

Toward a New Paradigm of Innovation on the Mobile Platform: Redefining the Roles of Content Providers, Technology Companies, and Users

IEEE Conference Proceedings, MBusiness Conference, Sydney, Australia, July 2005

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Abstract

Innovation on the mobile platform has focused on the development of infrastructure and devices with mobile carriers and device manufacturers leading the effort. With the commoditization of voice traffic, there has been a shift toward content innovation. In order for innovation to continue to flourish on the mobile platform, a new paradigm must be adopted. Rather than the current linear approach in which carriers dictate the terms to content providers and users, this new paradigm is more networked and ecological in structure. The key constituents include content providers, technology companies (both carriers and device manufacturers) and users of the mobile platform all of whom play important roles and continually interact to foster innovation. A case study on TJNet, an Italian mobile content provider, illustrates the new paradigm.

1. Introduction

Historically, much of the innovation on the mobile platform has focused on the development of infrastructure and devices. In the United States, telecommunications carriers such as Verizon, Sprint and AT&T all invested significant resources into wireless technologies, primarily by building out the telecommunications infrastructure to accommodate the increasing demand for wireless services, and acting as service providers. Other technology companies such as Nokia and Ericsson in Europe and Samsung in Korea developed handsets. Indeed, in the early days of the mobile platform, the emphasis was almost exclusively on technology and making sure that a user could complete a phone call without being ‘dropped’ in the middle of it [1].

Along with developing the technological infrastructure, mobile carriers began to recognize that

one of the keys to the successful adoption and diffusion of the mobile platform was providing content and

services for their growing customer base. An early pioneer in mobile content and service provisioning was NTT DoCoMo, a subsidiary of Nippon Telephone and Telegraph based in Japan. In February 1999, DoCoMo rolled out i-mode which gave users with the ability to retrieve their e-mail, access websites and engage in some e-commerce activities [2]. Another pioneer was European-based Vodafone which launched Vodafone Live! a mobile content portal aimed at young adults [3]. In their quest to enlarge their customer base and differentiate themselves from their competitors, these carriers devised their own strategies for content provisioning which included partnering with content-rich companies and providing exclusive content for their customers. The carriers also controlled the pricing structure of such content as well as how revenues were shared between the carriers and content providers [4].

For their part, content providers, especially those in the media industry, were cautious about using the mobile platform in an environment which had a confusing array of platforms, devices, and competing technology standards. Moreover, it was unclear as to how large content companies would benefit financially from creating such content. As a result, most content providers engaged in some experimental projects on the mobile platform and until now, have ceded most of the leadership in content provisioning to the carriers [5].

Over the past five years, the mobile platform has become more robust with faster data speeds, better quality of service, and more sophisticated devices. So-called third generation wireless systems (3G) have finally arrived which promise networks that will deliver larger amounts of data and enable users to access a variety of business applications as well as more satisfying entertainment offerings [6]. While carriers

continue to lead the charge in the development of a true mobile broadband network [7] and the device manufacturers design devices which are multi-functional [8], voice traffic, a major source of revenue for the

carriers, is becoming more of a commodity. Price points have been lowered considerably with carriers vying with one another for customers based on pricing plans and offers of free phones [9]. For many carriers, revenues from data services are beginning to outpace voice traffic. Companies such as NTT DoCoMo have reached a plateau of sorts in terms of acquiring more customers and are in fact, losing customers to their competitors who offer a better deal [10]. In contrast to this downturn, the market for mobile content in North America alone is forecast to reach \$14 billion by 2008 [11] and some estimates predict that the worldwide market for mobile content will reach \$554 billion by 2008 [12].

These statistics indicate that one of the major trends in the industry is an increased focus on content innovation, that is, the innovation that takes place on top of the hardware and software platforms. This paper discusses this trend and suggests that in order for innovation to continue to flourish on the mobile platform, the roles of three key constituents: the content providers, the technology companies, i.e., carriers and device manufacturers, and the users of the mobile platform, must be redefined. Rather than a linear approach in which the carriers dictate the terms to the content providers and users, this paper suggests a more ecological, networked approach to innovation on the mobile platform in which content providers, technology companies and users of the mobile platform all play important roles.

There are four major parts to this paper. The first part will discuss the evolution of content on the mobile platform and the challenges facing managers at content-rich companies as they seek to exploit this emerging technological platform. The media industry will be used as a case in point for discussing such challenges because of the widespread appeal of its entertainment (music, videos) and informational (news) content and because much of this content-rich sector has already been transformed forever by the advent of digital-based innovations. In order to provide a context for this discussion, there will be some reference to the impact of digital-based innovations, in particular, the World Wide Web, on the industry. The second part will suggest a paradigm which is useful for conceptualizing innovation in the mobile arena for content-rich firms, technology companies (both carriers and device manufacturers) and the user community. The third part of the paper will be a case study of TJNet, one of the premier companies in Italy providing music and other services for mobile phones which illustrates the paradigm. Finally, some initial conclusions will be discussed with implications

for content-rich companies in the media sector and others sectors as well as for technology companies in the mobile arena.

2. Evolution of Content on the Mobile Platform

When wireless first emerged as a platform, there was not much content available to the general user population and usage was limited to cell phone calls. In many ways, the process of adoption of this technological innovation was very similar to what occurred with the World Wide Web, where initially there was also a dearth of content available to mainstream users. In fact, some analysts contended that the wireless platform was just a 'watered down web' with little content that users wanted to access or pay for [13].

As noted in the introduction, carriers recognized the value of content and began to formulate strategies for content provisioning. One strategy was to develop partnerships with content companies. Thus, DoCoMo made agreements with Disney to offer Disney-branded content to its teen population [14] and Vodafone made agreements with 250 content partners, including Sony Pictures Mobile, a division of Sony Pictures Digital Networks and Reuters, a news service [15]. In order to ensure that they would get part of the revenue stream generated by the content, carriers usually dictated the terms of the revenue streams to their content partners. While NTT DoCoMo gave its content partners 90 percent of the revenue, many European carriers only gave content providers 50 percent or less of the revenues [16].

Carriers also determined the pricing of content and the business models for these products. Thus mobile carriers such as NTT DoCoMo, Verizon, and Vodafone used subscription models for disposable content, that is, content such as SMS messaging and one-off downloads. For premium content, which included stock quotes, sports scores, ring tones, and video clips, there was a pay-per-product model [17]. To further control the content provisioning market, mobile carriers emulated an approach taken by some early ISP/content companies like America Online which provided a limited, exclusive set of content offerings to their subscribers. This approach to content provisioning, called the 'walled garden' approach, gave carriers the power to decide how content was positioned on the 'top deck' of the handset screen, the area subscribers usually access first [18].

Content-rich companies in the media industry took a cautious approach as they began to exploit this new platform. They had already undergone major changes in the mid-1990s due to waves of technological innovations known as New Media. While companies had integrated digital-based technologies into their back office operations for some time, the impact of New Media,

which are defined as those media which either enable the development of digital content or deliver such content, was profound. As 'pure play' Internet companies such as Yahoo! as well as hybrid content/technology companies entered the content arena they challenged the methods by which media companies traditionally delivered content, reached customers, generated revenues and indeed survived [19].

The newspaper sector was the first to actually feel the impact of New Media. Unlike print newspapers, which were produced in lock-step fashion once a day, New Media companies could create content 'on the fly' which could be accessed instantaneously by their customers. Along with redefining how content was accessed, New Media companies were providing content free of charge over the Internet and thus well defined business models such as subscriptions which newspapers relied upon for revenue, seemed irrelevant in this new environment [20].

Another sector affected by New Media was book publishing. With the development of the World Wide Web and the appearance of e-books which could be downloaded electronically, publishers wondered if paper-bound books, a format that had survived for hundreds of years, would endure. In addition, the ability of an author such as Stephen King to deliver his work to readers without a publisher focused attention on functions such as editing and marketing manuscripts, which had been traditionally performed by publishing houses [21].

Perhaps the greatest impact of New Media was on the music business where content was easily ported to a digitized environment. As Napster, Kazaa and other peer-to-peer networks proliferated, music companies such as BMG struggled with how to react to an environment in which technological innovations were changing the business models which had always sustained them. Customers were downloading files of musical tracks which they had previously bought in physical form in retail stores and musicians were discovering that they could bypass the record labels and market their musical creations directly to their fans [22].

Clearly, the traditional view of what delineated a content provider was rapidly evolving and many people in the media industry forecast a Schumpeterian 'gale of destruction' [23] in which physical content would be subsumed into a new world where digitization would be the norm. While physical content did not disappear, the notions of what constituted content, who owned the intellectual property rights to such content, and how to derive revenues from content all created managerial tensions within media companies. Among other things, managers were forced to rethink their businesses, redesign their organizations and hire talent that was conversant in digital and physical content development.

One other important outcome that resulted from the introduction of this robust technological platform was that the user community became a significant presence. Instead of being passive consumers, users could instantaneously provide feedback on articles through websites, were able to develop their own media distribution capabilities such as Napster, and were more critical of media products and services being pushed out to them by big companies.

As content-rich companies continue to develop strategies for incorporating digital-based innovations into their businesses, the mobile platform has become a viable technology platform and presents some of the same challenges that such companies had grappled with earlier. One challenge is developing appropriate content for mobile devices. In the early days of the World Wide Web, the 'browser wars' forced content companies to develop multiple formats in order to ensure that the content would be available for various groups of users. However, even in this somewhat confusing environment, many content companies addressed the challenges presented by the online environment of the Web by simply 'shoveling' their existing content onto websites, thereby avoiding the task of redesigning it for the digital world [24]. Editing of content was done to enhance the content offering or to add hypertext capabilities to the initial text but the vast majority of the content stayed intact.

In the nascent wireless environment, the technology platform is far more complex. There are a vast array of devices such as PDAs, handsets, tablets and other hybrid devices in the marketplace, and competing platform standards. 'Shoveling' content onto wireless devices which have different sized screens, color and graphics capabilities, is not an option. Indeed, mobile content must be edited for both the physical limitations of the small screen and the lack of bandwidth which may place limitations on an optimal user experience. Even songs, which were initially ported intact into digital format and downloaded by large number of users, need to be reformatted for wireless devices [25]. For content companies, the notion of singular pieces of content (known as microcontent) being distributed over the wireless network presents intellectual property rights challenges because the integrity of the content may be lost or cannibalized as it is transferred to small screens and different formats [26].

Another major issue confronting content providers is how to optimally monetize their content for distribution on the mobile platform. In the current environment, creating viable business models for the mobile platform has proven to be a difficult task especially in the United States where the expectation of obtaining 'free information' on the Internet has been ported to the mobile platform. The question remains as to how much users are willing to pay for 'valued'

content even games. Moreover, if microcontent such as headlines, sports scores and stock quotes is transferred to mobile devices without being authorized by the content provider, not only will revenue be lost but content providers will be reluctant to develop more complex content offerings for users.

Aside from the technology issues and the challenge of defining business models, managers in content-rich companies are grappling with how to structure their organizations and allocate resources in order to successfully use wireless innovations. In addressing the challenges of the mobile arena, there appears to be no one model that large content companies are following. Bertelsmann for example, which is a very decentralized organization, has established a group within its direct to consumer division called Arvato Mobile which is in the forefront of mobile content development for the conglomerate [27]. The Walt Disney Company's efforts in the mobile arena are part of the Walt Disney Internet Group (WDIG) which is responsible for the overall digital strategy of the Company [28].

3. A New Paradigm for Content Innovation on the Mobile Platform

The current paradigm of innovation on the mobile platform with respect to content innovation is linear in nature and puts the carriers at the center of paradigm with content providers and handset manufacturers on one side providing their products to the carriers and the users on the other side accessing services and content from the carriers. In this paradigm, the carriers are the purveyor of content and devices and the users have little contact with handset/device manufacturers or content providers [Figure 1]. While this paradigm presumably worked in the early days of the platform when technology drove the business, with the shift toward the notion that 'content is king' on the platform, this

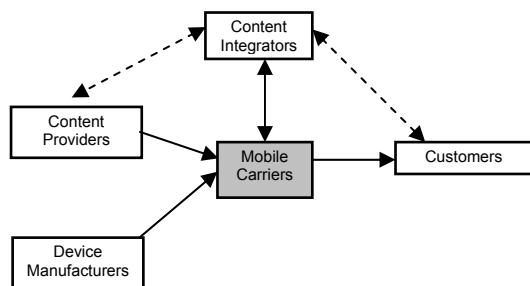


Figure 1. Linear Model of Innovation

paradigm may stifle innovation for all constituencies. What is needed is a new paradigm that is more networked and porous in structure and is characterized by continual interaction between content providers, handset manufacturers, other device manufacturers, e.g., Palm, HP, and most importantly, users. In addition,

content integrators/infomediaries who provide technical and content-related services to both content providers and carriers as well create their own portfolios of content are important constituents in the paradigm [Figure 2].

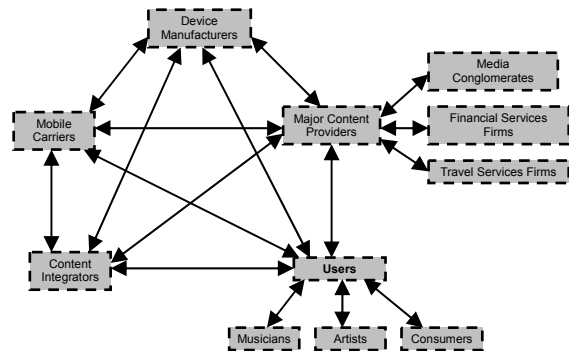


Figure 2. Networked Model of Innovation on the Mobile Platform

Today, many of the content provisioning practices developed by carriers in the early days of the mobile platform are still in effect. Thus, in general carriers control the content provisioning market. For example, Verizon recently launched a 'walled garden' service called "Get It Now" which has ring tones, games and wall papers only accessible to Verizon subscribers through direct downloads onto handsets or through the carrier's website [29]. In addition, handset manufacturers such as Nokia and Samsung have launched their own portals in an effort to garner a share of the market [30]. In the proposed paradigm, the carriers would cede responsibility for content development to the content providers, who would structure the pricing for their content and dictate the revenue sharing structure to the carriers.

Along with developing the infrastructure, carriers would concentrate on providing services, e.g., billing for text messaging and content. In order to remain viable as organizations, their emphasis would shift to finding more creative ways to provide such services. Some carriers have begun this process. For example, Telia Sonera, the leading telecommunications provider in the Nordic-Baltic region, is rolling out that region's first mobile television broadcast service [31].

In shifting to a more ecological and fluid model, the large content providers would be able to access the expertise of content developers outside of the traditional boundaries of their organizations and find new and creative ways of using the premium content that is their most important asset. Such companies should not try to compete with the carriers from a technological point of view and instead should co-opt the carriers' expertise and use the platforms they design for distributing their content. Organizationally, large content providers may

find it most effective to have small subsidiaries of their company or units within the company who are solely devoted to content development for the mobile platform similar to the organizations set up by Bertelsmann. Just as for the digital platform, new talent should be hired to deal specifically with the issues of content on the wireless platform.

The third important part of this new paradigm is the user population. The notion of users as sources of innovation is not new. In his landmark book, *The Sources of Innovation*, Eric Von Hippel discusses how users are an important source of innovation and can drive technological innovation [32]. In this paradigm, there is a spectrum of users which include content-rich firms in various sectors, individual creative talents such as artists and musicians who develop premium content and can drive content innovation by virtue of their celebrity status, and individual lead users (to use Von Hippel's term), who are heavy users of mobile services and provide a proving ground for new content and services. For example, Madonna now has a website with premium content (ring tones and wall papers) which is downloadable for a price and lists the services and phones are compatible with her content offerings. Fans can download such ring tones and thus another outlet for content development and provisioning has been established.

Individual consumers especially those in the 12 to 25 age range are heavy users of mobile technology and are therefore a great source of feedback on what works and what does not work. Virgin Mobile, which has explicitly designed its cell phones for the teenage market, has invited about 2000 'users' to be "Virgin Insiders" and provide input on the development of the latest version of mobile phones. The "Insider's" feedback proved to be valuable. For example, "Insiders" told company designers that they were not as interested in picture albums for their phones as they were in well designed ways to upload photos. Virgin listened and made uploads easier [33]. Arvato Mobile employs young people who are in constant touch with the trends in Arvato's target market, i.e., 12 to 25 year olds, and provide continual input to the company on what might work and what might not work in the marketplace [34]. TJNet, a company in Italy which provides music and other services on mobile phones, uses technology to track their customers' views on different products (See Section 4 for a more extensive discussion of TJNet). Other content providers in sectors such as financial services, healthcare, and travel, are also important in the spectrum of users as they experiment with the new technology and innovate on this platform.

In the past few years, another segment of content providers has developed in the industry. These mobile content integrators such as MForma, Arvato Mobile, Buongiorno, and iTouch have positioned themselves as

content and technology info-mediaries between the content providers and the carriers. Such companies' roles are to develop content specifically for mobile devices, adapt content to legacy phones and provide services to carriers and content providers such as the management of intellectual property rights. These integrators who perform B2B services, are an important part of the ecology of this new paradigm [35]. Finally, the device manufacturers both the traditional ones who develop handsets and those who develop hybrid content/technology devices such as Palm Pilots and Treos are hotbeds of innovation as they design more sophisticated devices which are capable of handling multi-dimensional content and lead the way in focusing innovation on the mobile platform on personalization whether it is a ring tone, a wall paper, or the color and design of the phone.

4. TJ Net: A Case Study

TJNet is a mobile content provider based in Rome, Italy. It is a subsidiary of Bertelsmann, an internationally known media conglomerate which is headquartered in Gutersloh, Germany. Bertelsmann is a leader in several market segments including book publishing, television production and music publishing. Among its businesses is Random House, the number one English language book publisher in the world; RTL, the number one television production company in Europe and BMG (which recently merged with SONY), which holds the number one spot in album sales in the United States [36]. During the 1990s, Bertelsmann invested in various New Media ventures including a \$50 million investment in AOL; a \$300 million in the online division of Barnes and Noble; and a significant investment in Napster, the online music swapping service. In addition to putting some of its money and efforts into capitalizing on digital-based innovations, Bertelsmann also formed a group within the Company called Arvato Mobile which has two subsidiaries - Arvato Mobile and TJ Net - devoted to mobile content development [37].

TJNet was founded in 1999 by Paolo Roatta, an entrepreneur who was working at the time as an intern for BMG. Roatta realized that the mobile platform was beginning to take off in Europe and decided to develop the capability for providing music and entertainment services to mobile phone users in Italy. With backing from Bertelsmann, Roatta launched his B2C service in May 2000 and targeted the 12 to 25 year old market in Italy [38]. A salient characteristic of TJNet's music channel was its emphasis on personalization. Thus users would call the service and be able to personalize the music they played on their phones. The phone in effect became a remote control with various keys programmed to enable users to choose between listening to a

particular artist, popular Italian music and popular International music, as well as other services geared to this age group, e.g., the love note of the day, the horoscope of the day. Once a user registered on the system, he or she could send a song to another user for example. Since the service was free at least initially, the senior management of TJNet had to find a means for generating some revenue which would enable them to keep the service running. At first, they tried to persuade advertisers to develop commercials specifically for the TJNet service which users would listen to periodically while they played musical selections. For the advertisers, the big attraction of the service was the fact that TJNet tracked the demographic profiles of its users. Thus, when a caller first signed onto the service, an IVR (Interactive Voice Response) system would be enabled which would ask the caller to key in such characteristics as sex, age, and Zip Code. This information would then become part of TJNet's database. Advertisers would be able to use this data to target products to particular segments of the market rather than blanket the entire user population.

While this model seemed appealing, advertisers were not overly enthusiastic about this service since the mobile platform was relatively new and untested in 1999 and they were reluctant to invest dollars into an arena that was still unproven. TJNet then approached WIND, one of the largest mobile carriers in Italy and brokered a deal in which WIND would in effect underwrite TJNet's service. WIND would pay for the traffic, i.e., phone calls to the carrier. In exchange, TJNet's service would only be available to WIND subscribers. This arrangement proved to be a boon to both parties. Immediately after the launch of the service, TJNet received one million calls a day and for a while, the Company's phone number was called more often than any other number in Italy. In less than a year, there were over 2 million customers who registered via their cell phones for the service. For WIND, which had positioned itself as a mobile carrier for the youth market, providing the TJNet music service solidified their lead on the mobile platform for this market segment. Indeed, a survey of WIND's customers revealed that roughly half a million of them became WIND customers because of TJNet's service. With a registration fee of 25 Euros to become a WIND subscriber, this translated into a revenue stream of over 12 million Euros for WIND.

Though TJNet's music channel was a resounding success, the Company still needed a stable revenue stream. In an effort to generate some revenues, TJNet partnered with the number one Internet site in Italy which sells CDs and enabled the users of TJNet to buy CDs via their cell phones. Cell phone users bought large numbers of CDs on impulse because it was easier to buy CDs through their cell phones than via the Internet. As a result of this trial, the managers of TJNet realized that

impulse driven buying was a key aspect of user behavior on cell phones and designed 50 services which provide the Company with revenues from 'impulse driven micropayments'. Thus for example, when a user sends an SMS to TJNet requesting to buy a ringtone, TJNet charges two Euros directly to the user's SIM card. The user is billed by the mobile carrier and TJNet gets a cut of the revenue for each transaction. Both TJNet and the mobile carriers in Italy which include WIND, Vodafone, and TIM clearly benefit from this arrangement. TJNet's ability to track its users' likes and dislikes through its software enables the Company to continually recalibrate its offerings for the marketplace. While TJNet's B2C business is thriving, it also provides comprehensive B2B content provisioning services for large mobile carriers such as Vodafone and T-Mobile. These services include adopting content for the wide variety of handsets in the market and managing the complexities of intellectual property rights and licensing of content. TJNet's various business models have enabled the Company to be agile, respond to the marketplace and be profitable.

4. Conclusion

The case study of TJNet described above serves as a starting point for discussing the paradigm of innovation outlined in Section 2. It is a study of a mobile content provider which has in effect redefined the roles of technology companies, content providers and users. Instead of competing with technology companies such as Vodafone and WIND, TJNet has ceded technical expertise to these companies and has provided mobile carriers with a substantial source of revenue. Thus, the management of the Company has recognized that it needs to access the sources of innovation outside of the Company and that organizationally, the Company exists in a more fluid networked environment. In addition, it has leveraged the user population as a source of innovation and continual feedback. Teen impulse buying led to a revenue generating model and continual feedback on what works and what doesn't work in terms of services and has enabled the Company to tweak its offerings to get a maximum return. The mobile carriers are able to access the expertise of content providers without giving up the source of their revenue, the customers themselves. In addition, the B2B services that TJNet provides enables mobile carriers to outsource some of the most complex transactions regarding content development which enables them to concentrate on providing comprehensive services to their customers. As the third important element in the networked environment, the users provide valuable feedback to mobile carriers, content providers (in this case TJNet) and device manufacturers.

As the mobile platform evolves, the key stakeholders in it face numerous challenges. Mobile

carriers need to continue building out the infrastructure to accommodate new services while at the same time providing optimum services to their customers. Content providers have to find ways to integrate the mobile platform into their businesses. This may entail rethinking their business models, hiring new talent and developing organizations which are conducive to fostering innovation. Device manufacturers face the constant challenge of designing devices which can accommodate current content and not become obsolete as new content appears in the marketplace. All three of these constituencies need to tap into the user population which is a major source of innovation on this platform. The mobile platform marketplace is becoming increasingly crowded. With new entrants such as Microsoft, which is developing a new cell phone platform [39], mobile carriers, content providers and device manufacturers must be agile in order to survive and thrive.

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