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Apple iPhone's Business Model

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FFigure 1.1 - iPhone 3GS

On Friday, June 29th, 2007, the iPhone went on sale and was sold in the US through Apple's retail and online stores and AT&T retail stores. Apple closed its stores at 2:00 PM local time to prepare for the 6:00 PM iPhone launch, while hundreds of customers lined up at stores nationwide.

Describing the essential characteristics and qualities of the product in a so effective way like the words used by Apple is less incisive. *iPhone combines three products into one small and lightweight handheld device – a revolutionary mobile phone, a widescreen iPod, and the Internet in your pocket with best-ever applications on a mobile phone for email, web browsing and maps. iPhone ushers in an era of software power and sophistication never before seen in a mobile device, which completely redefines what users can do on their mobile phones.*

Tracking down the milestones of an announced success story involves to elaborate on marketing strategies, consumers expectations, original designing, never seen usability, unprecedented competitive service plans, innovative distribution modality, attractive complementary products (applications), and so on. Here a look at the iPhone's success by "numbers":

- The most-searched word on Google in 2007.
- Time magazine named iPhone the "best invention of 2007".
- The fastest selling product in Apple's history, trumping even the iconic iPod nano.
- The most voted product in Wall Street Journal's gift list in 2007.
- Over 100,000 third-party applications on the App Store, with over 2 billion total downloads.
- $1 billion: Annual profit predicted through the App Store.
- iPhone eats up 50% share of all mobile data traffic globally.
- In less than two and a half years, iPhone captures 17% of worldwide smartphone market (Q3 2009 report), making Apple the third-largest smartphone company, behind only Nokia and RIM.
- 33.75 million iPhones sold to date (Q4 2009)

Fiscal Year	Q1	Q2	Q3	Q4	Total sold
2007			270,000	1,119,000	1,389,000
2008	2,315,000	1,703,000	717,000	6,890,000	11,625,000
2009	4,363,000	3,793,000	5,208,000	7,367,000	20,731,000
Fiscal Year	**Q1**	**Q2**	**Q3**	**Q4**	**33,745,000**

Table 1.1 – iPhone sales: unit sold worldwide per fiscal quarter

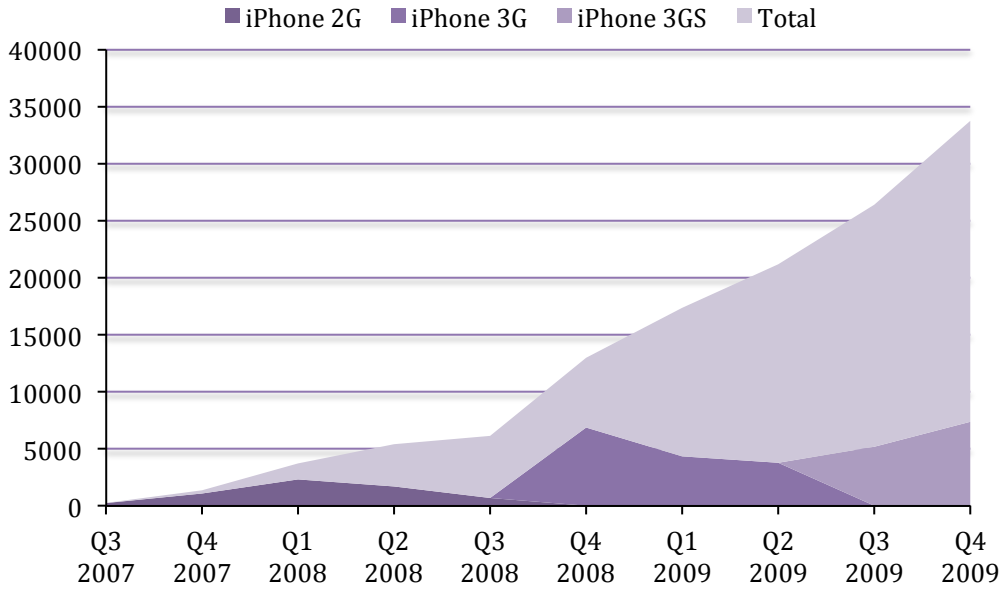

Figure 1.2 – iPhone sales chart: unit sold worldwide, in thousands, per fiscal quarter

How were these numbers obtained? Explaining such results. What's the strategy behind such results? Let's try to analyze the Apple iPhone's Business Model.

2. Business Model

The iPhone's platform has a simple business model: everything is led under the tight direction and rigid control of Apple to deliver what it hopes to be the most desirable offering possible, in order to sell the most iPhones to consumers. The software platform is projected into Apple's own hardware design and is stringently integrated with iTunes for setup, software updates, backups, data syncing and application management.

The Cupertino company also maintains strong control over where the iPhone is sold, and manages nearly all support issues itself. If there are hardware problems, or software issues like security flaws or poor performance with the iPhone, it's squarely Apple's fault.

The iPhone is exclusively tied to official mobile providers who must agree to certain concessions. However, Apple's carrier deals also currently limit users' options in many markets such as the US, where the iPhone can only be used on AT&T's network. Any attempts of alteration by users will invalidate Apple's warranty and will disable all software updates – also as a form of protection from unlocking and jailbreaking. That's you can't get the iPhone OS from any other source, you're not allowed to modify the core software, you can't install applications that Apple determines to be of poor quality, incompatible with its design goals and business, or damaging to its platform unless you take it upon yourself to hack the iPhone via a jailbreak, something that Apple discourages for security issues and works to prevent.

All these necessary measures are taken to achieve and protect the business built around the iPhone's platform. Economic strategies that allowed Apple to build these unprecedented results followed two different management directions. Initially, Apple made its entry into the smartphone market by introducing the first generation of iPhone model (iPhone 2G) and changing the way to think about mobile devices and mobile industry rules with its innovative strategy (that we jokingly calls Business Model 2G). With a consolidated position in the market, Apple revolutionizes the mobile market opening to developer community and increases its business with an exponential growth applying a Business Model 3G (from the name of the second generation of iPhone model). The first step preparatory to the second phase. The watershed was the App Store.

2.1 Business Model 2G (1st Generation)

The first generation of the iPhone was available in a 4GB model for $499 and an 8GB model for $599. All iPhone monthly service plans are based on a new two-year service agreement with AT&T. Individual plans are priced at $59.99 for 450 minutes, $79.99 for 900 minutes and $99.99 for 1,350 minutes. All plans include unlimited data (email and web), Visual Voicemail, 200 SMS text messages, roll over minutes[1] and unlimited mobile-to-mobile and a one-time activation fee of $36. Figure 2.1 taken from apple.com summarizes the terms of contract.

AT&T Monthly Plans for iPhone

	$59.99	$79.99	$99.99
Minutes	450	900	1350
Night & Weekend Minutes	5000	Unlimited	Unlimited
Unlimited Data	✓	✓	✓
Visual Voicemail	✓	✓	✓
200 SMS Text Messages	✓	✓	✓
Rollover Minutes	✓	✓	✓
Unlimited Mobile-to-Mobile	✓	✓	✓

Figure 2.1 – AT&T monthly plans for iPhone in July 2007

The data plans, which range in price from $60 per month to $100 per month depending on the number of anytime calling minutes and with unlimited data access, are unique to the iPhone and will not apply to other AT&T handsets.

[1] That means if you don't talk as much one month, AT&T lets you keep your unused minutes for next month

Indeed, it is interesting to analyze the typical widespread form of sales and prices of other products in the smartphone market. Generally, most mobile phones sold are subsidized with an immediate rebate that comes from the service provider. Searching on the web it is common to hit on several forms of discounting and different offers of subscription with mobile phone included.

For example, BlackBerry models of Curve series have had a great success in US. In 2007 you could find a BlackBerry Curve 8310[2] at the value of $199 with a two-year contract. It is an excellent price obtained as a result of $200 discount and $100 mail-in rebate[3].

And service plan costs? Let's assume the same voice and data plan for the iPhone. For example, AT&T's data plans for its other phones include only the data access; calling minutes are purchased through a separate plan. So if you buy a BlackBerry Curve 8310, you can get a Blackberry Internet Service plan for $39.99 per month. While that will give you unlimited data access and 1,500 messages, you'll need to purchase a calling plan if you want to talk to someone. At the very least, that means an additional $39 per month for 450 anytime minutes. That's a monthly total of about $80. In other words, saving $300 of the $499 retail price of the BlackBerry Curve 8310 is only part of a deal that requires a two-year contract starting at $80/month. It's a business plan that tries to distract users from the significant investment they are making, and instead focus on how cheap the promotion appears to be. If a user decides he wants to change his phone or move or switch to another carrier, the provider charges an early termination fee to recoup the costs it invested in snagging the customer with that subsidy rebate. Considering other smartphones or service plans of other carriers, the costs are similar. Almost every mobile provider does the same.

So, on the whole, the iPhone data plans aren't a great deal more expensive, nor are they significantly cheaper than plans options with other carriers, but the difference is evident, as shown in Figure 2.2:

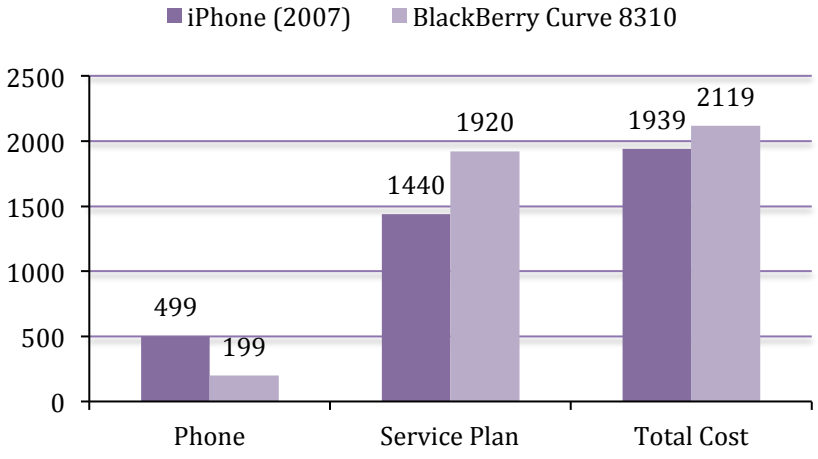

Figure 2.2 – Overall price comparison between iPhone and BlackBerry Curve 8310 in 2007 in US

Apple iPhone: $499 + basic $59,99/month service plan = about $1939 across two years.

[2] www.smartdevicecentral.com/article/RIM+Blackberry+Curve+8310+ATT/219971_1.aspx

[3] A form of promotional pricing in which consumers must mail in a piece of paper to get some money back. It is a marketing strategy that imposes some inconvenience cost on the consumer with the aim to segment the market.

BlackBerry Curve 8310: $199 + about $80/month service plan = about $2419 across two years.

Thus, what's the Apple's strategy? Partnering with AT&T allowed Apple to use its new smartphone and its position in consumer electronics as leverage to demand that AT&T play along on a number of experimental new ways to sell mobiles. The reasons why the Cupertino company created the device in exclusive collaboration with AT&T Mobility – Cingular Wireless at the time – are that Apple has be able to:

- offer simple rate plans that are priced competitively,
- change how phones are provisioned, enabling Apple to manage more of the user experience,
- change how mobiles are subsidized.

Instead of delivering the iPhone as a smartphone like BlackBerry's Curve, Palm's Treo or Nokia's N95, and then artificially discounting it by hundreds of dollars when tied to an expensive service plan, Apple stimulated the market with competitive service plan costs. The iPhone inverted the existing power dynamic between mobile handset manufacturers and the telecommunications companies that control the mobile networks on which these handsets operate. Until yesterday, service providers dictate terms to handset manufacturers, often specifying the features that should be included in a device, and even the price that can be charged for it. Apple changed that dynamic because it was able to strike a different kind of deal with carriers. AT&T had to cede virtually all control over the device to Apple in exchange for an exclusive deal on the phone.

Therefore, the decisive key factors of iPhone's business model were:

- **Competitive service plans.** Apple has set up its own subsidy plan, one that makes the iPhone more attractive, competitively priced, and changes the history and the evolutional direction of mobile industry. The iPhone is not a mobile phone, but a mobile Internet device, for this reason Apple wants to encourage consumers to subscribe service plans and hinted that a general lowering of costs frees the consumer from the worry of bill shock, increases the use of services and thus induces greater gains. However, the price to pay is a new intermediary between the network provider and users.

- **Subscription model, a new way to think about mobile devices.** Rather than leaving that customer with a device that grows progressively more obsolete over two years and then trying to sell them a new phone as the existing mobile business model does, Apple is pursuing a subscription model that will hook users on its phone, in a manner that works more like a Mac than a mobile. By leveraging the attractiveness of its hardware to bring service costs lower, Apple hopes to gain broad adoption for its phone just as consumers are demanding more functional devices. Other mobile platforms promise software upgrades and third party support, but simply have done very little to deliver that in a real way. Instead Apple releases regular updates and offers new software that users can download to customize and enhance their phone. This aspect will become the crucial and central factor of the following business model.

- **Media attention and expectations management.** During the early stages of product introduction, it is critically important to generate consumer excitement around a platform. Expectations are a key factor in consumer decisions about whether or not to purchase a new technology and can play the role of a driver of positive feedback in network markets. The most direct way to manage expectations is by assembling allies (in this case AT&T) and making grand claims about product's current or future popularity. On January 9th, 2007, Steve Jobs (co-founder and Chief Executive Officer of Apple) announced the iPhone at the Macworld convention[4], six months before its commercial release, astonishing the audience and receiving outstanding media attention. Every Jobs' keynote is perceived as a special event for his ability to give excitement and create favorable buzz and heady anticipation. Apple didn't announce all of its future plans at launch, and didn't allow third parties to set expectations. Instead, the company frequently surprised users with positive news of new features, deflected comparisons with existing smartphone platforms by focusing on the own platform's strengths.

- **Revenue-generating payments from carriers**. The key point of Business Model 2G. Apple has recouped its investments designing iPhone by service fees from AT&T that had to share a sizable cut of its monthly revenue. Revenue-sharing deals that some have estimated could be netting Apple up to $15 per month, per subscriber. Note that in these conditions AT&T couldn't subsidize a part of the upfront cost for the iPhone and customers had to pay full retail price for it.

As confirmed by Tim Cook (Apple's Chief Operating Officer) in a post-launch interview with Reuters in June 2008, "The business model of the first phone was that we received revenue-generating payments from carriers. That continues on the first-generation phone", he said. Indeed, this was true until the first generation of iPhone (iPhone G2), with iPhone 3G the business model changed.

2.2 Business Model 3G (2nd Generation)

We started guessing that things were changing already in February 2008, when Tim Cook said: "We're not married to any business model. What we're married to is shipping the best phone in the world […]". At the time the iPhone was only available in the US, UK, Germany, and France. There were all exclusive deals, with Apple doing their best to lock the iPhone down to single carriers in

[4] Macworld Conference & Expo is a tradeshow with conference tracks dedicated to the Apple Macintosh platform. It is held annually in the United States, usually during the second week of January.

each territory in exchange for lucrative and unprecedented revenue-sharing deals.

On May 6th, 2008, Vodafone announced that they signed a deal with Apple to sell the iPhone in Australia, Czech Republic, Egypt, Greece, Italy, India, Portugal, New Zealand, South Africa, and Turkey.

Subsequent announcements confirmed that Apple is moving away from exclusive one-carrier deals. For example in Italy, soon after Vodafone's announcement, TIM announced it would also be selling the iPhone. Carrier exclusivity was gone.

With the July 11th, 2008 release of the iPhone 3G (or second generation), Apple and AT&T changed the US pricing model from the previous generation. Following the *de facto* model for mobile phone service in the United States, AT&T could subsidize a sizable portion of the upfront cost for the iPhone 3G followed by charging a moderately higher monthly fees over a minimum two-year contract.

In the aforementioned interview with Reuters, Tim Cook announces the change of business model: "On the second-generation phone, the vast majority of agreements we have reached do not have those follow-on payments, so you can conclude that the vast majority of carriers do provide subsidies for the phone". Apple gave up after-sale fees from carriers, essentially a share of the customer's monthly fee, in new deals with the mobile phone service companies.

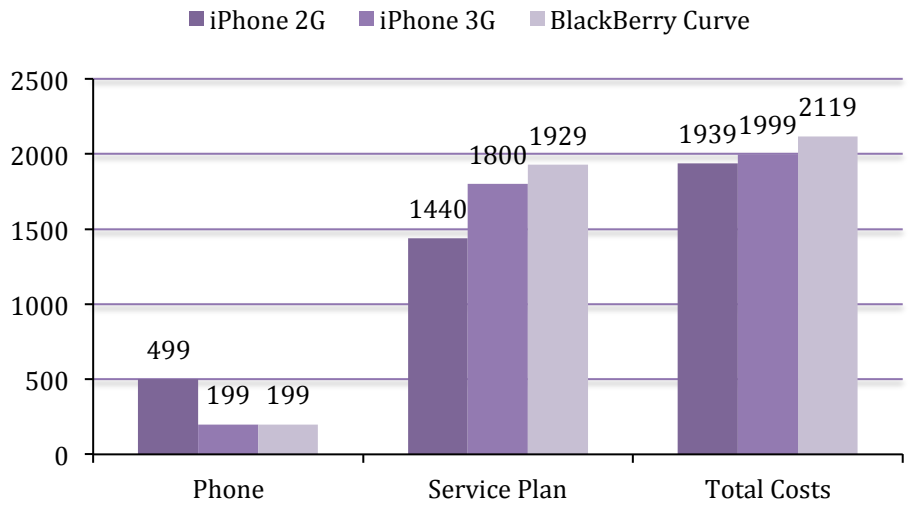

Figure 2.3 - Overall price comparison between iPhone 2G, iPhone 3G and BlackBerry Curve 8310 in US

Assuming the same voice, text and data plan:
Apple iPhone 2G (2007): $499 + basic $59,99/month service plan = about $1939 across two years.
Apple iPhone 3G (2008): $199 + basic $69,99/month service plan + $5/month text plan of 200 messages = about $1999 across two years.
BlackBerry Curve 8310: $199 + about $80/month service plan = about $2419 across two years.

As show in Figure 2.3 in which the previous chart also involves the case of iPhone 3G with 2008 AT&T rates, the total costs are slightly increased as a result of moderately higher monthly fees increased to offset a strong rebate of upfront costs of the device.

Indeed, from July 2008 the carriers' strategy is subsidizing the cost of the phone, making up for it in monthly charges, and they are no longer funneling a share of that monthly service revenue to Apple.

And Apple? What's its new business plan? As mentioned, on July 11th, 2008 Apple released in twenty-two countries (including the original six) the iPhone 3G, in which several improvements are presents in design, camera, battery life, telecommunication technologies (including UMTS/HSDPA), localization system (supporting GPS) and much more. But not only, Apple released iPhone OS 2.0, the new firmware for iPhone and iPod Touch with enhancement, new features and supporting native third-party applications (before only web-application in AJAX are permitted). But not only hardware and software improvements. On July 11th, 2008 the App Store opened, allowing users to buy and transfer applications to their device. Ten million applications were downloaded the first weekend.

3. App Store

The App Store is a service for the iPhone and iPod Touch created by Apple which allows users to browse and download applications from the iTunes Store that were developed with the iPhone SDK[5] and published through Apple.

Figure 3.1 – App Store

Developers are able to set any price above a set minimum for their applications to be distributed through the store, of which they will receive a 70% share. Alternately, they may opt to release the application for free and need not pay any costs to release or distribute the application except for the membership fee[6]. Applications are subject to approval by Apple for basic reliability testing and other analysis. The rejection of applications has been subject to much discussion in the press and in the developer community.

At launch, the store contained 500 third-party applications, 125 of which were free downloads. These third party applications range from business to game applications, entertainment to educational applications (there are twenty grouping categories), and many more applications available for free or for sale.

On September 28th, 2009, Steve Jobs said: "The rate of App Store downloads continues to accelerate with users downloading a staggering two billion apps in just over a year, including more than half a billion apps this quarter alone".

The milestones of this success story can be retraced in this data:

[5] iPhone SDK (Software Developer Kit) includes tools and technologies used to create iPhone applications.

[6] Developers can download iPhone SDK for free, but to sell on the App Store their creations have to join the iPhone Developer Program that provides an integrated process for distributing applications. This subscription costs either $99/year for the Standard Program, or $299/year for the Enterprise Program (intended for companies with 500 or more employees).

Date	Available apps	Downloads to date
July 11, 2008	500	0
July 14, 2008	800	10,000,000
September 9, 2008	3,000	100,000,000
October 22, 2008	7,500	200,000,000
December 5, 2008	10,000	300,000,000
January 16, 2009	15,000	500,000,000
March 17, 2009	25,000	800,000,000
April 23, 2009	35,000	1,000,000,000
June 8, 2009	50,000	1,000,000,000+
July 11, 2009	55,000	1,000,000,000+
July 14, 2009	65,000	1,500,000,000
September 9, 2009	75,000	1,800,000,000
September 28, 2009	85,000	2,000,000,000+
November 4, 2009	100,000	2,000,000,000+

Table 3.1 – Milestones of App Store (from wikipedia.org)

It's really considerable that Apple can achieve this great milestone in a such short period of time. In addition to these results, it is also relevant to consider the remarkable increases obtained in the sales of second generation model, totaling 33.75 million iPhones sold to date (Q4 2009).

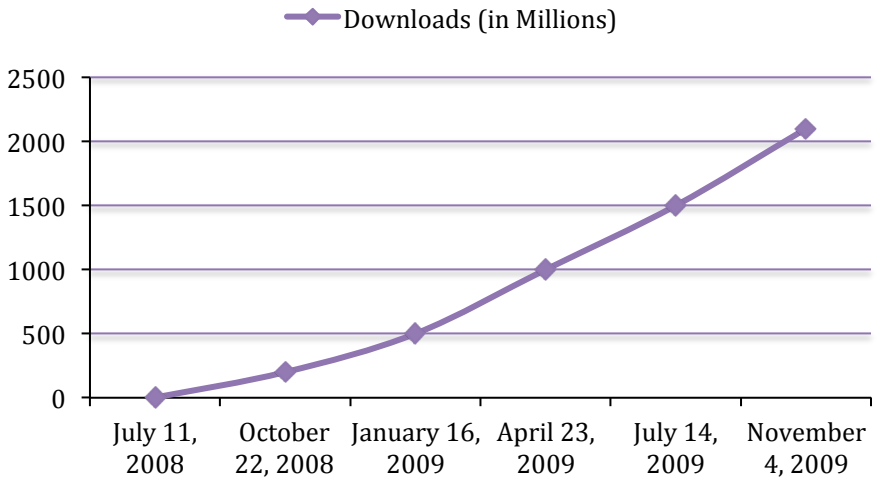

Figure 3.2 – App Store growth

Apple allows 70% of revenues from the store to instantly go to the seller of the application, and 30% go to Apple. This revolutionary store also offers a great opportunity for developers to show off their creative applications and even let them make enough money to quit the job as Steve Demeter who after developing the puzzle game Trism has generated $250,000 in profits in a few months. As Apple claimed, over 125,000 developers have joined the iPhone Developer Program.

On the other hand, this enormous achievement guarantees Apple huge gains. It has been predicted by Piper Jaffray[7] that the App Store could create a profitable marketplace with revenue exceeding $1 billion annually for the company.

In March 2009 in an interview with MacityNet, Eric Jue (Apple's senior product manager for iPhone worldwide product marketing) defined the App Store like the "core" and the "engine" of Apple's success in mobile market.

"The platform provided by the OS has created positive feedback loops so that a large community of developers has been willing to invest in iPhone technologies, elevate the platform and the iPhone user experience, and benefit themselves, Apple and consumers alike", Apple stated.

Reasons of the App Store's success:

- **Dev-friendly.** Availability of familiar coding tools facilitating new software. Apple offers a rich, robust, varied and well-documented SDK that includes tightly focused developer solutions and enables the developers to design, implement and realize their own iPhone/iPod Touch applications. Without this aspect the App Store wouldn't take off, and the App Store boosted the iPhone's success, not the contrary.

- **First-mover advantage.** Though Apple has entered into mobile industry only in 2007 as an outsider, the App Store was the first software store of third-party mobile applications. Before the App Store, it was never possible for a user to search, find, purchase, install and use one application so simply, without a computer and virtually everywhere, at home or on the street. No rival company was able to replicate and achieve the same kind of success. Microsoft has deployed a software store in imitation of App Store for Windows Mobile platform, but its Marketplace opened with barely a trickle of interest. RIM (Research In Motion) responded to the challenge with its BlackBerry App World. Android (mobile operating system sponsored by Google) launched Android Market, but for now, it doesn't attract the interest of developers. An early presence in the market is one of the best ways to secure such a leadership position.

- **Huge number of apps.** These factors involved an overwhelming increase that reached 100,000 unique applications to offer to its worldwide users. Apple shipped the iPhone for a full year before launching its SDK and store, building up an installed user base of about 6 million users. Once it opened the store, it unleashed a flood of new software and new buyers, creating a tidal wave of positive coverage. This enormous availability of applications results a decisive issue because it is one of the main reasons for which users choose the iPhone rather than other smartphones. Apple succeeds in combining both quantity and quality (assured by App Store approval process) in available applications.

[7] Piper Jaffray & Co. is a US middle-market investment banking firm that sells financial advice, investment products, and transaction execution within targeted sectors of the financial services marketplace.

- **Experience.** App Store is a part of iTunes Store, a software-based online digital media store that is the number-one music vendor in the United States with over 8.5 billion songs sold. So it is evident that App Store builds upon experience and previous successes. Well before it even launched the iPhone, Apple began selling iPod game software on a small scale. Apple perfected micropayments for music and video in iTunes, paving the way for a high volume, low cost mobile software store. Apple also built on its decade of progress in developing Mac OS X as a desktop platform, so it was able to release development tools that were both mature and familiar to a large number of coders. The iPhone's hardware also clearly evolved under the influence of lessons learned during the development of the iPod.

- **Rigid control.** The only way a developer can legally release an iPhone application – even for free – is through the App Store and under Apple's conditions. This is a controversial factor because involves both positive and negative implications. While Apple is roundly criticized for exerting too much control over its App Store, the reverse side is that there are no real malware problems and there's a lots of quality applications to pick from at reasonable prices. The Cupertino company has maintained a conservative stance that has frustrated developers who want the platform to move more freely. Apple initially held back trivial titles and fart apps, hoping to establish a serious streak of software; that restriction has since been relaxed. Furthermore, Apple restricts third party developers from creating apps that duplicate bundled application features in ways the company says will create confusion for users or for the platform. If all these limitations and restrictions clash against the claims of a part of developers, the openness principles and, perhaps, the competitive rules[8], it is clear that Apple's policy, beyond official declarations, is only one: to defend its business model – and until Apple succeeds in this, it will work.

- **Versioning.** In the information era, pricing policies are central and a key aspect of pricing information is to offer a product line and let users choose the version of the product most appropriate for them. Steve Jobs knows well this lesson, indeed, the release of iPod Touch is strategic. The iPod Touch – essentially an iPhone without phone and camera – served as a feature-rich iPod and the least-expensive way to explore the revolutionary "multitouch" interface that made the iPhone so famous. However, it is the first iPod with wireless access to the iTunes Store, and also has access to the App Store, enabling content to be purchased and downloaded directly on the device. In fact, all the applications developed with iPhone SDK are iPod Touch compatible, with the obvious limitation that they can't utilize the features provided by lacking hardware. Considering the lower price (starting from $199), iPod Touch is a solution that many consumers – not interested in Internet/telephone connectivity or not available to spend on a service plan – prefer. Furthermore, a

[8] The FCC (Federal Communications Commission) is investigating the refusal of Google Voice application as a possible example of anticompetitive behavior from Apple and possibly AT&T.

report[9] reveals that iPhone and iPod Touch owners occupy very different demographics. The iPhone owners are older and therefore have more money, more need of financial services, etc. iPod Touch owners are younger, more interested in gaming and music player; they download hundreds of apps and songs. In other words, the iPod Touch became a game device like PSP (PlayStation Portable), and because the App Store decided it. This also translates into loyalty and switching costs, allowing Apple to seamlessly "graduate" young users from the iPod Touch to the iPhone. The iPod Touch is quietly building a loyal base among the next generation of iPhone users, positioning Apple to corner the smartphone market not only today, but also tomorrow. According to Philip Schiller (Apple's senior vice president of worldwide product marketing), Apple has sold 20 million iPod Touch units to date. While everyone talks about the iPhone, the mobile device's non-telephone sibling the iPod Touch continues to grow its market share at a clamorous rate.

- **Application/Consumer-centric model.** As previously mentioned, the Apple's iPhone is designed to be a long-life platform with the aim of entrenching the installed user base. The iPhone smashed the carrier-centric structure of the wireless industry and unlocked a host of benefits for consumers, developers, manufacturers – and potentially the carriers themselves. Indeed, the iPhone has given all the power to consumers, developers, and manufacturers, constraining carriers to think about the market differently exploring new products and services that take advantage of the iPhone's capabilities. Consumers get an easy-to-use handheld computer.

- **Usability.** The App Store allows to browse and to search applications in various grouping categories, and it's easily possible to receive update. Apple has marked the way for usability and potential of such systems of content distribution. In the information era, in which "wealth of information creates a poverty of attention"[10], a searching, filtering, updating, distributing service is crucial because enhance the value of the underlying information to the consumer suffering from overload and dispersion of information.

Each of these key elements has been fundamentals, but the overall combination decisive.

3.1 A business under threat

Rather than depend on software/hardware capability issues, several restrictions and limitations of iPhone's platform depends by Apple terms of service. The Cupertino company tightly controls certain aspects of its product, specially those crucial ones in its business model.

[9] Report released by AdMob (one of the world's largest mobile advertising company) on June 16th, 2009.
[10] Quote by Nobel prize-winning economist Herbert Simon.

The hacker community has continually tried to exploit the full potential of device for freely using it and has found many workarounds, most of which are condemned by Apple and threaten to void the device's warranty. All iPhones must be activated with an authorized carrier before most features become available. “Jailbreaking” allows users to install applications not available on the App Store or modify basic functionality. SIM unlocking allows the iPhone to be used on a different carrier's network.

SIM unlocking. Initially all iPhones are sold with a SIM lock, which restricts the use of the phone to one particular carrier, as an example AT&T is the only authorized iPhone carrier in the United States. Various hackers have found methods to “unlock” the phone from a specific network and use it with an unauthorized carrier. This has been the main threat of Business Model 2G. In January 2008, more than a quarter of the original iPhones sold in the US were not registered with AT&T[11]. Disliking switching carriers or considering AT&T's monthly fees too expensive, many would-be users unlocked the device from exclusive contract by a not completely legal software downloadable via Internet. The damage is substantial, because Apple received a monthly percentage on each phone sold by traders and illegal unlocking takes away hundreds of millions of dollars in revenue. With the advent of the App Store and the beginning of the second phase of business strategy, carrier exclusivity was gone. Vendors in France[12], Hong Kong, Italy, New Zealand, and Russia (among others) sell iPhones not locked to any carrier. In US where AT&T remains the exclusive carrier until 2010, Apple engages in contrasting SIM unlocking, but it’s clear that now it’s mainly an AT&T’s problem.

Jailbreaking. The iPhone's operating system is designed to only run software that has an Apple-approved cryptographic signature. The file system is locked, meaning that you cannot browse or change files, and you can't install new applications without using App Store. These restrictions can be overcome by "jailbreaking" the device, which involves replacing the iPhone's firmware with a slightly modified version that does not enforce the signature check. Unlocking the file system, you have full control of all files and applications. Once jailbroken, iPhone users are able to download many applications previously unavailable through the App Store via unofficial installers such as Cydia, Rock App, Icy, and Installer. These are third party applications that works somewhat like App Store, with a major difference: any applications and tweaks can be published here, without going through Apple’s extremely strict and limited official way of distributing applications. Cydia is preferred by the community, while Rock App has a small catalog of mainly paid apps. Icy and Installer are officially unsupported by their developers and rarely used. A jailbroken iPhone or iPod Touch is still able to use and update applications downloaded and purchased from the App Store, but jailbreak voids Apple's warranty on the device.

Cydia founder Jay Freeman estimates that 4 million (out of 45 million) iPods and iPhones are jailbroken. This is the main and critical threat, jailbreaking are strangling the core of Apple iPhone’s Business Model 3G. And it’s a legal – not only business – issue.

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[11] According to Richard Doherty, co-founder and director of the Envisioneering Group (a US market research firm). Similar percentages were then confirmed by Apple.

[12] In France Apple was forced by the article L.121-1 of the Code de Consommation to sell even a iPhone’s version without SIM lock.

Jailbreak violates the Apple iPhone Software License Agreement and since modifies the iPhone's firmware it constitutes a copyright infringement and a DMCA violation. The Digital Millennium Copyright Act (DMCA) of 1998 establishes that "no person shall circumvent a technological measure that effectively controls access to a work protected under this title". But a controversial legal issue began.

In February 2009, Electronic Frontier Foundation (EFF)[13] filed three exemption requests[14] with the United States Copyright Office aimed at protecting users from legal threats under the DMCA. As part of the 2009 DMCA triennial rulemaking, EFF has asked to recognize an exemption to the DMCA to permit jailbreaking in order to allow iPhone owners to use their smartphones with applications that are not available from Apple's store. "Carriers have threatened cell phone unlockers under the DMCA to protect their anti-competitive business models, even though there is no copyright infringement involved in the unlocking", the EFF states.

Apple responded that jailbreaking the iPhone would be copyright infringement due to the necessary modification of system software. The Cupertino company also defends the App Store restrictions and claims safety, reliability, security problems for jailbroken iPhones. These replies are seem simple verbal threats – moreover EFF commented that "this sounds like FUD"[15] – but Apple perhaps realizes that following a steady protection strategy through legal battle can be risky as the Lexmark case[16] teaches.

Probably the best way to defend the interests built around the iPhone'platform is by making always more difficult to jailbreak the device avoiding that a simple user-friendly jailbreaking method widely spreads between users.

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[13] The Electronic Frontier Foundation (EFF) is an international non-profit advocacy and legal organization based in the United States with the stated purpose of being dedicated to preserving the right to freedom of speech, such as protected by the First Amendment to the United States Constitution, in the context of the digital technology age (see also digital rights). Its stated main goal is to educate the press, policymakers and the general public about civil liberties issues related to technology, and to act as a defender of those liberties.

[14] The first request is to give DMCA exemption to amateur creators that remix copywrited material to create new works for noncommercial use (for example on YouTube). The second request is for DMCA exemption to legalize something called "jailbreaking": unlocking iPhone and other cellphone devices internal system in order to operate and run other applications then those provided by cell phone provider, for example Apple iTunes App Store. The third is request to renew previously approved exemption that grants permission to unlock cell phone handsets and use them with any carrier.

[15] Fear, Uncertainty, and Doubt (FUD) is a tactic of rhetoric and fallacy used in sales, marketing, public relations, politics and propaganda. FUD is generally a strategic attempt to influence public perception by disseminating negative information designed to undermine the credibility of their beliefs.

[16] Lexmark International, Inc. v. Static Control Components, Inc., 387 F.3d 522 (6th Cir. 2004), was an American legal case involving the computer printer company Lexmark, which had locked its printers using a microcontroller so that only authorized toner cartridges could be used. The United States Court of Appeals for the Sixth Circuit ruled that circumvention of Lexmark's ink cartridge lock does not violate the Digital Millennium Copyright Act.

3.2 Adoption Dynamics

STRENGTHS AND WEAKNESSES, LESSONS E REFLECTIONS ABOUT THE MODEL

Applying a successful revolutionary and proprietary control strategy – that is a "play performance"-oriented situation among the four hypothetical generic strategies for companies seeking to introduce new information technology into the marketplace – Apple was able to ignite positive feedback for the iPhone.

By leveraging the attractiveness of its mobile Internet device, the Cupertino company entered into the smartphone market as an outsider and changed the way of thinking about mobile handsets and evolutional direction of wireless industry introducing a subscription model that stimulated the growth of market through more functional devices that works more like a Mac than a mobile. Competitive and flat-rate data service plans, expectations management and – mainly – exclusive and revenue-sharing deals with carriers are the principal key factors that allowed Apple to gain broad adoption for its mobile platform. These were the weapons used during the launch phase.

Indeed, adoption of new technologies in positive-feedback systems follows a predictable typical pattern known as S-shaped, or "logistic", curve as illustrated in Figure 3.3. Three phases are presents: slow growth during launch, then a steep rise during takeoff as positive feedback kicks in, followed by leveling off as saturation is reached.

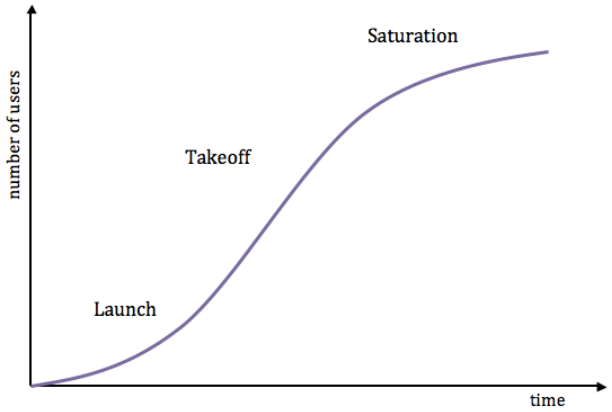

Figure 3.3 – S-shaped pattern of growth in adoption dynamics

After ten fiscal quarters since iPhone launch, the huge success undoubtedly shows a placement in takeoff phase. Apple before created a new market, a new concept of use, and then maximized profits. With a consolidated position reached during first 12 months, iPhone's platform revolutionizes the mobile industry opening to developer community and increases its business with an exponential growth. First step preparatory to second phase. Key points have been the App Store and development platform; they have created positive feedback loops so that a large community of developers has been willing to invest in iPhone technologies elevating the platform and the iPhone user experience. Without "dev-friendly" openness the App Store wouldn't take off, and the App Store boosted the iPhone's popularity, not the contrary.

The Apple's controversial conduct in maintaining a tight control over certain aspects – specially over crucial elements of its business model – has frustrated developers and users who want the platform to move more freely and to utilize all its capabilities without limitations. But while Apple is roundly criticized for exerting too much control over its App Store, the flip side is that there are no real

security problems and there's a lots of quality applications to pick from at reasonable prices. This enormous availability of applications results a decisive issue because it is one of the main reasons for which users choose the iPhone rather than other smartphones.

First-mover advantage in a new applications distribution concept, long experience deriving by other markets, versioning strategy by introducing iPod Touch are only the main feeder factors of the App Store's success – and that have allowed Apple to differentiate its product and to assert itself over rivals.

How long will takeoff phase last? How will adoption dynamics proceed? How close is saturation phase? This will depend on how the Cupertino company will use the acquired advantages, how will react to rivals' countermoves and how will change its business model. Apple is playing just the beginning of a game whose delicate balance and future development will rely on what strategies to apply in dealing with these battlefronts:

- always more competitive rival companies,
- carriers deals,
- worrying increase of jailbreaking phenomenon,
- legal disputes with EFF on DMCA triennial rulemaking, on contested patents against Nokia, and on eventually other actions – for now only threaten – about jailbreaking practices,
- participation of developer community,
- and – mainly – users' consensus;

and how these mutually dependent forces will interact between them.

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