

# 2

## Explaining Apple's iPhone Success in the Mobile Phone Industry: The Creation of a New Market Space

**Abstract** Creating a new market space means redefining market boundaries to make competition irrelevant. Apple with its iPhone was able to redefine market boundaries mainly in two ways. First, it was able to look across substitute industries: the smartphone industry, the portable music industry, and the Internet communication device industry—three product categories that shared similar functionalities. Apple was the first handset vendor to perfectly integrate the core functions of these three product categories into a single device. Second, Apple looked across complementary product and service offerings by relying on a platform mounted on its other devices that brought together a broad ecosystem of app developers for its iPhone. This chapter discusses tools smartphone vendors can use to redefine market boundaries and examines the case of Apple's iPhone.

**Keywords** New market space · Competition · Business model  
Smartphone · Start-ups · Apple · iPhone

## 2.1 The Creation of a New Market Space

### 2.1.1 The Concept of Blue Ocean Strategy

The search for a new market space, or “blue ocean strategy,” is a concept that was initially developed by Kim and Mauborgne in 1999, and later refined in various publications by the two authors (e.g., Kim and Mauborgne 1999, 2004, 2005). The two authors started from the observation that most firms tend to converge along the same basic dimensions of competition (i.e., differentiation or low cost) because consider their competitive arena the industry as a whole or a “strategic group,” i.e., a group of firms undertaking similar strategies (Porter 1980). The result is that most firms have in mind the same consumer targets, and this makes the competition even fiercer. Creating a new market space, what Kim and Mauborgne also called a “blue ocean strategy,” requires a different type of strategizing. The authors suggest that firms should not look within the accepted boundaries that define how they compete. Firms should instead look systematically across these boundaries. By doing so, they can find unoccupied market spaces that can generate new demand not currently served by any other firm.

The authors use the metaphor of a market universe consisting of two types of oceans: “red oceans” and “blue oceans.” Red oceans represent all existing industries, where the rules of competition are known and accepted by industry rivals. Blue oceans represent all the industries currently not in existence, and thus untapped market space characterized by unexplored demand creation, and the opportunity for highly profitable growth. Interestingly, as we will discuss later, blue oceans are not necessarily created beyond existing industry boundaries; in fact, most firms that are able to create a new market space find it from within red oceans by expanding existing industry boundaries.

Kim and Mauborgne (2005) observed that the firms that are able to create a blue ocean do not use competition as their benchmark but follow a new way of thinking that they call *value innovation*, i.e., the simultaneous pursuit of radically superior value for buyers and lower costs for companies. Therefore, value innovation goes against the most commonly accepted pillar proposed by the literature on competition:

**Table 2.1** Red ocean vs. blue ocean strategy

| Red ocean strategy  | Blue ocean strategy   |
|---|---|
| Compete in existing market space  | Create uncontested market space   |
| Beat the competition  | Make the competition irrelevant   |
| Exploit existing demand   | Create and capture new demand   |
| Make the value-cost trade-off   | Break the value-cost trade-off  |
| Perform value chain activities with the aim of pursuing differentiation or low cost | Perform value chain activities with the aim of pursuing differentiation <i>and</i> low cost |

Source Adapted from Kim and Mauborgne (2005)

the value-cost trade-off (Porter 1985), namely the idea that companies can either create greater value for customers at a higher cost, e.g., pursuing differentiation by means of greater R&D and marketing expenditures, or create reasonable value at a lower cost. In contrast, those that seek to create blue oceans often pursue differentiation and low cost simultaneously. Cost savings are obtained by eliminating and reducing the factors an industry competes on, while buyer value is enhanced by raising and creating elements the industry has never offered.

Table 2.1 illustrates the key differences between a red ocean and a blue ocean strategy.

## 2.1.2 The Six Paths to Reconstruct Market Boundaries

The main principle of the blue ocean strategy is that firms can create a blue ocean where competition is irrelevant by reconstructing market boundaries. Kim and Mauborgne (1999) identified six basic approaches to redefine market boundaries, which they call “the six paths framework.” These six paths for creating a blue ocean strategy present remarkable differences from the classical idea of head-to-head competition, as synthesized in Table 2.2.

### 2.1.2.1 Path 1: Look Across Substitute Industries

The first path for reconstructing market boundaries is to *look across substitute industries*. In fact, a focal firm competes not only with the other firms in its own industry, but also with firms from other industries that

**Table 2.2** From head-to-head competition to blue ocean creation

|                                      | Head-to-head competition   | Blue ocean creation (the six paths framework)                 |
|--------------------------------------|--|---|
| Industry                             | Focuses on rivals within its industry  | Looks across substitute industries                            |
| Strategic group                      | Focuses on competitive position within strategic group   | Looks across strategic groups within industry                 |
| Buyer group                          | Focuses on better serving the buyer group  | Redefines the industry buyer group                            |
| Scope of product or service offering | Focuses on maximizing the value of product and service offerings within the boundaries of its industry | Looks across complementary product and service offerings      |
| Functional-emotional orientation     | Focuses on improving price performance within the functional-emotional orientation of its industry     | Rethinks the functional-emotional orientation of its industry |
| Time                                 | Focuses on adapting to external trends as they occur   | Participates in shaping external trends over time             |

Source Adapted from Kim and Mauborgne (1999, 2005)

sell products or services sharing similar functions with the product or service of the focal firm. These products (or services) are also called “substitutes” or “substitutors” and are said to be “functionally similar” to the focal firm’s product (Peteraf and Bergen 2003; Porter 1980). Still, firms rarely think consciously about how their customers make trade-offs across substitute industries. Looking across substitute industries for a focal firm means to develop a new product or service that serves both the needs of customers in its focal industry and the needs of customers of firms in those other industries that produce substitute products or services.

As we will discuss in greater detail in the second part of this chapter, a firm that was able to create a revolutionary product by looking across substitute industries was Apple with its iPhone. When the iPhone was introduced in 2007, Steve Jobs (co-founder, chairman, and chief executive officer of Apple Inc.) positioned the product as a high-end device

equipped with smartphone capabilities, music player capabilities, and Internet communication capabilities. Although smartphones capable of surfing the Internet and offering music player functions were already in existence, none of them offered a good user experience in terms of these two functions, and in fact, users tended to use separate devices (portable computers and MP3 players) to satisfy those specific needs. The iPhone perfectly integrated the smartphone, music player, and Internet communication functions into a single device.

### **2.1.2.2 Path 2: Look Across Strategic Groups Within Industries**

The second path for reconstructing market boundaries is to look across strategic groups within a given industry. A strategic group is a group of firms pursuing similar strategies (Porter 1980). For example, two of the most used strategy variables to identify strategic groups within a technology-based industry are “price” and “the extent to which a product offers advanced functionalities” (D’Aveni 2007). The two variables are likely to be highly positively correlated so that each jump in price tends to bring a corresponding jump in technological advances. Therefore, we are likely to observe a strategic group comprising firms offering cheap products with basic features targeted at the low-end market, and a strategic group with technologically advanced products that are relatively expensive targeted at the high-end market. Usually, firms focus on excelling over one another in their strategic group, without paying much attention to what firms in other strategic groups are doing. That is because competing in a strategic group may require very specific resources and capabilities. The key to creating a blue ocean across existing strategic groups is to break out of this narrow tunnel vision by understanding which factors determine customers’ decisions to trade up or down from one group to another.

A firm that was able to create a new market space by looking across strategic groups was the Chinese mobile phone vendor Xiaomi, which will be examined in detail in Chap. 3. Xiaomi launched its first smartphone, the Mi 1, in 2011. Mi 1 had the same specs of the other premium smartphones in the market, but it was sold at half the price

of the Apple's iPhone. This was possible thanks to an innovative business model that allowed the company, for example, to save on R&D expenditures by co-creating with Xiaomi fans on social networks and save on communication and distribution costs, since the company sold its products exclusively online and relied only on social media advertising.

### 2.1.2.3 Path 3: Look Across the Chain of Buyers

A third path for reconstructing market boundaries is to look across the chain of buyers. The idea here is that in most industries, rivals share a common belief about who is the target consumer. Still, often there is a chain of “buyers” who are directly or indirectly involved in the purchasing process. The *purchasers* who pay for the product or service may differ from the actual *users*, and, in some cases, there are important *influencers* as well. As often happens, a firm is not able to discern which individual across the chain of buyers its product should be targeted at.

Consider, for example, how the Canadian Research in Motion (RIM) with its BlackBerry smartphones shifted the target customer of the smartphone from geeks and professionals to “companies purchasing smartphones for their employees.” The first smartphones were introduced by Nokia at the end of the 1990s and were equipped with GEOS operating system and later with Symbian OS (Giachetti and Marchi 2017). These were advanced operating systems as they offered users some PC-like functionalities, including access to Internet pages, some application downloads, and access to the user's email account. These smartphones were indeed targeted at geeks and professionals, the former interested in the latest technological advances, the latter interested in the business-oriented functionalities mounted only on these devices, like email, calendar, agenda, and document viewer features. Still, although professionals, i.e., firm employees, were the favorite target customers of smartphones, professionals were usually *users* of these phones and not *purchasers*. In fact, these devices were often purchased by companies for their employees, and companies' priority interests were not necessarily the same as their employees. What companies cared most about was secure access to their email servers by employees. But since

there was no smartphone at that time allowing employees to securely access their email accounts while away from their office's desktop computers, many companies forced employees to check their email account only from the office. RIM was able to create a new market space by looking across the chain of buyers and understanding earlier than rivals that a corporate purchasing agent may be more concerned with enterprise data security than the corporate user, who is likely to be far more concerned with smartphone functionalities and their ease of use. Breaking away from traditional smartphones, at the beginning of the 2000s, RIM offered a new type of wireless handheld solution for enterprises. It created a new market space focused on delivering secure enterprise email access to employees while away from the office. Companies that adopted BlackBerry smartphones saved time and money because their employees could receive and send email practically anywhere and anytime without having to make trips back to the office. Most importantly, BlackBerry phones mounted a highly secure offering for companies because all emails and their contents could be protected behind their corporate firewalls. RIM offered software that the company could use to disable the BlackBerry smartphone from the company's central control server in case the device was lost or stolen. This secure communication offered by RIM helped attract elite users such as President Barrack Obama and the majority of corporate executives across the globe. Over the 2000s, sales and profits of RIM boomed.

#### **2.1.2.4 Path 4: Look Across Complementary Product and Service Offerings**

A fourth path for reconstructing market boundaries is to look across complementary product and service offerings. The basic idea here is that the reason why most products and services are able to satisfy certain consumer needs is because there are other products and services that affect their value. Still, in most industries, rivals tend to focus on refinement of core functions of their products, while the untapped value is often hidden in complementary products and services.

There are many examples of companies that have heavily relied on complementary products or services to create a blue ocean. As we will examine later in this chapter, before Apple's iPhone mobile "apps" were offered for information retrieval and agenda functionalities. Apple fostered the rapid diffusion of apps into other popular categories, such as social networks, mobile games, location-based services, banking, and ticket purchases, by focusing on a rapidly expanding ecosystem of developers producing applications working ad hoc on Apple's devices. This made the iPhone the ultimate "convergent" device, radically changing the mobile phone user's experience. Xiaomi, as we will examine in Chap. 3, sold its premium smartphones almost at the cost of production, but this was just a way to rapidly diffuse its platform,<sup>1</sup> MIUI, a customized version of Google's Android, that offered users access to a wide portfolio of paid apps customized for the Chinese market.

### **2.1.2.5 Path 5: Look Across Functional or Emotional Appeal to Buyers**

Some industries compete principally on price and functions largely on calculations of utility; their appeal is rational (e.g., DELL computers). Other industries compete largely on feelings; their appeal is emotional (e.g., Luis Vuitton bags). Yet the appeal of most products or services is rarely intrinsically one or the other. Still, Kim and Mauborgne (1999) observed that, over time, functionally oriented industries become more functionally oriented, while emotionally oriented industries become more emotionally oriented. When companies are willing to challenge the functional-emotional orientation of their industry, they often find a new market space.

A firm that was able to create a new market space by shifting the appeal to buyers from functional to emotional was Vertu, the first luxury mobile phone vendor, that will be examined in detail in Chap. 5. Vertu was born at the end of the 1990s as an internal Nokia start-up. Before Vertu entered the market in 2002, mobile phones were mainly functional products, and they were becoming increasingly functional thanks to the various technological advances that industry rivals struggled



to introduce every year and used as the main competitive weapon (Giachetti et al. 2016). Vertu, instead of looking within the accepted boundaries that defined the mobile phone industry and how to compete within it, found an uncontested market space by making the mobile phone a luxury emotional purchase. Its first phone models did not have a technological lead; they were probably as technologically advanced as most other decent feature phones. Still, they were made with exclusive materials and precious metals, assembled by just one person in England, and were equipped with exclusive services for the owner. For example, Vertu was the first handset vendor equipping its phones with a “concierge service,” offering to its affluent customers 24-hour worldwide assistance, recommendations, and priority booking. In the eyes of mobile phone consumers, there were no mobile phones designed as a jewel, except for Vertu; likewise, in the eyes of jewel consumers, and of luxury goods in general, there were no jewels with the features of a mobile phone, except for Vertu. By launching luxury mobile phones, Vertu had no direct competitors either in the mobile phone industry or in the luxury jewelry industry (and luxury industry in general).

A more recent case of a smartphone start-up that successfully challenged the functional appeal to buyers is the Amsterdam-based Fairphone, established in 2009 as an NGO aiming to raise awareness about the issue of “conflict minerals” (i.e., national resources that are mined in places impacted by conflicts and sold for funding arms groups, like coltan and wolframite in Congo) in mobile devices, and subsequently turned into a phone vendor aiming to get a better insight into ethical and sustainability issues of the whole mobile phone supply chain.<sup>2</sup> Fairphones, initially introduced in 2013, are mid-end smartphones in terms of technical features, but are sold at a price 20–30% higher than that of comparable mid-end devices. Still, the goal is not to compete on features, but to leverage the emotional appeal to buyers: purchase a phone produced with minimal harm to people and the planet. First, the start-up tackled the issue of conflict minerals by focusing on various projects to source traceable, conflict-free minerals directly from critical countries like Congo, and thus improve the mining practices and incomes of communities most affected by conflicts. Second, it works with a selected manufacturing partner in China

to improve working conditions in the factory. For example, it created the “worker welfare fund,” a separate legal entity in the factory financed by both Fairphone and the manufacturing partner, each funding \$2.5 per each phone sold, with the workers able to vote on how the money should be spent. Third, to reduce environmental impact, Fairphone phones not only are made with recycled materials, they are also designed to last longer than the rest thanks to a modular architecture that makes them very easy to repair by the user itself, who can purchase affordable spare parts directly from the company’s Web site. From 2013 to 2015, the start-up raised about €10 million with crowdfunding,<sup>3</sup> and hundreds of thousands of phones have been sold.

#### **2.1.2.6 Path 6: Look Across Time**

All industries are subject to external trends that affect their businesses over time. Think of the rapid diffusion of mobile phones from the beginning of the 1990s. Looking at these trends with the right perspective can reveal how a firm creates blue ocean opportunities. As for the mobile phone industry, most mobile phone vendors have adapted incrementally and somewhat passively to demand, technology, and regulatory changes over the industry’s evolution. Managers of most handset vendors asked themselves in which direction consumer demand, technology, and regulatory environment would evolve and how to adapt to these changes. But key insights into blue ocean strategy rarely come from projecting the trend itself. Instead, as suggested by Kim and Mauborgne (2005: 75), “they arise from business insights into how the trend will change value to customers and impact the company’s business model.”

For example, in the mobile phone industry at the beginning of the 1990s, Nokia understood before any other competitor that the mobile phone would become a product not only for business users, but also for everybody. Up until the beginning of the 1990s, handsets were niche, very expensive products based on analog standards, making the phone a device only capable of offering phone call functionalities. In the early 1990s, national authorities in various countries imposed the gradual introduction of the digital standard. Digital technologies were expected to improve the quality of the call signal, solve the incompatibility

of the heterogeneous analog standard used in various European countries, and expand the use of the phone to other domains (Giachetti and Marchi 2017). Nokia's ability to look across time better than its rivals was twofold. First, Nokia's management team understood before rivals that digital technology will fully substitute the analog one. In fact, Nokia was the first to heavily invest in digital phones: At the beginning of the 1990s, it carved out a blue ocean by offering mobile phones equipped with text-messaging services (SMS) and gaming functions, the first convergent devices for the mass market. Competitors like Motorola instead initially refused to abandon the analog technologies, but after realizing the worldwide market was moving toward digital, it was too late. Second, in the mid-1990s, Nokia's management team understood earlier than rivals that only with greater usability and excellent design handsets would become mass consumer products rather than mere network terminals. Instead of incrementally adapting to the occurring trend in the industry, Nokia was able to understand how the trend would change in value to handset users: Nokia was the first vendor to introduce handsets characterized by user interface friendliness, smaller size, and lower weight in order to facilitate portability, as well as innovative design thanks to the numerous collaborations with leading designers. The Finnish firm surpassed Motorola in 1998 and maintained a global market share leadership for nearly 15 years.

## **2.2 Examining the iPhone's Success Through the Lens of a Blue Ocean Strategy**

### **2.2.1 The Mobile Phone Industry in 2007, Before the iPhone Launch**

The second part of this chapter examines the iPhone's success through the lens of a blue ocean strategy. Before examining how Apple was able to create a new market space in the mobile phone industry with its iPhone, it is important to briefly describe the main actors operating in the mobile phone industry at the various levels of the supply chain or "value system" (Porter 1985).

### 2.2.1.1 Telecom Carriers

Telecom carriers, also called “mobile network operators,” offered wireless voice and data services by operating wireless networks and developing relationships with subscribers. In mid-2007, the telecom carrier industry was particularly concentrated, giving large operators significant power over other players in the value system. For example, telecom carriers typically required handset vendors to customize phones to work on their particular network.

Still, players in some countries were triggering price competition that was reducing revenues and profits which carriers had been able to raise from voice services and text-based short messaging services (SMS). Because of this increasingly competitive environment threatening telecom carriers’ ability to generate value from existing technologies (Banker et al. 2013), telecom carriers were thinking about alternative sources of revenue, for example, those from data services accessible via applications installed on the phone.

### 2.2.1.2 Mobile Phone Vendors

Mobile phone vendors are firms that mark handsets under their brand name to be sold to customers. Mobile phone vendors may be involved in various value chain activities or even outsource the entire product development and distribution process to specialists. The first portable handset was introduced by Motorola in the mid-1980s. After Motorola, Nokia from Finland, Ericsson from Sweden, and a bunch of Japanese players joined the industry (Giachetti and Marchi 2017). Based on analog technologies, handsets were initially able to offer only phone call capabilities, but with the digital revolution at the beginning of the 1990s, lots of features like SMS and games were added—most of them pioneered by Nokia. Mobile phones became increasingly “convergent” at the beginning of the 2000s, when multimedia functions, such as a camera, MP3 player, and Bluetooth, were added as well.

A new category of mobile phones was created at the end of the 1990s, with the introduction of mobile phones equipped with an advanced operating system (OS), allowing the phone to offer PC-like capabilities like email, Internet browser, and read documents by means of a set applications. These phones were commonly called “smartphones.” In 2007, smartphones were still a niche, mainly targeted at business users.

While the industry pioneer Motorola maintained solid leadership in the mobile phone industry until the end of the 1980s, with the digital revolution at the beginning of the 1990s, Nokia quickly caught up, surpassing Motorola in 1998. In 2007, Nokia was again the market leader, with more than 35% worldwide market share and the number one position in most geographic countries. Samsung from South Korea had shown impressive performance obtaining the same market share as Motorola in 2007 (nearly 14% each). Followers were Sony-Ericsson and LG.

### 2.2.1.3 Mobile OS Providers

A mobile phone OS, or mobile phone “platform,” is a key component of the handset, allowing the device to run the programs installed. Essentially, an OS is software that manages the handset hardware and software resources and provides common services for the mobile phone programs.

Since the demand for mobile phones in the first half of the 2000s reached impressive penetration rates in most developed countries,<sup>4</sup> handset vendors were forced to rapidly upgrade their devices with new functionalities in order to stimulate the demand for replacement purchases. The “unexpected” upsurge of product innovations in this stage of industry maturity fostered the diffusion of “smartphones” (Giachetti and Marchi 2010). In fact, since the end of the 1990s, handsets have been commonly placed into two categories on the basis of their OS: (a) “regular phones” or “feature phones,” mounting basic OSs offering mainly basic phone and multimedia functionalities, relatively cheap and targeted at the low- and mid-end market; (b) “smartphones,” namely

handsets equipped with advanced OSs offering PC-like capabilities (e.g., download and read documents, install applications), more expensive than regular phones and targeted at the high-end market.

OSs mounted on feature phones typically supported text messaging and sometimes very simplified Internet pages. Before the advent of smartphones, most handset vendors had developed proprietary OSs to power their features phones. But as phones expanded their scope by incorporating functionalities from other product categories, most vendors turned to external OSs with advanced capabilities.

There were, however, some handset vendors that relied on their own advanced OSs. Nokia held onto the leadership in the market for smartphones since its Symbian OS was first commercialized in 2000. As mobile phones started to resemble multi-tasking devices in the mid-1990s, with increasing importance of software as technologies for product differentiation, Nokia and other vendors founded Symbian Ltd. in 1998, to share a common platform (and thus facilitate applications and data transfer compatibility between handsets) and contrast a potential escalation of Microsoft Windows' OS for mobile phones, introduced in 2000. While Symbian OS had a rapid diffusion, Microsoft Windows Mobile was never able to gain momentum in the market. By the end of 2007, Symbian was still the market leader in advanced OSs for mobile phones, with more than 60% market share. Nokia was by far the largest licensee, controlling the production of about 70% of all Symbian phones (Giachetti and Marchi 2017). Another vendor producing its own advanced OS was Research in Motion (RIM) that used its Blackberry OS for its line of BlackBerry smartphones.

#### **2.2.1.4 Content Providers**

Mobile content providers were firms offering simplified applications working also on feature phones that allowed the user to access news, music downloads, and simplified Internet pages. Network operators acted as content aggregators, typically controlling and programming the Web portals presented in the phones they offered. Network operators thus selected which content to feature on their portal pages.

### 2.2.1.5 Application Developers

A mobile application, popularly known as an “app,” is application software designed to run on mobile devices, usually devices with an advanced OS such as smartphones. Up until 2007, mobile apps were offered for general productivity and information retrieval, including mainly email, calendar, contacts, and weather information. With the growing market of smartphones, the number of application developers was expanding, extending applications into other categories, such as mobile games. Given the up-front cost of writing software, application developers preferred to develop for platforms with as many users as possible. In 2007, Symbian was the favorite platform for developers given its more than 60% market share relative to other platforms.

## 2.2.2 The Launch of the iPhone: An Immediate Success

In January 2007, at the annual Macworld Conference & Expo, Steve Jobs announced that Apple would soon be entering the mobile phone industry with a new smartphone called iPhone. At the conference, it was disclosed that for over 30 months Apple had been secretly working with the telecom carrier AT&T (at that time called Cingular) on a project to develop the iPhone at an estimated cost of \$150 million. At the conference, Jobs introduced the iPhone as follows:

Every once in a while a revolutionary product comes along that changes everything. Today, we're introducing three revolutionary products of this class. The first one is a widescreen iPod with touch controls. The second is a revolutionary mobile phone. And the third is a breakthrough Internet communications device [...]. These are not three separate devices, this is one device, and we are calling it iPhone. Today Apple is going to reinvent the phone.

The iPhone was launched in June 2007. In the second half of 2007, the smartphone industry was dominated by Nokia, controlling more than 50% of the market with its Symbian devices. In 2008, Nokia

sold about 60 million smartphones, while Apple sold nearly 14 million iPhones, which is pretty impressive for a firm that entered the smartphone industry only a year before.<sup>5</sup>

## **2.2.3 Key Characteristics of Apple's Strategy with the iPhone**

### **2.2.3.1 Exclusive Partnership with One Telecom Carrier: AT&T**

After have paid up-front \$499–\$599 for an iPhone, to use it as a cell phone, US consumers had to sign up with AT&T. Service plans started at \$59.99, \$20 more than AT&T's standard wireless package. These plans offered access to AT&T's GSM voice network and included unlimited usage of its Edge data network. Moreover, contrary to what was usually done by other telecom carriers, AT&T did not subsidize the purchase price of the iPhone.

The Apple–AT&T partnership gave Apple several advantages. AT&T, the largest US telecom carrier, with more than 60 million subscribers, in exchange for a five-year exclusivity period in the US market, gave Apple complete control over the development, branding, and pricing of its smartphone. This was extremely unusual, as telecom carriers generally dictated terms to mobile phone vendors on aspects like design, features, interface, and price, using their networks as leverage. For example, AT&T had a manual that explained in great detail how suppliers should build a mobile radio optimized for its network; still, Apple did not have to adhere to the specs (Guglielmo 2013).

Most importantly, AT&T agreed to share revenue from the iPhone service with Apple, with the latter receiving a percentage on subscription fees. More specifically, AT&T got about 10% of the revenue from iPhone sales at AT&T stores, as well as a small part of the revenue from iTunes made available on the iPhone.<sup>6</sup> Apple took over the handset activation process and received about 10% of iPhone customer's monthly subscription fees with AT&T. Essentially, unlike leading mobile phone vendors such as Nokia, Samsung, and Motorola, Apple initially did not seek any subsidies from AT&T, but made a revenue-sharing



arrangement with the carrier that would extend over the two-year life of a cellular service plan.

At the end of 2007, carriers in major non-US markets began offering mobile service for the iPhone. These agreements resembled the AT&T deal and included provisions that gave Apple 10–40% of iPhone service revenue.

### **2.2.3.2 Distribution in Apple Stores**

Apple was able to bar AT&T from distributing the iPhone through third parties, such as consumer electronics stores. Moreover, contrary to the other handset vendors, Apple relied on its own mono-brand distribution channel: the Apple Stores. The phone was thereby sold exclusively at AT&T stores and at Apple Stores.

The use of Apple Stores was a crucial element for iPhone sales (Isaacson 2011). First, while other smartphones and feature phones were very generic and in line with the status-quo, the iPhone had innovative features and a much higher price-point, all characteristics that had to be adequately explained by the clerk. Therefore, Apple did not want its iPhone to sit on a shelf between competing brands, with personnel not adequately trained on the iPhone characteristics. Employees at Apple Stores were trained to provide solutions to any kind of questions customers could have about Apple's products, iPhone included. Second, related to the previous point, having its phone sold in Apple Stores avoided the problem of competing brands within the same store. Third, big mono-brand stores gave customers the impression of an important brand. Fourth, Apple Stores allowed the company to exercise control over the sales process and capture key information about customer purchasing behavior.

### **2.2.3.3 Innovative Design and User Experience: A Rectangle with a Multi-touch Display**

The iPhone also made waves in product design and the related user experience. First, it developed a revolutionary 3.5-inch-touchscreen interface that placed commands at the touch of users' fingertips without

a physical keyboard. Jobs knocked down the physical keyboard and the stylus, features that at that time dominated the BlackBerry, Motorola, Nokia, and Palm smartphones. The phone touchscreen displayed square icons for each application. The iPhone's appealing form factor and innovative design, i.e., "a rectangle with a screen" and "apps as square icons," yielded rave reviews (Fig. 2.1).

Second, the touchscreen supported a "multi-touch" interface, allowing rich multi-touch interactions such as zooming and pinching, and it worked perfectly with a motion-sensor switch to automatically sense screen orientation.<sup>7</sup> The touchscreen interface made reading online and offline contents much more exciting. Both consumers and market experts indicated that the iPhone had much higher user satisfaction than even the most popular Nokia and Motorola models (Suarez and Kirtley 2012).

#### **2.2.3.4 Phone with a Platform also Used in Related Products Owned by the Firm**

Companies build families of related products around platforms, namely common components that different teams of engineers can use without having to reinvent the basic infrastructure. For example, before the launch of the iPhone, applications or "apps" for mobile phones were compatible usually with just one of the available software platforms (i.e., OSs), like Nokia's Symbian OS, Microsoft's Windows OS, and RIM's Blackberry OS.

The iPhone at its launch was powered by a specially adapted version of Apple's OSX platform called iOS. Users found the iOS platform intuitive to use, mainly because it supported lots of elements of the OSs they had previously found in Mac computers and iPod devices. Most software and applications working on Mac and iPod also worked on the iPhone. This also made Apple's users increasingly loyal to the firm's products: Once one bought an Apple device, they were likely to purchase other devices from the firm because they shared the same platform.

Moreover, Apple increased the competitiveness of the iPhone by leveraging its installed base of iTunes, the largest music retailer in the USA,



**Fig. 2.1** Images of Apple's first iPhone launched in 2007 and competing smart-phones before the iPhone introduction. (Note Images reported in gray scales. Source Reprinted with permission from <http://mobile.softpedia.com/>)

used by consumers to purchase applications for Apple's devices. In this way, Apple's iPhone shifted power from network operators toward Apple, the platform provider. Content could only be distributed through the iTunes Store, and Apple selected what kinds of content could be offered. Furthermore, each phone had to be registered with Apple, and each user needed an iTunes account before the user could synchronize an iPhone with a PC.

### 2.2.3.5 A Platform that Brings Together a Broad Ecosystem of Software and Application Developers

Apple was able to develop not only a mobile phone platform that shared similarities with platforms mounted on its other products. Apple was also able to build an industry-wide platform that brought together a broad ecosystem of partners engaged in complementary innovations: app developers (Yoffie and Cusumano 2015).

One key driver behind the iPhone sensation was the launch of the Apple App Store, which Jobs only reluctantly supported. Jobs initially wanted Apple to develop all the apps for the iPhone, and this strategy was coherent with his preference for "closed platforms" and total control. In fact, initially, Apple did not disclose the code of the iOS to third-party developers. However, many developers found ways to create

unofficial apps for the iPhone. Finally, in March 2008, with the aim of preventing unofficial apps from becoming the norm, Apple released the iOS code to developers. Moreover, Apple invited developers interested in creating apps for the iPhone to join the “iPhone Developer Program,” paying a yearly fee of US\$99. The program was designed to help developers test their code and have a platform to distribute their apps. The similarity between iOS and the Mac OS made the app development process easier.

Many apps on the App Store were free and most paid apps started at \$0.99. The App Store was introduced as part of iTunes, which already had a huge following thanks to the boom of the iPod at the beginning of the 2000s.

Software developers also welcomed the App Store because Apple made it easier to reach consumers. Apple reserved the right to approve all applications and kept a 30% cut of the developer’s app sales.

The popularity of the App Store was stunning. In the first 18 months, nearly 4 billion applications had been downloaded worldwide, and by the end of 2014, over 1.4 million applications were available in literally any type of category. The App Store was one of the key differentiation factors that made the iPhone worth its price.

Interestingly, most of the apps were not directly developed by Apple, but were outsourced to independent developers. In this way, Apple could focus on controlling R&D intensive activities at the upstream end of the value chain (e.g., NPD) and marketing intensive activities associated at the downstream end (e.g., brand management) (Mudambi 2008).

### **2.2.3.6 Music Player Functionalities: iPhone as a Smartphone with an iPod Inside**

By 2005, the amazing success of the iPod was boosting Apple’s revenues and status. People all over the world were going crazy for Apple’s portable music players. Still, despite its success, Jobs was deeply concerned about the iPod’s potential in an era of “portable convergent devices.” His major concern was that users were being forced to carry around two

portable devices: a portable music player, like the iPod, and a mobile phone. At some point, he expected the mobile phone would gain the functionality of the portable music player, rendering the latter obsolete. His worries were well-founded because cell phones were progressively threatening the growth of other product categories, like digital cameras. Therefore, he was determined to not let the iPod suffer the same fate. In technology-intensive industries, obsolescence and cannibalization are quite common. The trick for a firm is to ensure that the cannibalizing product evolves fast enough to meet the demands of the new market.

The iPhone came in two versions with 4 GB and 8 GB of internal memory, a storage capacity greater than most of the other competitors, plus a very intuitive iPod-like application to listen to and download music files from iTunes. With the iPhone, Apple positioned themselves at the center of the next wave of technology that would render portable music players obsolete (Yoffie and Cusumano 2015).

Interestingly, before the iPhone, other handset vendors had tried to expand the mobile phone functionalities by installing software capable to provide MP3 player functions. Sony-Ericsson, for example, in mid-2005 introduced Walkman-branded devices,<sup>8</sup> and in 2006, the company sold 60 million music mobile phones, including 17 million with the Walkman brand. Sales of Walkman-branded devices began to slow down during the first year of the first iPhone life cycle and became to decline quite rapidly a year later, overshadowed by the iPhone success. Simply, the iPod interface installed in the iPhone made the iPhone music functionalities and user experience much better than any other music mobile phone. A manager of Sony-Ericsson we interviewed in November 2008 described its company as a pioneer in music-centric mobile phones, but he could not expect the iPhone success would have continued growing exponentially:

We took the decision as a brand to launch functionalities related to what Sony and Ericsson did as independent companies, before the joint venture. In consumers' eyes Sony is very strong in music because of the success of the Walkman. So it is very difficult for competitors to be able to imitate our Walkman phones because of our brand recognition as a key player in music-related products.

The iPhone obviously was not an imitation of Sony-Ericsson's Walkman phones. As Sony-Ericsson, also Apple looked across two industries whose products shared similar functionalities, but only Apple was able to make the phone a true substitute of portable music players.

### **2.2.3.7 Ease of Use: A Premium Smartphone for the Mass Market**

Apple created a smartphone for the mass market mainly thanks to its ease of use. First, instead of a physical keyboard and stylus, features that at that time dominated the BlackBerry, Motorola, and Palm smartphones, the iPhone had a display that became both the keyboard and control panel. In fact, the vast majority of smartphones back in 2007 had physical keyboards and the few equipped with a touchscreen came with a stylus pen to aid in usability. Still, mobile apps were hard to use, and the mobile Web was pretty much limited to WAP browsers, making phone usage quite complicated, limited to business users. The iPhone multi-touch interface made everything easier.

Second, while smartphones were designed around carrier limits and focused on corporate applications, Apple designed the iPhone to appeal to consumers and satisfy their communication needs. By using the framework of its hugely popular iTunes Store, Apple made it easy for customers to access and download the apps using an interface with which they were familiar.

Third, the pricing strategy adopted by Apple in the App Store, similar to the one that was followed in the iTunes Store, was another reason for a large number of downloads. With prices usually close to \$1 for an app (similar to what Apple charged for a song on iTunes), customers did not take much time in making the purchase decision.

### **2.2.3.8 Narrow Product Line: Just One Model Per Year**

While the tendency of leading mobile phone vendors since the digital revolution in the 1990s had been to increase the length of the product line (following Nokia's strategy) to serve a rapidly growing market

characterized by heterogeneous consumer segments (Giachetti and Torrisi 2017), Apple decided to enter the market with just one device.

The rapid introduction of a wide range of devices in various sizes, form, and technical performance to see which is mostly appreciated by customers is one of those tremendously costly product line strategies only few handset vendors are able to pursue effectively and efficiently. For example, Samsung's highly vertically integrated structure, offering the firm a great ability to rapidly produce displays, memories, processors, and other handset components, gave it a strategic flexibility and production efficiency most competitors did not have (Giachetti and Marchi 2017). And this made the Samsung's product line strategy extremely successful over the 2000s. Apple instead designed its products (and components), the iPhone included, in California, but outsourced component production and assembly to partners outside the USA, mainly in Asia. Since it had no experience with the mobile phone industry before the iPhone, with the uncertainty related to the success of its first phone, Apple preferred to focus all its resources on the production of a single device, positioned in the high-end market.

The case of Apple's iPhone is indeed a counterexample to the successful product line extension strategy followed by Samsung over the 2000s. In fact, the US firm, from the introduction of the iPhone in 2007, has relied almost exclusively on a single product model per year (i.e., the iPhone, plus some variants in terms of color and RAM capacity, and some tablet devices with phone capabilities). The narrow product line strategy of Apple has various benefits. First, the firm positioning with only one product in the high-end market avoided the problem of competing in the increasingly price-competitive and then low-profitable low- and mid-end markets, where Chinese vendors were rapidly stealing shares from established players. Second, having a few models within the line made buying an Apple iPhone "simple," especially for brand loyal customers that wanted the process of choosing a high-tech expensive product to not be complicated by a plethora of choices. This focused strategy was coherent with all the other devices in Apple's portfolio (i.e., MP3 players, PCs, and later tablets). Third, in so doing, Apple concentrated all its R&D and advertising expenses to develop and commercialize just one device and make its launch stunning (Giachetti and Dagnino 2014).

### **2.2.3.9 High Price-Point Plus High Production Efficiency Means Being the Profit Leader**

In June 2007, Apple launched its iPhone, with a premium price tag of \$499–\$599. Apple increased the price-point in almost all subsequent releases, with sales continuing to increase.

For the second iPhone model released in 2008, Apple revamped its pricing model: Carriers provided a subsidy on the phone in exchange for dropping the revenue-sharing agreement on contract subscription fees. Until the end of the 2000s, Apple released an upgraded iPhone every 12–15 months and greatly expanded distribution.

Apple also changed its relationship with telecom carriers, moving in most countries from a single telecom carrier to multiple carriers selling iPhones. The impressive success of the iPhone gave Apple great bargaining power vis-à-vis carriers. Sprint, for example, signed a four year, \$15 billion deal with Apple that committed the carrier to sell at least 24 million iPhones.

With each new iPhone release, Apple also dropped the price of prior releases. The combination of big subsidies, low prices on older models, and expanded distribution caused revenues and unit volumes to explode.

In 2010, Apple commanded a wholesale average selling price of about \$650 from its iPhones, while competitors' average selling price on smartphones ranged between \$250 and \$350. Falling component costs for old models and design improvements helped to reduce the iPhone's cost structure. Moreover, Apple's production efficiency and its ability to keep its costs down were also due to the fact that it had become one of the largest customers of Foxconn in China, the world's largest contract electronics manufacturer.

In countries such as China, the iPhone was just taking off in 2012: Even without subsidies, Chinese consumers were willing to buy iPhones for prices approaching \$1000.



### 2.2.4 iPhone's Blue Ocean Strategy

Using the words of Kim and Mauborgne, we could say that Apple with its iPhone in 2007 was able to implement a “blue ocean strategy” (Kim and Mauborgne 2005), namely it was able to diverge from the accepted dimensions of competition and create a new market space with no direct competitors, where new demand was at its disposal. More specifically, we believe Apple was able to redefine market boundaries mainly in two ways. First, it was able to *look across substitute industries*. In fact, instead of looking within the accepted boundaries that defined the mobile phone industry and how to compete within it, Apple looked across the smartphone industry, the portable music industry, and the Internet communication device industry—three product categories that shared similar functionalities. Apple was the first mobile phone vendor to perfectly integrate the core functions of these three product categories into a single device. Second, Apple was able to create a new market space by successfully *looking across complementary product and service offerings*. In fact, on the one hand, the iPhone was equipped with a platform (OS) also used in related products of the firm, i.e., Mac and iPod, making customers increasingly loyal to Apple's platform as a whole instead of just single devices; on the other hand, Apple was able to rely on a wide ecosystem of app developers that made the App Store one of the key differentiation elements.

In order to analyze how Apple was able to successfully compete in the uncontested market space it created in the mobile phone industry, we use two analytical tools proposed by Kim and Mauborgne (1999, 2005): (1) the “strategy canvas,” or “value curve,” a graphic representation of the way a company configures its offering to customers, and how this offering differs from one of the competitors; (2) the “four actions framework” (and the related “eliminate-reduce-raise-create grid”), a tool that serves to discover a firm's strategy canvas and understand whether and how the firm was able to create an uncontested market space (i.e., a “blue ocean”).

### 2.2.4.1 Strategy Canvas of Feature Phone and Smartphone Vendors Before the iPhone

In Fig. 2.2, we have plotted the strategy canvas of the two groups of players that operated in the mobile phone industry before Apple launched the iPhone in 2007: (1) mobile phone vendors selling feature phones and (2) mobile phone vendors selling smartphones. The graphical representation of the strategy canvas should be interpreted as follows. The horizontal axis captures the range of factors the industry competes in and invests in. The vertical axis of the strategy canvas captures the offering level that buyers receive across all these key competing factors. A high score means that a company offers buyers more, and hence invests more, in that factor.

Although over the first half of the 2000s the market for smartphones had expanded in most developed countries, it was still a niche. As can be observed in Fig. 2.2, feature phone and smartphone vendors competed in different strategic groups, and given what consumers received from the two distinct competitive offerings, they were perceived as two distinct product categories. Feature phones and smartphones had very different features; they were distributed toward very different distribution channels; and they had very different price-points. Feature phones were relatively cheaper with respect to smartphone devices, mainly because they were not equipped with the latest technological advances. Smartphones were not that user-friendly, and because of their not easy-to-use OSs and high price tag, they were targeted at a niche, mainly business users, while feature phones, much cheaper and intuitive, were targeted at the mass market. Because feature phones were targeted at the mass market, vendors offered a wide variety of these phones within their product line, while smartphone vendors offered a much lower product variety. Feature phones were sold by means of intensive or selective distribution, mainly in retail point of sales of telecom carriers. Smartphones distribution instead was exclusive, in very few telecom carrier stores, often sold in consumer electronics stores displayed on the shelves close to PCs or other electronic devices. Handset vendors' mono-brand stores were very rare. Because of their high price, when sold at the retail point of sales of telecom carriers, smartphones were subsidized by carriers and sold with a contract plan. This meant the

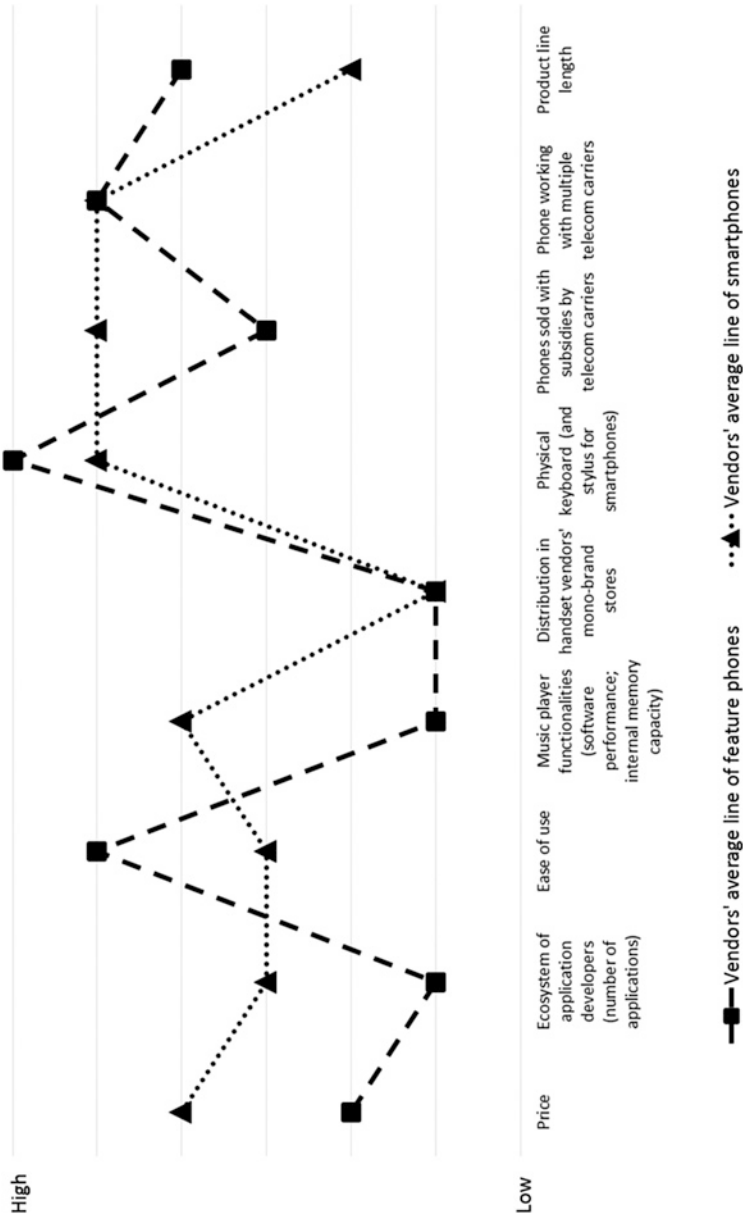


Fig. 2.2 Strategy canvas of feature phone vendors and smartphone vendors in 2007 (before the introduction of the iPhone)

customer had to pay a monthly fee for 2–3 years that included both the cost of the phone, even if discounted thanks to the telecom carrier subsidies and services, i.e., a certain amount of traffic of voice, and data services (such as access to simplified Internet Web pages to surf the net and download applications). Also, feature phones could be sold with contracts, but because of their relatively low price, they were often sold as “SIM free,” i.e., the customer paid up-front the full phone price and was not locked-into a carrier’s contract plan.

#### 2.2.4.2 Four Actions Framework of Apple in the Mobile Phone Industry

What was Apple’s iPhone strategy canvas in 2007, and how did this positioning allowed Apple to obtain remarkable performance in the mobile phone industry? Before depicting Apple’s strategy canvas, let us describe the meaning of the other tool that, according to Kim and Mauborgne (1999, 2005), a firm should use to discover a strategy canvas that is the reflection of a blue ocean strategy: the four actions framework.

The four actions framework starts from the observation that the key to discovering a new value curve lies in asking four basic questions:

- Which of the factors that the industry takes for granted should be *eliminated*?
- Which factors should be *reduced* well below the industry’s standard?
- Which factors should be *raised* well above the industry’s standard?
- Which factors should be *created* that the industry has never offered?

The “eliminate” question should push a firm to consider eliminating factors that industry rivals have long competed on. In fact, some of these factors might have lost their value even though rivals continue to take them for granted. The “reduce” question should push a firm to determine whether products or services have been equipped with unnecessary features in the race to match and beat the competition. The risk of overdesigning a product is to increase the cost structure for the development of features that are not requested by customers and thus

do not lead to any additional gain. The “raise” question should push a firm to place more emphasis on factors that other rivals consider as less important. The “create” question should help a firm to discover entirely new sources of value for buyers and to create new demand.

It is by pursuing the “eliminate” and “reduce” questions that a firm gains insight into how to drop its cost structure vis-à-vis industry rivals. Instead, the “raise” and “create” questions provide the firm with insight into how to enhance value for customers and create new demand (Kim and Mauborgne 2005). When a firm applies the four actions framework to the strategy canvas of its industry, it gets a revealing new look vis-à-vis industry rivals.

The four key questions challenging an industry's strategic logic and business model proposed by the four actions framework can be synthesized in the “eliminate-reduce-raise-create grid” (Kim and Mauborgne 2005). We have examined and illustrated the four actions framework of Apple's iPhone in Fig. 2.3, and we discuss it as follows.

*Create.* Apple was able to create factors that no one expected, but radically transformed the customer experience: The iPhone's rectangular form factor with square icons on the display brought an innovative look to the mobile phone, and was in fact quickly imitated by rivals, becoming the industry dominant design in a few years, and consecrating Apple

|   |   |
|---|---|
| <p style="text-align: center;"><b>Eliminate</b></p> <p>Physical keyboard (and stylus for smartphones)</p> <p>Phones sold with subsidies by telecom carriers (only for the first iPhone)</p> <p>Phone working with multiple telecom carriers (only for the first iPhone)</p> | <p style="text-align: center;"><b>Raise</b></p> <p>Price</p> <p>Ecosystem of application developers (number of applications)</p> <p>Ease of use</p> <p>Music player functionalities</p> <p>Distribution in the firm's mono-branded stores</p> |
| <p style="text-align: center;"><b>Reduce</b></p> <p>Product line length</p>   | <p style="text-align: center;"><b>Create</b></p> <p>Multi-touch interface</p> <p>Unique design</p> <p>A platform (OS) used also in related products owned by the firm</p>   |

**Fig. 2.3** Eliminate-reduce-raise-create grid of the Apple's iPhone in 2007–2008

as the brand pioneering a new era of phones; the multi-touch interface offered a new, exciting user experience; the fact that the iPhone platform, i.e., iOS, was also used in Apple's other successful products like Mac and iPod increased customer loyalty to the brand.

*Raise.* Apple shook up factors that were the status-quo to create a new standard: It raised the number of applications working on its platform well above what was offered by competing platforms like Symbian and Windows Mobile, thanks to its ecosystem of app developers, making the iPhone a product capable of delivering any kind of functionality; its intuitive user interface and installed software made the iPhone a smartphone that everybody could use; the great data storage capacity, thought mainly to store music files, made the iPhone a “killer” of portable music players; the distribution in Apple Stores gave Apple full control over the customer purchasing process and eliminated competitors on the shelf; and because of the great value that Apple was able to transfer to its product, it charged customers a higher price-point than competing smartphones.

*Eliminate.* Apple eliminated core factors that the industry had competed on for years, but that were no longer necessary: It substituted the physical keyboard and stylus with a multi-touch interface, giving the smartphone a new look and offering customers a new user experience; it initially refused to sell the phone at a discounted price through carriers' subsidies and avoided working with multiple carriers, but found an exclusive agreement with a carrier that guaranteed secrecy on the project before its launch and gave Apple near-complete control over the development, branding, and pricing.

*Reduce.* Apple reduced factors that were not really necessary to serve the market it had in mind: It reduced the product line length essentially to just one model, thus concentrating its R&D and marketing resources on one product model to make its launch memorable, as well as to simplify the consumer decision-making process.

#### **2.2.4.3 Strategy Canvas of Apple in the Mobile Phone Industry**

By applying the four actions framework, and then the Eliminate-Reduce-Raise-Create Grid (Fig. 2.3), to the strategy canvas of Apple's iPhone in 2007–2008, we can clearly see how Apple's way of positioning its

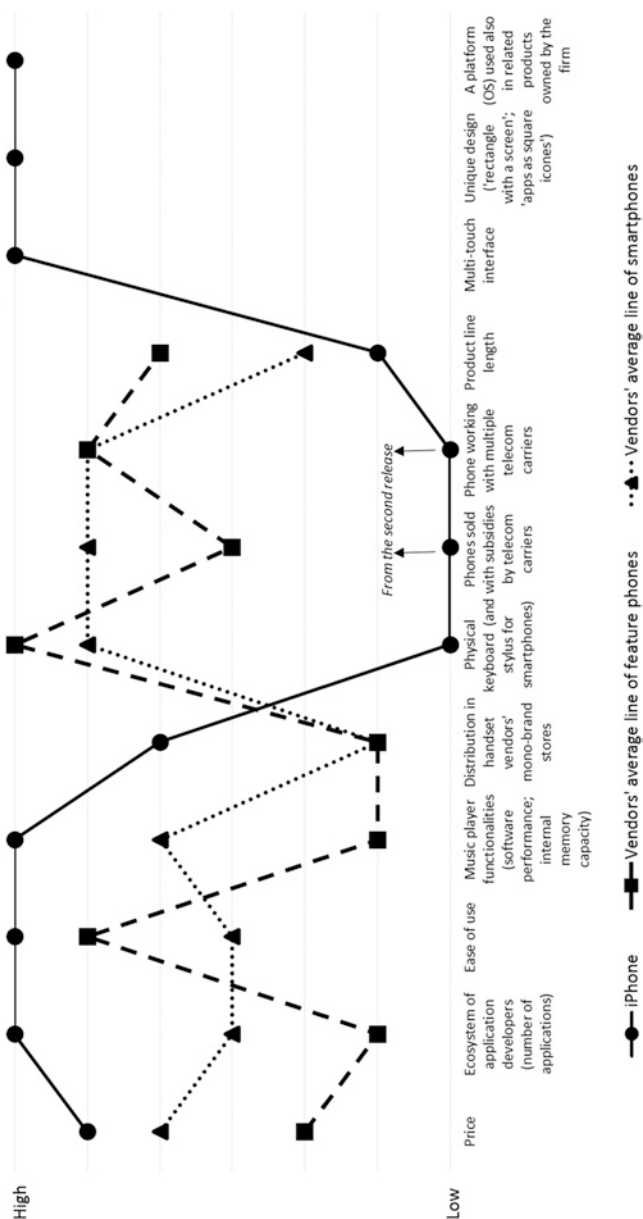


Fig. 2.4 Strategy canvas of Apple's iPhone in 2007–2008

products and competing was very different with respect to other mobile phone vendors. As shown in Fig. 2.4, Apple competed on very different factors when launching its iPhone. It significantly diverged from competition in the feature phone and smartphone segments, while opening a new tangible market.

### 2.2.5 iPhone Business Model

Interestingly, Apple's blue ocean strategy with its iPhone resulted in a very different business model vis-à-vis the other handset vendors.<sup>9</sup> Table 2.3 compares the key building blocks of the business model of Apple in the mobile phone industry relative to vendors of smartphones and feature phones.

Apple with its iPhone was the first handset vendors to truly exploit the benefits of a *multi-sided platform* business model. Multi-sided platforms are technologies that create value primarily by enabling direct interactions between two or more groups of customers, smartphone buyers, and app developers in the case of Apple's iPhone. Apple allowed iPhone users to access and use thousands of applications created by third-party developers and, vice versa, it enabled third-party application developers to reach the millions of iPhone users. The smartphone users' valuation of a multi-sided platform as a whole depends on the number of apps (and, indirectly, app developers). Users will only join the platform if developers provide many applications, and developers join if they can target many users. In this sense, an advantage of a multi-sided platform like the iPhone one lies in its ability to trigger *network effects*, i.e., a phenomenon whereby a product or service becomes more valuable when more people use it: As the number of applications available on the iPhone increased, network effects increased the value of the iPhone such that more and more smartphone users bought the iPhone as opposed to other smartphones equipped with operating systems offering lower app choice.<sup>10</sup> Interestingly, Apple was able to gain revenues and profits from both sides of the platform (smartphone users and app developers), even though costs for apps development were very low for Apple, since almost entirely outsourced to developers.



**Table 2.3** Apple's business model in the mobile phone industry: Comparison with other vendors of smartphones and feature phones in 2007–2008<sup>a</sup>

| Business model building blocks <sup>b</sup>   | Apple's iPhone   | Smartphone vendors (top vendors)   | Feature phone vendors (top vendors)  |
|---|--|--|--|
| <i>Customer segment</i><br>(the different groups of people or organizations a company aims to reach and serve)      | <ul style="list-style-type: none"> <li>• Mass-market users; Business/corporate users; Geeks</li> <li>• App developers</li> </ul>   | <ul style="list-style-type: none"> <li>• Business/corporate users; Geeks</li> <li>• App developers (even though most apps were managed by telecom carriers)</li> </ul>   | <ul style="list-style-type: none"> <li>• Mass-market users</li> </ul>  |
| <i>Value proposition</i><br>(the bundle of products and services that create value for a specific customer segment) | <p><i>For handset users:</i></p> <ul style="list-style-type: none"> <li>• Easy-to-use high-end smartphone (PC-like functionalities), with advanced music player and Internet communication functionalities integrated in a digital hub ecosystem</li> </ul> <p><i>For app developers:</i></p> <ul style="list-style-type: none"> <li>• Established platform and expanding ecosystem</li> <li>• App Store simplified the process of monetizing apps for developers</li> </ul> | <p><i>For handset users:</i></p> <ul style="list-style-type: none"> <li>• Mobile phones with PC-like functionalities (few applications, not easy-to-use interface, basic music player functionalities)</li> </ul> <p><i>For app developers:</i></p> <ul style="list-style-type: none"> <li>• Platform quite unknown and small ecosystem</li> <li>• Complicated process of monetizing apps</li> </ul> | <p><i>For handset users:</i></p> <ul style="list-style-type: none"> <li>• Mobile phones with basic multimedia functionalities</li> </ul> |

(continued)

Table 2.3 (continued)

| Business model building blocks <sup>b</sup>   | Apple's iPhone  | Smartphone vendors (top vendors)  | Feature phone vendors (top vendors)   |
|---|---|---|---|
| <i>Channels: distribution and communication</i><br>(how a company communicates with and reaches its customer segments to deliver a value proposition) | <ul style="list-style-type: none"><li>• Telecom carriers' retail stores and Apple Stores to sell the phone</li><li>• App Store to purchase apps</li><li>• Aggressive media advertising through any channel of communication to create hype</li><li>• Product advertised as aspirational with both emotional and functional elements</li></ul> | <ul style="list-style-type: none"><li>• Telecom carriers' retail stores and consumer electronics stores to sell the phone</li><li>• Web pages controlled by telecom carriers to purchase apps</li><li>• Advertising on very selected channels of communication</li><li>• Product advertised as functional</li></ul> | <ul style="list-style-type: none"><li>• Telecom carriers' retail stores to sell the phone</li><li>• Web pages controlled by carriers to purchase multimedia contents (i.e., simplified apps)</li><li>• Advertising on selected channels of communication</li><li>• Product advertised as functional</li></ul> |

(continued)

Table 2.3 (continued)

| Business model building blocks <sup>b</sup>  | Apple's iPhone   | Smartphone vendors (top vendors)   | Feature phone vendors (top vendors)   |
|--|--|--|---|
| <p><i>Customer relationship</i><br/>(the types of relationships a company establishes with specific customer segments)</p> | <p>With <i>handset users</i>:</p> <ul style="list-style-type: none"> <li>• Intermediated by telecom carriers' retail stores, but also direct relationships by means of Apple Stores</li> <li>• Applications are numerous, almost entirely developed by Apple and independent developers, and sold on Apple's official online store</li> <li>• Phones with a platform (iOS) offering compatibility and easy synchronization with other devices owned by the company (e.g., iPod, Mac)</li> </ul> <p>With <i>app developers</i>:</p> <ul style="list-style-type: none"> <li>• App creation is easy for developers: direct relationship between Apple that shares software development tools</li> <li>• App Store simplifies the process of monetizing apps for developers</li> </ul> | <p>With <i>handset users</i>:</p> <ul style="list-style-type: none"> <li>• Intermediated by telecom carriers retail stores and consumer electronics stores</li> <li>• Applications are few, in great part developed by telecom carriers</li> <li>• Weak compatibility between the smartphone platform and the platform of other related devices</li> </ul> <p>With <i>app developers</i>:</p> <ul style="list-style-type: none"> <li>• App creation is complicated for developers: handset vendors generally did not offer software development tools to external software developers</li> <li>• Complicated process for monetizing apps for developers</li> </ul> | <p>With <i>handset users</i>:</p> <ul style="list-style-type: none"> <li>• Intermediated by telecom carriers retail stores</li> <li>• Multimedia contents are very few, almost entirely controlled and selected by telecom carriers, and sold to users on telecom carriers' online platforms</li> <li>• No compatibility between the feature phone OS platforms mounted on other related devices</li> </ul> <p>With <i>content developers</i>:</p> <ul style="list-style-type: none"> <li>• Weak relationship between handset vendors and content providers (telecom carriers manage the content creation)</li> <li>• Most revenues from contents are absorbed by carriers</li> </ul> |

(continued)

Table 2.3 (continued)

| Business model building blocks <sup>b</sup>  | Apple's iPhone  | Smartphone vendors (top vendors)  | Feature phone vendors (top vendors)  |
|--|---|---|--|
| <i>Revenue streams</i><br>(the cash a company generates from each customer segment)        | <ul style="list-style-type: none"> <li>• Sales of handsets</li> <li>• 10–40% of carriers' revenue from subscription fees</li> <li>• Percentage of revenue from sales of applications (on iTunes store) plus annual fees</li> </ul>  | <ul style="list-style-type: none"> <li>• Sales of handsets</li> <li>• (most revenues from applications captured by telecom carriers)</li> </ul>                                       | <ul style="list-style-type: none"> <li>• Sales of handsets</li> <li>• (most revenues from multi-media contents captured by telecom carriers)</li> </ul>  |
| <i>Key resources</i><br>(the most important assets required to make a business model work) | <ul style="list-style-type: none"> <li>• Physical: digital platform (iOS); iTunes software; own distribution network (Apple stores)</li> <li>• Intellectual: brand, patents</li> <li>• Human: previous knowledge in consumer electronics design and technology; strong bargaining power in the music industry</li> <li>• Financial: huge liquidity generated by the boom of iPod sales</li> </ul> | <ul style="list-style-type: none"> <li>• Physical: digital platform</li> <li>• Intellectual: brand, patents</li> <li>• Human: long experience in the mobile phone industry</li> </ul> | <ul style="list-style-type: none"> <li>• Physical: basic, easy-to-use proprietary OS</li> <li>• Intellectual: brand, patents</li> <li>• Human: long experience in the mobile phone industry</li> </ul> |

(continued)

Table 2.3 (continued)

| Business model building blocks <sup>b</sup>  | Apple's iPhone   | Smartphone vendors (top vendors)  | Feature phone vendors (top vendors)  |
|--|--|---|--|
| <i>Key activities</i><br>(the most important things a company must do to make its business model work) | <ul style="list-style-type: none"><li>• Hardware design</li><li>• Platform (iOS) development and improvement</li><li>• Negotiation with telecom carriers (AT&amp;T)</li><li>• Accommodate the continuous demand of app developers</li><li>• Timely coordination of operations and logistics to satisfy the huge demand</li><li>• Marketing</li></ul> | <ul style="list-style-type: none"><li>• Hardware design</li><li>• Platform development and improvement</li><li>• Customize phone design based on specifications imposed by telecom carriers (weak bargaining power with telecom carriers)</li><li>• Marketing</li></ul> | <ul style="list-style-type: none"><li>• Hardware design</li><li>• Customize phone design based on specifications imposed by telecom carriers (weak bargaining power with telecom carriers)</li><li>• Marketing</li></ul> |
| <i>Key partnerships</i><br>(the network of suppliers and partners that make the business model work)   | <ul style="list-style-type: none"><li>• AT&amp;T (telecom carrier)</li><li>• App developers</li><li>• Product assemblers (Foxconn)</li><li>• Component manufacturers</li><li>• New product development</li><li>• Manufacturing</li><li>• Marketing</li></ul>   | <ul style="list-style-type: none"><li>• Telecom carriers</li><li>• (relationship with few app developers)</li><li>• Product assemblers</li><li>• Component manufacturers</li></ul>  | <ul style="list-style-type: none"><li>• Telecom carriers</li><li>• Product assemblers</li><li>• Component manufacturers</li></ul>  |
| <i>Cost structure</i><br>(all costs incurred to operate a business model)                              | <ul style="list-style-type: none"><li>• Component manufacturers</li><li>• New product development</li><li>• Manufacturing</li><li>• Marketing</li></ul>  | <ul style="list-style-type: none"><li>• Component manufacturers</li><li>• New product development</li><li>• Manufacturing</li><li>• Marketing</li></ul>   | <ul style="list-style-type: none"><li>• Manufacturing and NPD (Original design manufacturers developed most of feature phones for handset vendors)</li></ul>   |

<sup>a</sup>Smartphone and feature phone vendors before the launch of Google's Android OS in 2008<sup>b</sup>Building blocks based on the classification proposed by Osterwalder and Pigneur (2010)

## Notes

1. “Diffusion” is the process by which a new idea or new product is accepted by the market (e.g., the number of products per hundred people). The rate of diffusion is the speed that the new idea spreads from one consumer to the next.
2. Source: <https://www.fairphone.com/en/our-goals/>.
3. Crowdfunding is the use of capital collected from a large number of individuals to finance a new business initiative. The funding campaign and transactions are typically conducted online through dedicated crowdfunding websites. Usually, in the funding campaign the entrepreneurs set a minimum budget that needs to be collected within a specified amount of time for the project to start. If the minimum budget is not reached, backers will have their money back. If the project starts, backers obtain shares of the new venture or are compensated with a “gift” proportionate to the amount they financed.
4. “Penetration rate” here is used as synonym of “diffusion” and normally refers to the number of products per hundred people. For example, according to the World Bank, in 2007, the mobile phone penetration rate (mobile cellular subscriptions per 100 people) in the USA was 82.47%, meaning that there were about 82 mobile phones every 100 people.
5. Data on smartphone units sold were collected from Asymco ([www.asymco.com](http://www.asymco.com)).
6. iTunes is a media management software launched by Apple in 2001, used to play, download, and organize digital downloads of music, video, and other types of applications on devices running Apple’s OS.
7. In computing, multi-touch refers to a touch sensing display’s ability to recognize the presence of two or more points of contact with its surface. FingerWorks, the first developer of multi-touch technologies between 1999 and 2005, was acquired, together with its patents, by Apple in 2005.
8. “Walkman” is a Sony brand trade name used since late 1970s by the company for its portable audio cassette players, and later to market digital portable audio players, as well as a line of mobile phones introduced in 2005.
9. A business model describes the rationale of how an organization creates, delivers, and captures value. Essentially, it refers to how all activities of a firm generate value for its stakeholders (Osterwalder and Pigneur 2010).

10. Network effect can be *same-side*, i.e., an increase of users leads to a direct increase in value for other users (e.g., network effect among users of an instant messaging software), or *cross-side*, i.e., as the network of users expands, it becomes more attractive to actors on the other sides of the platform (e.g., network effect between smartphone users and app developers).

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