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What factors contributed to the success of Apple's iPhone?

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Abstract — **Unknown to most North American consumers, a mobile data and Internet service in Japan called i-mode has been highly successful in that country for the past decade. Unfortunately, mobile data services in North America have lagged behind many European and Asian countries. However, the situation changed rapidly with the iPhone, launched in the US in June 2007. Consumers lined up for days for the chance to purchase one, and over 500,000 units sold on the first weekend. Since that time, over 42 million iPhones have been sold, arguably making it one of the most successful mobile phone products ever launched. What is it that makes the iPhone such a success? In this paper we define a set of success criteria to investigate the success of the iPhone and propose a comprehensive success model. The success model can be used by both academics and practitioners to understand the reasons why, and ways to ensure that mobile data and commerce services become successful.**

Keywords - mobile business model, success factor analysis, mobile Internet, mobile data services, iPhone, SmartPhone

I. INTRODUCTION

When the Apple iPhone was announced in January 2007, the response was overwhelming. Within two months of the announcement, the search term 'iPhone' yielded over 60 million web page references in Google [1]. When iPhone finally launched in June 2007, consumers lined up for days for the chance to purchase one and over 500,000 units sold on the first weekend. Since that time, millions of iPhones have been sold, arguably making it one of the most successful mobile phone products ever launched. Why has the iPhone been so successful? The objective of this paper is to provide evidence showing the factors that have contributed to success and the lessons that can be learned from the iPhone. The remainder of this paper is organized as follows. Section II provides the criteria used to determine the success of the iPhone, as well as support for the assertion that the iPhone can be deemed a success. Section III details the success model containing factors that have been identified as contributing to the successes of the iPhone. Section IV provides lessons learned from the iPhone launch and subsequent strategies and tactics. Section V outlines the contributions of this research to academics and practitioners as well as the research limitations and future research directions.

II. EVALUATION AND VALIDATION OF SUCCESS

To adequately judge whether the iPhone is successful, a set of 'success' criteria was developed. These success criteria are based on an extensive literature review as well as in-depth Internet searches. The success criteria are market size, share and growth rates, average revenue per user (ARPU) and churn rates and content/services, as well as consumer satisfaction and mobile usage.

A. Market Size, Share and Growth Rates

In the 30 months from its launch in July 2007 to December 2009, Apple sold over 42 million iPhone units [2]. This translates into a Compound Annual Growth Rate (CAGR) of approximately 480%. Analysts predicted anywhere between 10 and 45 million iPhone sales in 2009 [3], a number which Apple met when they sold approximately 25 million iPhones in that year [2]. The iPhone has achieved strong market share since its launch, from a 4% market share in July 2007 to 30% in September 2009 [4]. This represents a market share CAGR of 145%, compared with 2% for Research in Motion (RIM) over the same 27 month period. Perhaps more indicative of iPhone success is consumer intention to buy. While the intent to buy is cyclical (based on expected new phone releases), a recent September 2009 survey shows that 36% of people planning to buy a Smartphone in the next 90 days were planning to buy an iPhone, versus 27% for RIM [4]. Additionally, iPhone appears to be making gains among business users. Based on a August 2008 survey of technology professionals, 17% indicated intentions to buy iPhones, up from 13% in May 2008 [5]. For businesses with fewer than 500 employees, 34% reported using iPhones compared to 38% using RIM, indicating iPhone is making inroads among business users [5]. Finally, it is important to look at the market shares and intentions to switch for AT&T, the wireless carrier that provides iPhone services in the US. From July 2007 (the launch of iPhone) to December 2008, AT&T's market share increased from 28% to 31%, while Verizon gained only 1% over the same time period [6-7]. Since the iPhone announcement in January 2007, AT&T has ranked as the carrier that most consumers indicated they planned to switch to, a trend attributable to the iPhone [8], with 33% of survey respondents indicating a jump to AT&T versus only 24% for Verizon [9]. Thus iPhone can be considered successful from a market size, share and growth perspective.

B. ARPU and Churn Rates

Average revenue per user (ARPU) provides the company a granular view (at a user or unit basis) and allows it to track revenue sources and growth. Churn rate refers to the proportion of contractual customers or subscribers (typically called postpaid) who leave a supplier during a given time period. Both are commonly used success indicators in the wireless telecommunications industry. AT&T reported wireless fourth quarter (4Q) 2009 postpaid ARPU of $61.[13], a 2.6% increase over 4Q 2008. Postpaid data ARPU was $19.[16], up 17.5% during the same period [10], much of which can be attributed to iPhone subscribers. AT&T reported iPhone subscribers ARPU was approximately 60% higher than the average subscriber, with significantly lower churn rates than the overall AT&T subscriber base [11]. Postpaid churn dropped to 1.19%, with AT&T recording six consecutive quarterly periods of reduced churn [10], a trend which is most likely attributable to the iPhone. From an ARPU and churn perspective, iPhone can be considered successful.

C. Content/Services

The iPhone is not just a phone, as evidenced by the vast amount of content and services. Apple opened up its App Store (distributing applications for iPhone) in July 2008. It was estimated that Apple sold approximately $1 million in applications each day during its first month of operations [12]. By December 2008, it was estimated that 300 million software applications had been downloaded, with Apple revenues totaling $45 million [13]. As of January 2010, Apple reported that over 3 billion applications had been downloaded from the App Store [14]. This volume of applications was achieved in only 18 months. The Apple App Store has also been recognized by analysts as the top mobile applications source. In a recent ranking, the Apple App Store scored 90% in the categories of time to market, attracting developers, device adoption/rollout, interface/user experience, number/variety and appeal of apps [15]. This can be compared to other mobile marketplaces that only scored between 30% and 70% [15]. The success of the App store is clearly part of the success of the iPhone as well.

D. Consumer Satisfaction

Consumer satisfaction among initial buyers of the iPhone has been rated very high. A September 2009 survey indicated that 74% of iPhone buyers are 'Very Satisfied" (compared with 43% of RIM buyers) [4]. Given that iPhone wireless services are provided by AT&T, it is also important to look at consumer satisfaction figures for AT&T. While only 31% of AT&T customers gave a "Very Satisfied" rating (versus 50% for Verizon) [9], more people indicate they will switch to AT&T. It can be inferred that the iPhone compensates for lower AT&T customer satisfaction figures, thus indicating the success of iPhone.

E. Mobile Usage

Sales, market share, growth and other data provided to determine the success of iPhone are useful, but what about the actual usage of the iPhone? If it is simply being used to play games, music and for voice communications, can it be deemed successful from a mobile data standpoint? According to statistics from M:Metrics, a mobile research organization, iPhone users are far more likely than other Smartphone users to utilize mobile data services [16]. In addition, M:Metrics cited data showed that 85.9% of iPhone subscribers in the US used the device to go online in their first three months of use [17]. This data shows that iPhone is successful as a mobile data interaction device, more so than other Smartphone products.

III. ANALYSIS OF SUCCESS FACTORS

In an effort to determine the factors that contributed to the success of the iPhone, we performed an extensive literature review and Internet search, and then categorized the success factors so that we could more succinctly assess how and why iPhone is so successful. The business model of iPhone is hypothesized to be one of its reasons for success. However, business models alone cannot fully explain the successes of each of these products/services. It has also been recognized that user acceptance is key to success. However, most user adoption studies focus on the user's reasons for adoption, not the factors that affect the success of products or services. How to identify and meet consumers' needs based on their demographics, culture, and preferences are critical for success [18]. Finally, since mobile communications are typically controlled by government regulations, and mobile data services are delivered through the mobile communication infrastructure, the success of mobile data services also depends on these environmental factors [19-20].

Therefore, we propose a success model which utilizes a larger number of factors that explain the successes achieved. As shown in Figure 1, these success factors can be categorized by consumer (demographics, user preferences and culture), corporate (business model, technology, marketing and service providers) and environmental (regulatory, infrastructure). This comprehensive model incorporates the relevant factors which can explain the success of the iPhone. Whether overtly, or perhaps in some cases by chance, Apple has been able to capitalize on every one of the success factors, in essence riding a 'perfect wave' of factors and has achieved incredible success with the iPhone product.

A. Consumer Factors

Demographics - Apple made an effort to target the right consumer group. The typical iPhone consumer is more likely to be male, 25-34 years of age, college educated and with an income of greater than $100,000 [16]. Another

study reaffirmed the age factor, indicating 50% of iPhone consumers are under the age of 30, technologically sophisticated, and usually members of the professional, scientific, arts/entertainment or information industries. In addition 75% are reported to be previous Apple customers [21]. These demographics can be considered similar to the profile of the typical iPod/iTunes consumer, with which Apple has extensive experience and success. Apple took the lessons learned from the iPod/iTunes demographic and successfully applied them to the iPhone. More recently, to be successful, Apple and AT&T have learned to target 'mainstream America' [22] by reducing price of the iPhone and promoting applications that have appeal to a wide variety of demographics. The majority (61%) of iPhone use is for personal, not business use, while another 24% use the phone for some business, but pay the bill themselves [23], leaving only 15% for truly business use. Again, iPhone has succeeded by focusing on personal use, while technologically ensuring iPhone is appealing to both personal (through gaming and entertainment applications) and business users (through its iPhone in the Enterprise and Microsoft Exchange capabilities).

User Preferences - Smartphone and mobile Internet user preferences in the US are some of the most important success factors of iPhone. Funk [24] indicated the need for increased capabilities of mobile phones to allow for both reach and richness of content, as US consumers expect richness due to their experience with fixed line Internet. User preferences also factor in the provision of content, as consumers in the US may be unwilling to pay for content since they are used to getting it for free [25]. US consumers are not convinced that they need mobile services that they think are too complicated [26], showing the need to 'un-complicate' the mobile Internet experience. A 2004 MIT survey showing US consumers rate the cell phone as the most hated invention that they cannot live without, with 30% or respondents indicating this [27]. Clearly, mobile Internet user preferences in the US are strong, and perhaps difficult to fulfill. While the American Internet experience may not be the norm for other nations [28], it does strongly affect US user preferences for mobile Internet. "People in the US can be just as enthusiastic about mobilizing technology, but they often think in terms of shrinking and mobilizing the PC and Internet, rather than growing the cellphone" [29]. Thus, much of the success of the iPhone can be attributed to its 'uncomplicated' yet effective ability to replicate much of the computer (in terms of applications) and fixed-line rich Internet experience (through the Safari browser) on the mobile phone. In essence, the iPhone may be the device that Michael Mace referred to in 2006 [29] when he discussed shrinking the PC and Internet to a mobile phone. With respect to specific iPhone user preferences, prior to launch of iPhone 3G a survey was completed to ascertain which features iPhone users wanted to be added. The top 5 responses were 3G capability (19%), 3rd party

software (18%), GPS (15%), e-mail integration (10%) and voice recognition (8%) [30]. All of these capabilities were added when the iPhone 3G launched in July 2008, either by Apple (3G, applications, GPS, e-mail) or 3rd party software developers (applications, voice recognition). Clearly, Apple is responding to user preferences and needs with successive generations of the iPhone.

Culture - Limited research on cultural factors related to US adoption and use of Smartphones and mobile Internet has been completed. Those that have cite a number of factors specific to the US. Real-time gratification is relatively more important to US consumers, which can be gained through the value of entertainment applications in m-commerce [31]. Thus, part of the success of iPhone can be attributed to its provision of real time gratification through entertainment applications such as games, etc. Another study showed perceived security (extent to which people believe the Internet is secure), perceived enjoyment (rewards derived through use of technology) and subjective norms (use of an innovation tied to one's social status) were all found to be higher in the US [32]. iPhone customers achieve personal enjoyment through the multitude of entertainment related applications available and perceived security in that all applications downloaded to iPhone have been approved by Apple, giving users that much-needed sense of security. Finally, subjective norms and social status are inherently part of iPhone user experience, with iPhone (much like the iPod) being seen as a status symbol.

B. Corporate Factors

Business Model - What is most important about the business model for the iPhone is that Apple controls and coordinates the portions of the value chain where they can add value, leaving the other areas to organizations with specific competencies. In this way, Apple maintains control, but is able to provide a better product/service to consumers. Within the business model, Apple controls and coordinates the device, platform, application portal, online/offline mediation as well as acting as a service provider through the applications they develop for iPhone. Apple controls the pieces of the value chain where it has core competencies, leaving the network provision to AT&T and majority of service provision (i.e., application development) to third parties. This model is somewhat similar to the business model employed for its iPod business, where Apple draws upon its core competencies of marketing and product innovation [1] in device manufacturing, music platform, the iTunes portal, and the offline/online mediation, leaving content development to musicians, etc. and network provision to Internet service providers. Apple has proven this business model with the success of the iPod and iTunes in music and replicated it with iPhone. What is interesting is that in 2008, Apple's COO indicated that Apple isn't married to one particular business model [33] for the iPhone. Apple has proven that

they are willing to dramatically change the elements of the business model when required. The most obvious example of this is Apple's decision to allow third party service providers to develop applications for iPhone. Initially no user-installed software was allowed [1] but that changed in July 2008 with the opening of the App Store. The business model changed with the demands of the market, with Apple relinquishing control of application development, but maintaining control of the key aspect of distribution. In this way, they provide the market with what they want, while ensuring the quality of the applications that can be placed on the iPhone.

Technology - One of Apple's identified core competencies is product innovation [1]. From a technology perspective, Apple has used this core competency to develop a highly functional and usable mobile device. While a detailed analysis of iPhone technology is beyond the scope of this paper, there are a few major technology related factors that have contributed to the success of the iPhone. To begin with, the simple array of buttons on the iPhone appeals to consumers who have been bombarded with menus, icons, etc. [34]. As mentioned earlier, US consumer preferences dictate that they may not use mobile Internet devices they deem to be complicated. Apple has addressed this preference through their innovative and intuitive interface. Secondly, the relative quality of mobile browsing experience is very high with iPhone, mainly due to Apple's implementation of the Safari browser and its ability to render standard web pages without the creation of specialized mobile versions [35]. This is especially important to US consumers looking to replicate their fixed-line Internet experience on a mobile phone, as well as from an international perspective, where content already created in other countries will be readily available on iPhone with little or no modification. Finally, although Apple designs and manufactures iPhone hardware, they have realized that from a technology perspective, the future of mobile phones will be differentiated by software, not by hardware [12]. By realizing this and promoting the App Store, Apple can concentrate on hardware innovations and foster third parties in developing innovative software applications. Given the launch of the iPhone 3G and the App Store occurred at roughly the same time, it is difficult to determine if the success of iPhone 3G is due to the hardware, or perhaps due to the array of applications that have presented themselves to customers. Regardless, the combination of these two events has fueled the success of the iPhone.

Marketing and Branding - Few would dispute Apple's abilities in marketing products, based for example on the success of the iPod and iTunes. In fact some have cited marketing as one of Apple's core competencies [1]. Apple has marketed iPhone more like a service than a product [36]. Recent Apple advertising for iPhone stresses the capabilities of iPhone and related third party applications rather than focusing on the technology itself. From a pricing perspective, the iPhone has followed the typical Apple strategy of skimming and versioning, where prices are set high initially to gain high profits from early customers (skimming) and then pricing is dropped (in this case, mainly due to AT&T subsidies) to increase reach to the general public (versioning). The partnership with AT&T and subsidies provided have contributed to Apple's ability to version pricing, currently as low as $99 in the US, compared to a launch price of $599 for the original iPhone. This subsidized pricing has contributed to the iPhone's success, as it has allowed the iPhone to be mass-marketed to the general US consumer. Product pricing is also versioned by geographic location [21] depending on what the specific market is willing to pay. For example, in Japan, iPhone was being distributed by Softbank for free with a two-year contract [37], while it sold for $99 in the US (also with a two-year contract). In addition to marketing efforts, Apple has developed a brand image (as evidenced by the 'iPod' name becoming synonymous with MP3 players) which has created an extremely loyal customer base. This customer loyalty has led Apple consumers to build a pent-up demand for future Apple products and an attachment to the iPhone, leading to high switching costs, as iPhone owners are unlikely to switch to a competitor Smartphone.

Content Providers - Initially, Apple did not allow third party software on iPhone, but reversed that decision when it launched the App Store in July 2008. At that time, most of the hype was focused on the software applications, even as Apple launched the 3G version of iPhone [38]. Apple has set itself up as the intermediary for software distribution, providing developers with 70% of revenues and keeping 30% to cover its costs and provide some profits. In essence, Apple has given up control of the software development aspect of iPhone (application development is open to all developers), but maintained strict control over the software distribution (all App Store applications must be approved by Apple). This can be likened to its strategy for the iPod, where content providers (i.e., musicians) have helped drive iPod business [1] through iTunes, which has proven highly profitable for Apple. In addition, by maintaining control over software distribution, Apple controls the security aspect of the applications, allowing them to play gatekeeper and ensure that applications downloaded to the iPhone will not pose security issues for iPhone users. From a developer standpoint, Apple created a successful platform to increase consumer interest in mobile services through innovative applications (i.e., created consumer demand) while simplifying the process for software developers [38] through the introduction of a Software Development Toolkit. Apple provides developers opportunities through a number of different revenue models, but to date it is unknown what percent of developers are profitable, or which revenue model will be the most successful. From the perspective of Apple, the App Store has proven profitable virtually since it

opened, with Apple revenues estimated at $45 million in its first six months of operation. Major players such as Facebook, Twitter, eBay and Sega have already created applications distributed through the App Store. Finally, if emulation is an indicator of success, then the App Store must be deemed successful, as Google (for the Android) and RIM have subsequently initiated their own online application stores. From a consumer perspective, Apple is making it easy for consumers to find quality software from third party service providers. This was something users demanded, and Apple answered, again fueling the success of the iPhone. With the launch of the App Store, the iPhone became a viable gaming platform [12]. 90% of the top paid applications all-time fall under the entertainment and gaming category [39]. With the mobile gaming market projected to grow faster than the overall gaming market [40], this should further enhance the success of iPhone.

Network Operator - It would not be possible for the iPhone to succeed without a strong partnership with a US wireless carrier. The partnership between Apple and AT&T can be considered 'win-win', as both partners gain benefits. From an AT&T perspective, with the US market potentially moving towards a device-centric business model, the partnership with Apple can be seen as a highly strategic move. To add subscribers in the saturated US market, carriers need to 'steal' them from other carriers [22] or upgrade current subscribers, which iPhone has succeeded in doing. In addition, iPhone has had a major impact on carriers in helping sell consumers on the idea of the mobile Internet [22]. Prior to the iPhone, AT&T had limited success in convincing customers about the need for mobile Internet. Perhaps most importantly, as shown earlier the partnership with Apple has had positive effects on ARPU at a time when voice revenues are declining. From the perspective of Apple, AT&T gave access to a sizable subscription base of consumers, plus subsidies for each iPhone sold, to allow iPhone to be both mass-marketed and profitable for Apple. At the same time, AT&T made concessions to Apple, allowing them to sell iPhone applications and music without sharing any revenue, something that was not allowed with other AT&T device manufacturers prior to Apple [41]. The emergence of Apple in the mobile phone market has changed the game, with the balance of power tipping in favor of device manufacturers, where previously carriers controlled the device side of the market [42].

C. Environmental Factors

Regulatory - There is one main regulatory issue that has and can continue to impact the success of iPhone. Currently, the iPhone in the US is sold 'locked', meaning that it can only be used with one provider (i.e., AT&T). A growing number of public interest groups want the iPhone 'unlocked' in the US [41]. In many European nations, competition laws do not allow the sale of locked mobile phones [43], a situation which could eventually present itself in the US. Currently, operators with exclusive agreements to sell the iPhone in countries where there are regulatory restrictions not to lock iPhone typically have one price for iPhones tied to a contract with that operator, and a much higher price for the sale of an unlocked phone that can be used with any carrier. Some experts believe the sale of unlocked phones may simply accelerate what some believe to be Apple's ultimate strategy of selling phones to/through multiple providers in each country [43]. However, in the US, it is difficult to determine how this will affect Apple moving forward. On the one hand, selling through multiple carriers could dramatically increase sales and market share figures for the iPhone. On the other hand, AT&T currently subsidizes the iPhone, paying a sizeable amount to Apple for each iPhone sold [44] with the expectation that this subsidy will be recouped over the consumer contract period. This allows iPhone to be sold to consumers for $99 or more depending on the model, and consumers have become accustomed to this pricing. This price drop has fueled sales of the iPhone. If unlocking regulations proceed and Apple/AT&T are forced to sell an unlocked version of the phone, will consumers be willing to pay the potentially higher prices that may result? Most likely, AT&T will not continue to heavily subsidize iPhone if it is available to all carriers. From this standpoint, the partnership with AT&T and the current regulatory environment with respect to locked phones can be considered as a key element of the iPhone's success.

Infrastructure - The US consists of a fragmented set of wireless technologies and standards, with both GSM and CDMA based carriers. The iPhone 3G utilizes GSM-based standards, making the partnership with AT&T the most lucrative in terms of access to subscribers. However, moving forward to 4G and beyond, if there is a convergence of standards and interoperability, a much larger market in terms of potential subscribers could present itself for the iPhone. While wireless infrastructure issues may not have dramatically impacted the success of the iPhone historically, changes in wireless infrastructure could have a dramatic impact on future success, and Apple would be well advised to monitor developments in 4G technologies and beyond. Another factor to be considered is the widespread fixed-line Internet access infrastructure in the US which may have led to the slow adoption of mobile Internet services. As discussed previously, iPhone is adept at replicating the fixed-line Internet experience, which gives the iPhone a clear advantage in the US (until competitors potentially catch-up to its technologies and functionality with respect to mobile web browsing.) To do so, Apple has capitalized on the Wi-Fi infrastructure in the US, as the iPhone is capable of utilizing Wi-Fi connection to access the fixed-line Internet giving users get the same level of services with reduced cost and increased responsiveness.

IV. FINDINGS AND DISCUSSION

The preceding analysis of the success factors of the iPhone leads to lessons that can be learned when developing and launching mobile products and data services. While some of these lessons may be considered specific to Apple, most of them can be replicated by other Smartphone manufacturers and potentially even other technology providers:

- **Demographics – Target the right group of adopters:** Apple targeted young, technology savvy individuals rather than business. While other Smartphone and mobile data and Internet services targeted business (e.g., RIM), iPhone proved there is a strong market in personal use. Rather than assuming an initial target of business, and expecting consumers to follow, it is possible to reverse this, targeting personal usage first with business usage following.

- **User Preferences – Understand and meet preferences:** Apple focused on entertainment applications and services rather than business applications, clearly meeting the needs of their consumers. By fully understanding user preferences and designing content and applications that meet these preferences, there is a large untapped market potential in mobile data and Internet products and services.

- **Culture – Find and exploit cultural niches:** While culture varies by country and within countries, it is important for the iPhone to find cultural 'niches' that it could fill. These cultural niches have been filled for the most part through the applications and services provided, rather than the mobile devices, indicating that regardless of the hardware platform, cultural preferences can be met through software and content.

- **Technology – Hardware plays a 'best-supporting' role:** While iPhone understood that applications and content were most important, an element of control over the hardware and technology was necessary for success. The iPhone achieved success through Apple's core competency in product innovation, ensuring that iPhone was highly functional and capable of producing a rich mobile Internet browsing experience. Thus it is highly important to ensure that technology plays a strong supporting role to applications and content.

- **Business Model – Develop a business model based on core competencies:** The device-centric business model of the iPhone [45] has been the strongest factor in the success. The iPhone launch went against traditional wireless business models and showed that device manufacturers could successfully control the necessary portions of the value chain and allow all players to be profitable and successful.

- **Marketing – Focus on fulfilling consumer needs:** For the iPhone, Apple markets the services provided, rather than the hardware, focusing on what the products and services can do for the consumer, rather than the specifications. Key to success is not focusing on products, but rather the fulfillment of consumer needs.

- **Service Providers – Maintain control through content access and distribution:** Apple understood that applications and content are best left for third parties to develop, but maintaining control over access and distribution (including security) were the key elements of the value chain where it had core competencies. It proved that you do not need to perform the tasks in every part of the value chain, but rather coordinate and control the value chain to allow success for all players.

- **Regulatory – Make regulations work for you:** Rather than working against regulations, Apple has accepted the regulatory factors, and worked within them to launch products and services that comply yet achieve high levels of success. Too much corporate energy can be expended fighting regulations, when success can be achieved by working within them.

- **Infrastructure – Take advantage of the available infrastructure:** By working within the infrastructure of the individual countries and exploiting areas underserved due to infrastructure issues, the iPhone has been able to succeed. Due to the strong fixed line infrastructure in the US, Apple stressed richness in its applications, attempting to replicate user experience with fixed line Internet. Much like the regulatory factors, by working within and taking advantage of the existing infrastructure, companies in the mobile industry can achieve success.

V. CONTRIBUTIONS, LIMITATIONS AND FUTURE RESEARCH

This research contributes to academics as it develops a theoretical success model based on real-life successes of the iPhone. Academics can use the theoretical model generated through this research with the knowledge that they have been proven via the actual successes of the iPhone. Often, theoretical models are developed and then applied to (or authors report that they can and should be applied to) real-life business situations. We have taken the opposite approach in this paper and developed a theoretical success model based on actual business successes. This paper provides academics with a framework that can be used to examine the successes of other mobile data and mobile commerce products and services. We would welcome other researchers to do this and expand on and improve the theoretical success model we have developed here.

Practitioners will benefit from this research as it provides a 'roadmap' of how to achieve success in the mobile data service industry. By applying the lessons learned and detailed in this paper, mobile data service and mobile
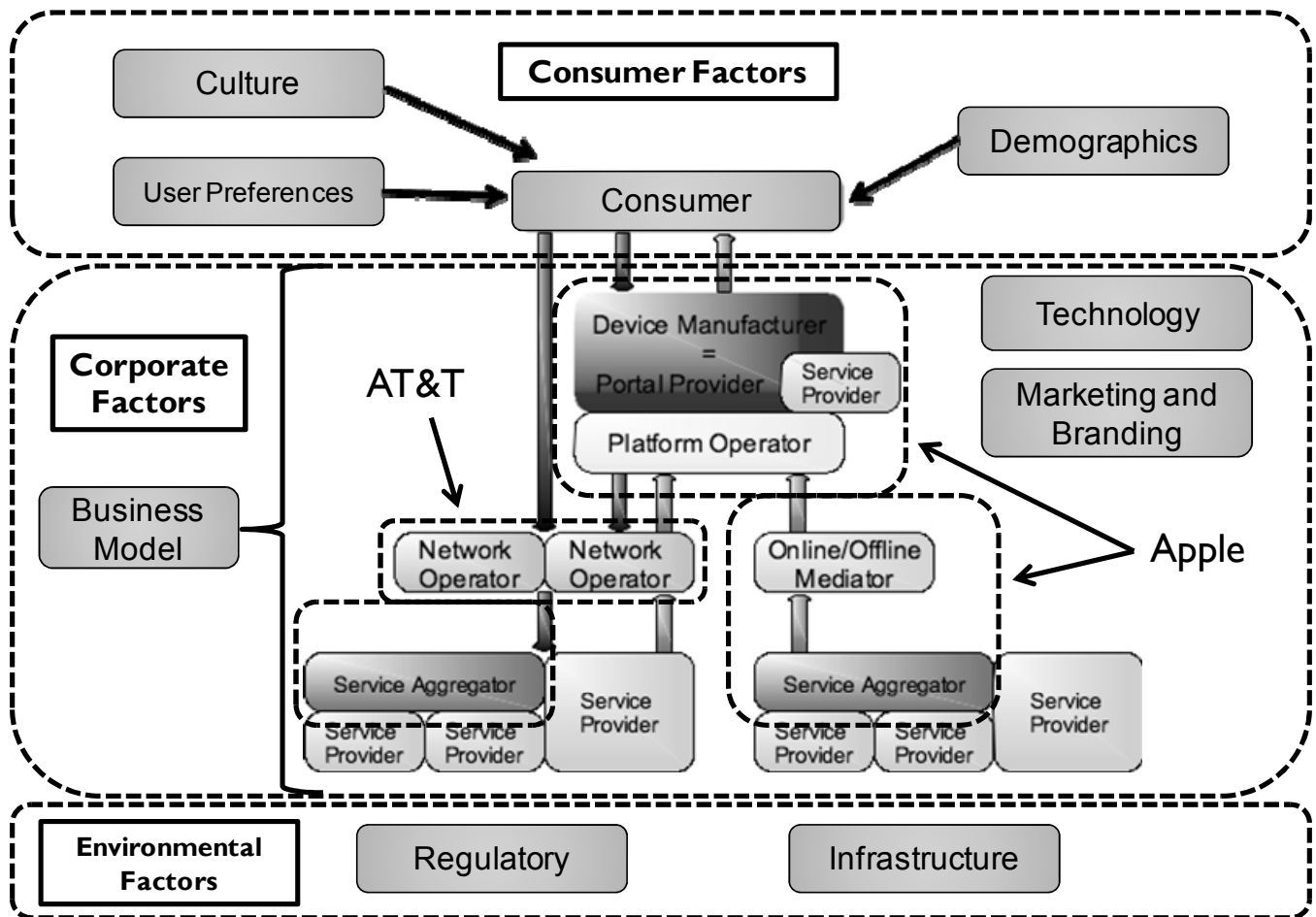
commerce businesses can have a much higher likelihood of success. This applies to mobile device manufacturers, service providers, network operators, platform operators, service aggregators and portal providers.

This paper has been based on an extensive academic literature review and general Internet searches. Wherever possible, academic papers have been given priority in the development of the preceding analysis. However, a limited number of academic references were available for the iPhone. Thus, some of iPhone findings have been developed based on opinions expressed by industry experts in newspaper or periodical articles, web pages or in some cases blogs. While this does not necessarily indicate a lack of validity, it does mean that some caution must be exercised in the interpretations of these findings. While this study has been able to illuminate many of the factors that have made the iPhone successful, there are numerous opportunities for further research. One of the assertions presented in this paper is that US consumers seek computer and fixed line Internet capabilities in their Smartphones. There are no empirical studies to validate this assertion. Therefore, further research to determine the adoption model for Smartphones in the US is needed. Secondly, it would be of benefit to repeat the research performed here over time to see if the iPhone continues to be successful. Over a number of years, it would allow us to determine if the iPhone market is sustainable. Third, it would be valuable to look at the success factors for RIM and its Blackberry line of products to see if there are any similarities with other success models from around the world, focusing mainly on the business model employed by RIM. Given that the business model for RIM is most likely device-centric, it would be interesting to compare and contrast the iPhone versus RIM and its Blackberry products. Finally, this report specifically examined the US market for iPhone, and while some of the findings are generalizable to other countries, factors such as demographics, culture, user preferences, regulatory and infrastructure will differ by country. Therefore, it is recommended that future research focus on the international implications for the iPhone, research that would be of strong value to Apple and potentially other Smartphone developers as they attempt to expand their geographic reach.

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Consumer Factors

Culture

Demographics

User Preferences

Consumer

Technology

Corporate Factors

AT&T

Device Manufacturer = Portal Provider

Service Provider

Marketing and Branding

Business Model

Platform Operator

Network Operator

Network Operator

Online/Offline Mediator

Apple

Service Aggregator

Service Provider

Service Aggregator

Service Provider

Service Provider

Service Provider

Service Provider

Service Provider

Environmental Factors

Regulatory

Infrastructure

* adapted from Ballon and Walravens [45]

Figure 1: The iPhone Success Model