹

But Apple's success was not Jobs' alone. Apple relied on a team of talented engineers, designers, and managers. And it's clear that Apple's location in the heart of Silicon Valley – along with a culture of experimentation and risk-taking – made it easier to acquire the very best software and engineering talent. In fact, at one point, Nokia had nearly as many engineers working on its smartphone software platforms as Apple had working on its entire product line.⁸² But Apple's ability to attract superior software engineering talent to Nokia wasn't confined only to its location in Silicon Valley. Indeed, there was a perception in the high-tech community that Apple offered a superior environment for risk-taking and financial reward, which "posed a challenge for Nokia's management in [their] attempts to hire software engineers."⁸³ As McCray, Gonzalez, and Darling elaborated:

Unfortunately for Nokia, the perception among individuals in the high-tech community was that firms such as Apple, Google, Yahoo, and the new Internet startups provided the best opportunities. The best and the brightest of these individuals were very astute, and very knowledgeable of new, emerging technologies and new product developments by various high-tech organizations. They preferred to work in an environment where personal and financial rewards were the greatest. They also desired a sense of excitement in their tasks and

activities, and were both collaborative and competitive in their quest to be at the forefront of technological innovation.⁸⁴

They continued:

The shift to smartphones that used an Internet platform similar to iTunes that would make Internet content available was not a good fit with the traditional Nokia corporate culture. Because of the need to develop software similar to iTunes, applications and smartphones, Nokia needed to compete in the overall high-technology community, where the best and brightest talent had always been attracted by organizations on the “cutting edge” with unsolved technical challenges.⁸⁵

Moreover, Nokia appeared to suffer from a risk-averse, consensus-based culture that lacked sufficient innovative and entrepreneurial spirit that left it simply unable to keep up with the rapid pace of digital innovation. As Lawrence Hrebiniak, a management professor at the University of Wharton noted, “Nokia was about consensus building and the boardroom is conservative.”⁸⁶ Indeed, Nokia had a complacent, overly bureaucratic structure with poor accountability. Strategic decisions made by senior managers in one part of the firm were often canceled out by decisions made by other managers, and this left Nokia ill-prepared to develop a coherent response to the challenges posed by competitors like Apple, Google, and Samsung.⁸⁷ As Kurri explained in his account of the history of MeeGo, “Everyone inside Nokia had their opinion on MeeGo... towards the end the individual developers had no say in, or even worse, no knowledge about, the decisions and changes taking place in the background.”⁸⁸ Elop picked up on these themes in his “Burning Platform” memo, stating, “I believe we have lacked accountability and leadership to align and direct the company through these disruptive times. We haven’t been delivering innovation fast enough. We’re not collaborating internally.”⁸⁹

When it came to retail, Apple was also thoughtful to create a unique approach to hiring talent in its retail stores. Apple tended to hire employees who were already enthusiastic fans of Apple’s brand, and sought to hire individuals who were very passionate about what they were selling.⁹⁰ Apple also carefully trained its employees, assigning new sales associates to watch podcasts explaining sales techniques and to shadow more experienced salespeople while they executed the company’s three-step sales process: position, permission, and probe.⁹¹ Apple’s

retail workforce was also taught to work together as a team, recognizing that dissension among sales associates provided a poor sales experience for customers. Finally, “Apple flooded the retail zone with employees,” knowing that sales and profits were lost with every minute customers spent waiting for help.⁹²

After picking up the reins from Steve Jobs, Apple CEO Tim Cook has implemented new employee retention mechanisms in the company. For example, Apple’s “BlueSky” program allows engineers to work on their own favorite projects on company time.⁹³ It also implemented a dividend on unrestricted stock units awarded to employees.

Intangible assets

According to Interbrand, as of September 2013, Apple moved past Coca-Cola to become the world’s most valuable brand, valued at \$98 billion.⁹⁴ Nokia is now part of Microsoft, which checked in with the world’s fifth most valuable brand in 2013.⁹⁵ But it’s clear that Nokia’s once powerful brand in later years became somewhat of a liability. As Kartik Hosanagar, an operations and information management professor at the University of Pennsylvania’s Wharton Business School, noted in 2010, “When you think of Nokia, you think of reliable but somewhat boring phones. Cool smartphones with great apps don’t come to mind at all. Nokia needs to rebrand itself.” As his colleague Hrebiniak noted, “The Nokia brand doesn’t imply smartphones. It’s that simple. Nokia has to figure out how to add value [in a market where] user experience is the differentiator.”⁹⁶

Value

Apple has delivered tremendous value for customers, shareholders, and society. From 2005 to 2012, Apple’s sales increased 11-fold and its profit 31-fold.⁹⁷ In 2011, Apple’s revenue of \$76.4 billion was so large that it surpassed the US government’s operating cash balance of \$73.7 billion.⁹⁸ But what of Apple’s future in the post-Jobs era? And can Apple put its tremendous cash reserves to the service of future innovation, or will the reserves be consigned to stock repurchases (Apple’s \$60 billion stock buyback in 2013 was the largest in history) and acquisitions of smaller innovators (such as Apple’s \$3 billion acquisition of Beats Electronics)? As Figure 9.2 shows, Apple has long been one of the least R&D-intensive of the leading information technology companies. In fact, with an R&D/sales ratio of just 2.8 percent from 2007 to 2012, Nokia was actually

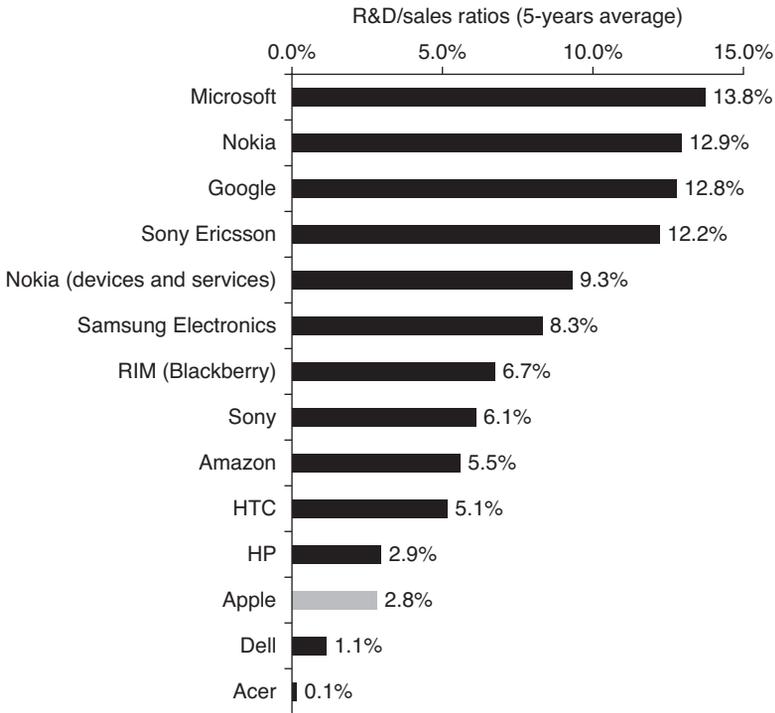


Figure 9.2 Leading ICT companies' R&D/sales ratios⁹⁹

Source: Mazzucato, M. (2013). *The entrepreneurial state: debunking public versus private sector myths* (London: Anthem Press).

three times more R&D-intensive than Apple. Amazon has invested much more in R&D as a percentage of its sales than Apple.

What explains Apple's ability to outpace competitors in introducing innovative products despite its relatively low rate of R&D? While some have argued it's a result of superior R&D productivity, the reality is that Apple's strength has lain not in *developing* new technologies and components, but in *integrating* them into an innovative architecture and connecting them to a powerful product-services ecosystem.¹⁰⁰ As Mariana Mazzucato writes in *The Entrepreneurial State*, the iPod, iPhone, and iPad were made possible by 12 key enabling technologies: (1) microprocessors or central processing units (CPUs); (2) dynamic random-access memory (DRAM); (3) micro hard-drive storage disks; (4) liquid-crystal displays (LCDs); (5) lithium-ion batteries; (6) digital signal processing; (7) the

Internet; (8) HTTP and HTML; (9) cellular technology and networks; (10) global positioning systems (GPS); (11) click-wheel technology; and (12) artificial intelligence with voice user interface (e.g., Apple's SIRI).¹⁰¹ As Mazzucato argues, most of these technologies were developed not by Apple but by government-funded research at universities and national laboratories; Apple just did a phenomenal job of integrating (and improving) core technologies originally developed by others.

So the question is: Can Tim Cook's Apple continue to turn out category-defining products that maintain double-digit sales growth? Many are skeptical that Apple will be able to develop a new, must-have product in a fresh leap of innovation.¹⁰² Trip Chowdry, a managing director at Global Equities Research, argues that "The next ten years in the industry will be about people who have an idea and the ability to execute and defy odds. This belongs to people like Jeff Bezos, Elon Musk, and Larry Page – not Tim Cook. Apple cannot compete with Google. Apple lives in a mind-set that their main competition is still Google – they live in a relaxed environment."¹⁰³ For Apple's part, Eddie Cue, who runs Apple's iTunes division, argues that, "Later in 2014, we've got the best product pipeline I've seen in my 25 years at Apple."¹⁰⁴ Indeed, CEO Cook has promised that Apple will launch "amazing new hardware, software and services" and "exciting new products in 2014."¹⁰⁵ In March 2015, Apple introduced the iWatch, which featured a number of novel applications including the ability to make phone calls from the watch, an ApplePay mobile wallet, and a variety of personal health and fitness applications.¹⁰⁶ Some speculate that Apple may be preparing to make a major play in the automotive industry, with Apple's senior vice president of Operations Jeff Williams noting in May 2015 that "the car is the ultimate mobile device, isn't it."¹⁰⁷ Apple's potential opportunities in the automotive sector range from delivering content and entertainment solutions to the vehicle to even producing electric vehicles that could rival those of Tesla.¹⁰⁸

Will Apple be able to avoid Nokia's fate – or even a repeat of its own near-death experience in the late 1990s – in the future? Complacency is perhaps Apple's biggest threat, should it fail to continue to innovate and instead rely largely on milking revenue streams from already-developed products and services, protecting its margins while kicking back cash to investors. Maintaining one's position as the world's largest corporation is something that no corporation has ever been able to achieve. But if Apple holds true to its core tenets over the past decade – an intense focus on producing compelling, beautifully designed products that provide seamless and delightful experiences with a business model that

monetizes content and application delivery over these platforms (often enrolling third-party partners to cocreate the value added) – then Apple’s future remains very bright.

Conclusion

Apple developed a powerful product-service ecosystem connecting portable music players (iPod), mobile phones (iPhone), and mobile computing (iPad) with entertainment content (iTunes) and powerful applications (AppStore); whereas Nokia fundamentally proved unable to move beyond developing technologically feature-rich mobile phones and their operating software and a business model that focused predominantly on selling devices. Apple bested Nokia on eight of the nine elements of the Service Innovation Triangle – Customer Experiences, Business Model, Technology, Service System, Tangible Assets, People, Intangible Assets, and Value. Only with regard to Financial Assets were the two companies at parity.

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10 Amazon and Borders: From Sector Focus to Competence Focus

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