

Apple's Last Stand?

**MIT Sloan School of Management
15.912 Technology Strategy
Spring 2005**

Sagi Abiri
Grant Ho
David Hui

Convergence in the Digital Music Player Industry

The digital music player (DMP) industry is a \$2.4 billion dollar a year industry¹, led by firms such as Apple, Rio, iRiver, and RCA. Apple alone commands 41.9% of the market with its highly popular iPod line of DMPs. Given the industry's projected annual growth rate of roughly 30% for the next five years², many players have entered the mobile music-playing market hoping to capitalize on the enormous value in store. However, today, we do not just see only traditional DMPs – those that just play downloadable MP3 songs – hitting store shelves. Rather, we see a host of new mobile products that offer a rich set of convergent technologies from video, radio, and telephone calls in addition to music, all on a single device.

Among the big three “converging DMPs” are satellite radio, portable entertainment players, and music cell phones. In addition to playing songs like an iPod, each device offers something disruptive. For instance, XMSR and Sirius satellite radios provide 24/7, commercial-free content, streamed with perfect CD-audio quality anywhere, anytime. Sony's portable entertainment player, the PlayStation Portable, allows one to watch movies, play games, and listen to songs on a single device. Nokia's latest line of mobile phones includes a cell phone and MP3 player all rolled into one. Herein lies the problem for Apple.

For XMSR and Sirius, it's only a matter of time before they succeed in making downloadable music available on their satellite radios. For Sony and Nokia, it's only a matter of time before their interface, storage, audio quality capabilities either match or exceed that of Apple's iPod. And for Apple, it is only a matter of time before these new disruptions eat away at iPod's market share as the rate of innovation increases along the music dimension. One now has to wonder – has Apple reached its last stand? To answer this and come up with a strategy, we must first understand the underlying dynamics of the business problem that Apple currently faces.

Apple's Innovator's Dilemma

In our opinion, the very product, iPod³, that allowed Apple to capture the lion's share of the DMP market may ultimately cause its downfall. The reason is that Apple is starting to show some early signs of the “innovator's dilemma” (see Figure 1). While iPods have been wildly successful since their inception in October 2001, Apple has since grown the iPod into a line of pure digital music players – from the 4GB iPod, to the 20GB and 60GB versions, to the iPod mini and iPod shuffle, all the way to the iPod U2 Bono version – rather than responding to the effects of convergence. This evolutionary approach supports our hypothesis that Apple has geared itself toward creating sustaining technologies for people who want only music, and in doing so, has neglected other segments of its installed base – those who desire MP3, radio, games, and telephony all on a single device. Without finding ways to innovate along this new dimension (rather than music alone), Apple risks losing market share to these convergent upstarts. In the end, as XMSR/Sirius, Sony, and Nokia DMPs become as good as the iPod in terms of interface, storage, and audio quality, these new devices may ultimately meet the needs

¹ Team analysis based on 2005 iPod revenues of \$1 billion (<http://apple.weblogsinc.com/category/ipod/>) and iPod market share of 41.9% (<http://www.macobserver.com/article/2004/10/11.11.shtml>)

² http://channels.lockergnome.com/news/archives/20050315_apples_ipod_stokes_mp3_player_market_boom.phtml.

³ See Exhibit 1

of Apple’s mainstream customers while providing them the array of convergent offerings they so desire.

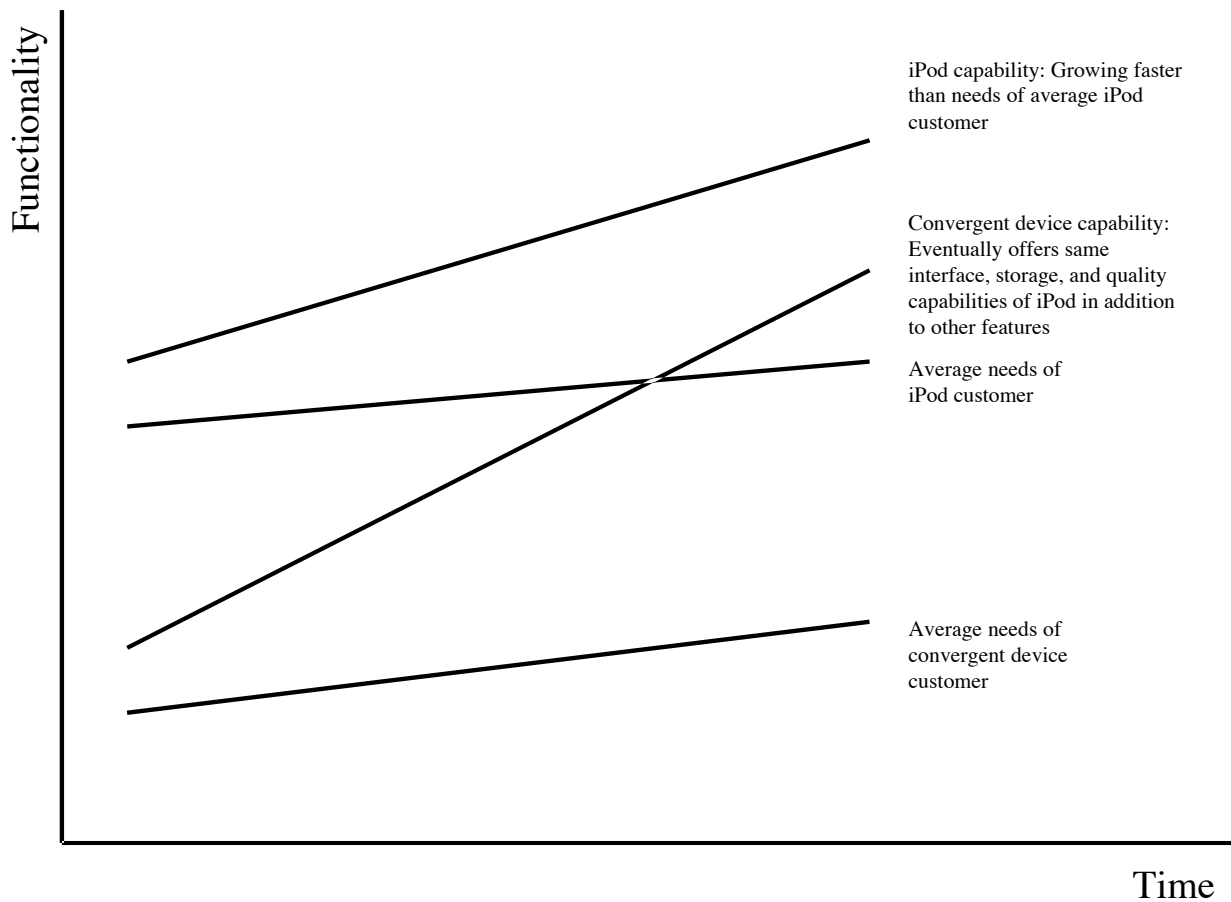


Figure 1: Apple’s Innovator’s Dilemma

Another way to think about Apple’s dilemma is from the perspective on S-curves (see Figure 2). In the left hand graph, we see today’s DMP S-curve, where iPod is reaping lots of profit in the industry’s takeoff phase. Here, the DMP’s dominant performance measure is the ability to play MP3s and play them well, and Apple is clearly the market leader. However, looming right underneath this S-curve is a disruptive one – the one for convergent devices owned by XMSR/Sirius, Sony, and Nokia. As the rate of technological innovation increases, and as new devices begin offering music capabilities equal to iPod (in addition to radio, games, and telephony), the industry landscape changes. At this point, we believe there will be a gradual shift of consumers’ preferences from pure DMPs to these new convergent devices, as illustrated in the middle graph. Over time, as more and more consumers select these convergent devices, the dominant measure of digital player performance will shift as well. No longer will simply playing MP3s be the dimension to drive the industry; rather, the new performance dimension will be the ability to play MP3s, radio, games, and telephony on a single device. The right-most diagram illustrates this concept as the convergent device S-curve disrupts the pure-play DMP S-curve, thus shifting the entire industry back into a stage of ferment.

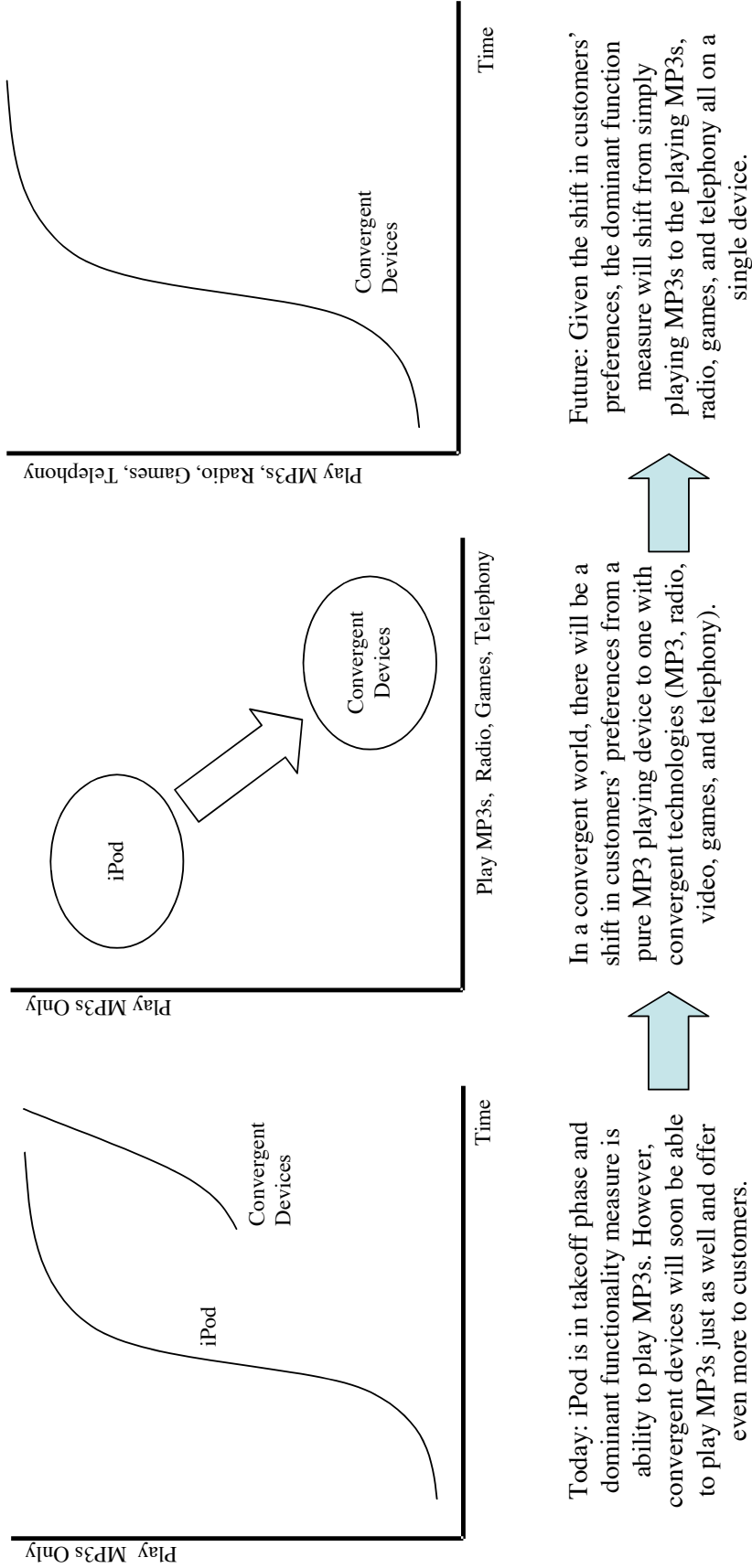


Figure 2: Evolution of S-curves

Clearly, Apple needs to think what the future of the DMP industry looks like. Based on our hypotheses and reinforced with the recent proliferation of convergent products, we believe the industry is moving away from a world of pure DMPs to one where digital entertainment players may become the norm. Clearly, the question becomes the following – what should Apple do? Specifically, how should it grow beyond its role as a niche DMP player and respond to a converging industry? Which of the three converging areas – satellite radio, portable entertainment players, or music cell phones – if any, should Apple enter into? And how should Apple leverage its uniqueness and complementary assets to gain most value in that market?

In the following sections, we answer these questions through two avenues. First, we analyze the attractiveness of each of these markets from a value creation, capture, and delivery standpoint. Secondly, we formulate a potential strategy for Apple to succeed in the market of choice.

Option 1: Enter into Satellite Radio

Value Creation: In 2004, the satellite radio industry posted revenues of \$265 million⁴ with membership projected to grow from 4 million people to 42 million by the end of 2009⁵. In theory, satellite radio is a fantastic technology – it offers users 24/7, commercial-free content anywhere, anytime with perfect CD-audio quality from the device the size of an iPod.

Although the industry offers possible long-term value, we believe it brings little value for Apple in the short term. The major reason for this is because of the industry's prohibitively high cost structure – incumbents must pay hundreds of millions of dollars for premium-level content deals, FCC radio spectrum rights, and the leasing and launching of expensive satellites into orbit. Since satellite radio is such a large fixed cost business, players must consequently rely on heavy subscriber growth in order to earn profits, something very difficult to achieve in the short term. Empirical evidence from the market supports this fact as the industry's only two players, XMSR and Sirius, have lost a combined \$2.6 billion since entering the industry in 2001 and are expected to finally breakeven by 2007⁶. Thus, with little short-term value creation and questionable creation in the long-term, it makes little sense for Apple to grow into a satellite radio player.

Value Capture: Even if firms had the ability to create value in the short term, the dynamics of the industry make it difficult for any satellite radio players to actually capture that value:

- **Competition:** With only two incumbents (i.e., XMSR and Sirius) in this market, there is little threat of price competition and there are potential profits to reap (*if there are profits to begin with*). However...
- **Supplier Power:** Supplier power is a high. The fight to gain long-term agreements with Howard Stern, MLB, the NFL, and other highly sought after content, allows programming providers to drive up contract prices. This more than offsets any profits that incumbents may reap from commodity component suppliers of the radios themselves.

⁴ Team analysis based on XMSR and Sirius 2004 fiscal year income statements

⁵ http://technology360.typepad.com/technology360/2004/07/skywaves_resear.html

⁶ <http://quote.bloomberg.com/apps/news?pid=nifea&&sid=aROY9gOh42KM>

- **Buyer Power:** Buyer power is also high. The consumer base is largely heterogeneous and people are highly selective about their programs. As such, incumbents must cut prices or offer other costly incentives if they cannot provide content to meet consumer demands. Secondly, the major distribution channels through which satellite radios are sold (e.g., Wal-Mart, Radio Shack, and Circuit City) have formidable bargaining power.
- **BTE:** Barriers to entry are high. Not only do XMSR and Sirius have strong brands and exclusive contracts with content providers, but they also have a lock-in on one of the most important distribution channels for the devices – US and Asian auto makers. Combined with the industry’s huge capital investment as previously described, it becomes very difficult for a new entrant to overcome its entry cost of capital.
- **Substitutes:** From a substitutes perspective, traditional radio is not going anywhere. Terrestrial radio is free, does not require consumers to buy new devices, and most importantly, plays local radio content, something that satellite radio does not do. In both the short and long terms, it is hard to see satellite radio fully replacing regular radios.

From a value capture perspective, these factors show just how hard it is for a player to capture value in this industry. Combined with the poor prospects of value creation to begin with, satellite radio is clearly not an attractive opportunity for Apple.

Value Delivery: Given that value creation and value capture are low, it makes little sense to discuss whether or not Apple can deliver value in this industry. Even if Apple had all the resources and capabilities to succeed (which it does not) or partners with XMSR or Sirius, the odds are stacked against it. The facts show that satellite radio is a money-losing business making it difficult for even today’s incumbents to earn profits and extract value from the value chain.

Should Apple Play in Satellite Radio? No. Apple should not innovate its iPod to have satellite radio because this industry would create little value and provide little to no profits in return.

Option 2: Enter into Portable Entertainment Player (PEP) Market

Value Creation: The second major threat to the DMP industry comes from the portable entertainment player (PEP) market formally introduced to the US with Sony’s PlayStation Portable (PSP) just two months ago. The PSP is fully equipped with a high-speed CPU, data storage capabilities, and music functionality. A PSP user can play games, watch DVD-quality movies, and listen to CD-quality music all on a device measuring 6.7 in x 2.9 in x 0.9 in⁷.

Analysts considered the release of the PSP as “a battle for all of mobile entertainment, and not just gaming,”⁸ and some Sony’s executives were quoted as saying that “Sony plans to subsidize the hardware manufacturing costs of the PSP with sales of games and, eventually, music and movies.”⁹ It is clear that Sony and Nintendo covet the highly lucrative market for portable entertainment players, which unfortunately for Apple, also includes DMPs:

⁷ See Exhibit 1

⁸ P.J. McNealy, an analyst with American Technology Research in San Francisco

⁹ “Sony Heads Full Speed Into Mobile Entertainment With Its New PSP,” LA times, October 28, 2004

“Sony after years of ignoring MP3 format as a preferred standard for their portable music players started talking up the PSP as much more than a gaming device – complete with rumors of rolling out an accompanying iTunes-like music service of its own – the whole iPod vs. PSP thing has taken on epic proportions.”¹⁰

To date, Sony has sold more than 70 million PlayStations with worldwide console sales amounting to \$11 billion in 2003. Assuming a similar adoption rate of 10-15% for PSPs worldwide, sales are estimated to be between \$1.1B and \$1.7B in 2008¹¹. From a potential earnings standpoint, this market could be extremely attractive for Apple.

Value Capture: Even though there is potential value creation in the PEP market, we believe it is hard for firms to actually capture value in this industry:

- **Competition:** Like satellite radio, there are only two major competitors in this market (i.e., Sony with its PSP and Nintendo with its DS¹²), allowing incumbents to reap more profits since there is little threat of price competition. However...
- **Supplier Power:** Supplier power is high. While hardware suppliers have little power by supplying commodities (e.g., electronics components and plastics), content suppliers (e.g., movies, music or games) are few and powerful and they will likely extract much of the value that is created in this industry.
- **Buyer Power:** Buyers power is also high. While mom-and-pop stores do not possess power, the big retailers like Wal-Mart, Best Buy, and Circuit City, where PEPs are sold, have strong bargaining chips and are likely to extract much of the value created.
- **BTE:** Barriers to entry in this industry are high. The main BTE is the steep learning curve of making games that Sony and Nintendo have nearly perfected over the last 25 years. These companies have also built supporting consoles, a large number of supporting games, and possess tremendous game development capabilities. The network effects between games and devices are huge, and since Apple has none of this, it would take it a long time and significant investment for the company to catch up to the incumbents.
- **Substitutes:** Substitutes are a high threat. There are many substitutes to PEPs – cell phone games, console games, regular portable game devices, and PC games. Although these devices do not offer the identical experience of PEPs per se, they are still legitimate substitutes.

Value Delivery: While Apple is known for its brand, design capabilities, and innovation we believe that Apple does not have, at this time, the necessary tools needed to compete in the PEP market. Despite the wide array of entertainment features, PEP sales are still driven first and foremost by the ability the gaming aspect of the device. Although music capabilities are important, they are still a secondary benefit for people who value total mobile entertainment.

¹⁰ <http://games.techwhack.com/93/2102-sony-psp-vs-ipod-when-do-we-expect-microsoft/>

¹¹ IDG Report – “The PC and Video Game Markets in NA and Europe,” March 2004

¹² See Exhibit 4

Currently, Apple does not have game development expertise, the brand name associated with video games and supporting consoles, or crucial relationships with game developers. While acquiring these skills is an option, it will take Apple a long time and significant investment to achieve this goal. Empirical evidence shows that Microsoft invested \$2B in developing the Xbox but has yet to catch up with Sony – since its launch in 2001, Sony PlayStation has outsold Xbox nearly five to one. For Apple, it should determine whether to invest in protecting and growing its DMP market lead or instead, capturing a small, and even questionable, share of the PEP market.

Should Apple Play in the PEP market? No. Apple should not enhance its iPods to become PEPs at this point, largely because the firm does not have the capabilities to do so. Instead, Apple should look for more lucrative markets, specifically, those that have greater potential for value capture and that offer the company and its shareholders a higher chance of success through leverage of Apple’s existing capabilities and complementary assets¹³.

Option 3: Enter into Music Cell Phones

Value Creation: The number of cell phones in the world dwarfs the number of iPods, satellite radios, and PEPs. For instance, there are 1.4 billion cell phones in the world (180 million cell phones in the US alone) compared to 10 million iPods, 4.7 million satellite radios¹⁴, and less than 1 million Sony PSPs¹⁵. This provides an enormous untapped market for consumers who value both music and telephony on one device. The large existing base of cell phone users provides an opportunity for cell phone makers and wireless carriers (the second of whom actually “owns” the customer) to capitalize on the growing need for converged devices that play digital music.

In the US, wireless players (both cell phone makers and wireless carriers) are seeing a strong demand for ring tones. The ring tone market is currently \$5.8 billion and projected to hit \$9.4 billion by 2008.¹⁶ At the same time, there is strong demand for complete songs as seen in Europe (where people pay \$2.50/song) and in Korea (where SK Telecom Co. has 300,000 users contracted to a \$5/month music subscription)¹⁷. Another fact is that in the US, record labels are still hemorrhaging from illegal song distribution – 300 million songs have been sold through iTunes in the past two years while 750 million songs are being illegally copied every month.

The confluence of these events – growth of cell phone purchases, demand for ring tones, and dire need for a “closed system” of music transmission to prevent piracy – are key reasons why phone makers, carriers, and record labels are cooperating to evolve the converged space of music cell phones as quickly as possible. Due to sheer volume alone, there is simply no comparison between the potential value creation of music cell phones and that of satellite radios and PEPs.

¹³ We would like to clarify that our recommendation attributes more weight to Apple’s own internal capabilities rather than market attractiveness; for instance, if Microsoft were the subject of our analysis then our recommendation for Microsoft would be to enter the market as the company possesses the needed cash, power and capabilities (e.g., Xbox, MSFT TV, the PC Media Center) to successfully play in the market.

¹⁴ <http://newyorkmetro.com/nymetro/shopping/columns/tech/11665/index1.html>

¹⁵ <http://www.us.playstation.com/pressreleases.aspx?id=268>

¹⁶ www.businessweek.com/magazine/content/05_17/b3930001.htm

¹⁷ Ibid.

More importantly, there is much profit to be made in the music cell phone space and players are pushing to grow the use of these converged devices as a substitute for current pure-play DMPs.

Value Capture: Although value creation in the music cell phone industry is enormous, many big players are vying to win this evolving space. Apple has the following key issues to consider:

- **Competition:** Competition is fairly intense. Cell phone makers are the most direct competitors, but it is really the combination of makers and carriers that make up direct competition (since they share a symbiotic relationship). First, cell phone makers are cooperating with the record labels, many of which are currently dissatisfied with Steve Jobs. Record labels would rather sell through a diverse number of cell phone makers and carriers rather than negotiate with Apple who is monopolizing its existing position in the value chain. Secondly, wireless carriers “own” cell phone customers due to their high-touch relationships with end-users – wireless service contracts typically last one to two years, establish customer lock-in, and have built-in inconvenience costs if customers switch to a new carrier once contracts expire. The relationship that cell phone makers have with carriers and record labels makes them a formidable opponent against Apple.
- **Substitutes:** Substitutes in this space are a low threat, although it’s important to note exactly what these substitutes are. One aspect of substitution is the dual functionality of talking on a phone and having a DMP. Although there are many cell phone makers and carriers, and several DMP makers, the combination of functionality from both types of players is not yet available and really just involves carrying both a DMP and cell phone at the same time. A second aspect of substitution is the ability to stream songs wirelessly. One way to do this is through XM radio devices, but the technology is not yet ready at least for commercial use. Another way to stream songs wirelessly is through 802.11x / Bluetooth technology which unfortunately, requires a bulky laptop and transmitter. Some phones are Bluetooth-enabled, but the wireless environments in public arenas (e.g., embedded environments) are not currently available to consider this a viable option.¹⁹ Hence, the ability to substitute out a music cell phone is not significant.
- **Buyer Power:** Buyer power is a low-to-medium threat in this industry. The advantage of dealing with consumers in this space is that there are millions of cell phone users – diverse niches evolve making it potentially easier for Apple to find a specialty consumer base. The disadvantage is that many people already using cell phones, and these customers are all somewhat involved in contracts with wireless carriers. An entrant such as Apple (pending wireless capabilities) could only appeal to consumers who are ending wireless contracts, are not locked into an existing account, or who are willing to incur the switching costs of changing to another provider or mobile device.
- **Supplier Power:** Suppliers are a low-to-medium threat in this industry. Supply of physical parts for music cell phones are commodities and assembly is highly outsourced. Supply of airwaves and customers (from wireless carriers) are not too difficult to negotiate given the high number of carriers. The desire of carriers to maintain long-term

¹⁹ An embedded environment will likely be a threat in the distant future, but discussion of that possibility is beyond the scope of this paper.

relationships with phone makers to support one type of wireless technology platform also benefit phone makers due to high switching costs on behalf of the carriers. However, suppliers of songs have some potential power. Since songs originate from record labels, these firms own the rights to distribute original content. Fortunately for Apple, its existing relationship with these firms and 70% market share of the digital song distribution space (through its iTunes product) has allowed it to mitigate supplier power.

- **BTE:** Barriers to enter are high. The telecom industry is extremely capital intensive. Cell phone makers have gone down the learning curve of manufacturing phones specific to certain semiconductor chip technology (e.g., Qualcomm and CDMA). Wireless carriers have developed large networks with expensive towers around the world. Relationships between phone makers and wireless carriers are also well developed. For Apple to play as a new “music cell phone maker,” it will have to invest heavily into manufacturing capabilities, license chip technologies, and form relationships with wireless carriers. It has a higher likelihood of success if it were to partner with an existing cell phone maker (e.g., Motorola). Even then, there are significant barriers to integrating iPod devices with existing cell phones. Space on a phone is a constraint, as is debate over the look and feel of Apple’s designs when combined with non-Apple devices.

Value Delivery: Apple’s core competencies include design, branding, manufacturing, and selling digital music via iTunes. All of these can be helpful in playing in this evolving space. At the same time, more competencies would position Apple better to enter this new arena.

Consumers are beginning to care more and more about the aesthetics of cell phones. The mobile device is become more of an apparel accessory. People often talked about Motorola when the Star futuristic phone design came out, as well as Nokia when the simplistic looking 8200 series was released. Apple’s ability to design aesthetically appealing devices can position the company as a potential leader in the cell phone space.

Apple’s brand value and branding expertise will also aid in capturing more of the value in this converged space. Companies that pull the brand lever in the consumer electronics industry typically can capture more customers through this complementary asset.

One can also say that Apple has significant experience in manufacturing consumer electronics. Although Apple is relatively new to small devices, it has sold 10 million iPods – enough to understand the know-how of manufacturing a quality product in large scale.

iTunes, in addition to the learning that came with managing iTunes, is another complementary asset of Apple’s that can be employed in competing in the converged space. Apple knows how to sell songs and aid people in organizing their play lists, knowledge that may be useful for telecom players to figure out when they decide how to create song storefronts and song databases.

Unfortunately, along with Apple’s competencies come areas where Apple is incompetent. Apple has little experience working with wireless chip technologies. It has no experience with technologies that interface with airwaves for phone communication. It is new to an industry that relies heavily on partner wireless carriers. It has also never worked in an industry where

consumers are switching devices as frequently as every couple of years to a new model. It has never worked in an industry where subscription is such a large portion of industry revenue (e.g., cell phone carrier services). In sum, Apple has some clear advantages that are balanced with some clear disadvantages.

Should Apple Play in Cell Phones? Yes. Compared to satellite radios and PEPs, music cell phones represent the best option. First, the potential for value creation is significantly larger. Secondly, phone makers, wireless carriers, and record labels are rushing into this industry because of the profits to be made from the booming ring tone market, overseas wireless digital music market, and need to find a solution against music piracy. The motivation for these three players to build value leaves Apple as a potential bench-warming “has-been.” For Apple to succeed as well, it needs to show it can provide significant value to these other players in the industry by leverage its complementary assets. In doing so, Apple may be able to improve value capture opportunities in this industry and become a real player in this lucrative space.

Apple’s Strategy

Current Relationships with Key Players: Let’s first assess the situation by examining Apple’s relationships with the major players in this converged space – wireless carriers and record labels.

Wireless carriers are moving fast to sell services (e.g., as a monthly subscription or per song basis) by the end of this year. Most carriers are also leaning toward a service model where they do not have to go through song portals such as Apple’s iTunes store. Motorola, on the other hand, has partnered with Apple to roll out a phone that connects to a computer where iTunes can be downloaded onto its cell phone. Since carriers would prefer users to download songs via the carriers’ airwaves instead of via computer, they have been very reluctant to adopt and subsidize Motorola’s proposed iTunes phone. As wireless consultant Iain Gillott said, “Carriers subsidize phones and features when they drive network usage. Yet here was a phone that I was supposed to sync to my PC so I could buy music from Apple. Why would the carriers subsidize that?”²⁰

Simultaneously, record label companies are tired of Steve Jobs’ stubbornness in the pure-play DMP space. Although the record labels and Jobs had a good relationship a few years ago (e.g., Apple only held a 5% share of the digital music business in 2002), Apple became much more aggressive than anticipated. Among other things, Apple’s development of iTunes for Microsoft Windows allowed it to win a large share of the market and own over 70% of digital music sales in 2004²¹. In addition to Apple’s large monopoly influence, the record labels are also unhappy with Steve Jobs’ 99-cent price for all iTunes songs. Record companies want older songs to be sold at lower prices and newer songs to be sold at higher prices – they believe they are losing value with Apple’s stringent pricing policies. Finally, labels are threatened by Internet music piracy; for them, the advantage of selling songs through cell phones, instead of computers, would be the deployment of a “closed system” that would make it more difficult for piracy to occur.

In sum, the hunger of wireless carriers and the dissatisfaction of record labels have inspired the two industries to look to each other, and not to Apple. As said by a major record label, “The

²⁰ http://www.businessweek.com/magazine/content/05_17/b3930001.htm

²¹ Ibid.

[wireless] carriers' economics are aligned with us much better than Apple is aligned with us."²² Such cooperation could potentially produce a deadly scenario for Apple and erode its lead in the DMP market as innovation increases. If record labels (the primary source of songs) and wireless carriers (who also heavily influence cell phone makers, the largest producers of hand held mobile devices) team up and find ways to circumvent Apple's hold, than Apple must recognize that convergence of cell phones with iPod is where the company needs to focus.

So, what must Apple do? Apple needs to play in the world of converged DMP and cell phone devices, but to do so, it must respect the needs of and cooperate with the other members of the value chain. To get to the negotiation table, it needs to show the various players (phone makers, wireless carriers, and record labels) that it has valuable assets that it can provide by specifically appealing to both the cell phone makers and wireless carriers at the same time. By contributing the three offerings below to its value chain partners, Apple should receive a piece of the pie:

- ***Leverage iTunes:*** iTunes has an online distribution channel for songs equipped with a fine-tuned music management interface (comprised of both software and a website). This will be difficult for wireless players to mimic. While wireless players can evolve their own online stores and music management tools, Apple already has a stronghold in this service and perfected the experience in which consumers buy, download, and manage their songs. We recommend that Apple team up with phone makers to produce iPod/phone hybrids, and sell its iTunes software, website, and knowledge of how to sell songs to carriers – this effective opens up its online distribution to new parties. Wireless players who want an instantly perfected song store and song management tool will find this offering appealing. This two-pronged distribution service (one through the phone/airwaves and one through the Internet/computer) will make the song purchasing experience much more seamless not just for iPod end-users but also to the carriers' large customer base who own cell phones.
- ***Offer its brand and design:*** Apple's brand value is one of the highest in the world. By selling wireless products that carry the Apple name, cell phone makers will be able to charge a premium to consumers who value the simplistic designs, intuitive controls, and aesthetically-pleasing looks that appeal to people in the Apple cult and beyond.
- ***"Sell" its customer base:*** Although there are many people who have yet to purchase large quantities of digital songs, there are many who have already developed a significant collection of digital music. Those who have already locked themselves into Apple's MP4 format will not want to switch to other formats and music management software due to high switching costs. As such, if a cell phone maker, wireless carrier, and Apple agreed on a set format (e.g., MP4), then current iTunes users will easily be able to port their songs over to new cell phone devices. As such, by forming a partnership with Apple, wireless players can instantly gain exclusive access to Apple's iTunes customer base.

In sum, Apple should partner with cell phone makers and wireless carriers to play in the converged arena of music and cell phones. Although Apple may have to relinquish some rights to its FairPlay security technology or slightly lower margins on its devices to appeal to the cell phone makers, doing so will ensure that Apple isn't sitting on the sidelines. Instead, it allows

²² http://news.com.com/Music+moguls+trumped+by+Steve+Jobs/2100-1027_3-5671705.html

Apple to leverage its three crucial complementary assets – iTunes distribution system, brand, and customer base – and become an active player in the value chain, partnering with cell phone makers and carriers rather than being squeezed out by them. More importantly, it allows Apple to enter into a highly lucrative space with significant potential for value creation, thus allowing the company to escape from the innovator’s dilemma and respond to the inevitable convergence of the information industries.

Exhibit 5: Samples of Evolving Converged Cell Phone / DMP's

<p><u>Samsung SGH-i300</u></p> <p><u>\$450 to \$500*</u></p> <p>Pluses: A 3-gigabyte hard drive that can store 1,000 songs, scroll-wheel navigation, and iPod-quality sound.</p> <p>Minuses: Won't hit key U.S. market until yearend at the earliest, keypad buttons may be too cramped.</p> <p>*Overseas prices. Not available in U.S.</p>	
<p><u>Motorola E680i</u></p> <p><u>\$400 to \$600*</u></p> <p>Pluses: Memory card storage of up to 600 songs, stereo-quality speakers, can handle MP3s and popular music file formats from Microsoft and RealNetworks.</p> <p>Minuses: Boring gray design in a clunky shape and a low-quality camera.</p> <p>*Overseas prices. Not available in U.S.</p>	
<p><u>Nokia 6230i</u></p> <p><u>\$400*</u></p> <p>Pluses: Its predecessor, the 6230, won raves from users. It supports MP3, AAC, and other digital playback formats, offers FM radio, and sports a 1.3-megapixel camera and a memory-card slot for lots of extra storage.</p> <p>Minuses: Phone looks a little stately for an increasingly fashion-conscious consumer.</p> <p>*Overseas prices. Not available in U.S.</p>	
<p><u>Nokia N91 – the Music Phone</u></p> <p>High-end music phone with a built-in hard drive. The case is made out of steel. Features include:</p> <ul style="list-style-type: none"> •☐ 4GB hard drive •☐ 3.5mm headphone jack •☐ Line-in for recording •☐ Bluetooth / •☐ WCDMA/WiFi/USB 	