

Mobile Application Stores

Assessing Opportunities for Telecom Operators

Telecom & Media Insights
Issue 50

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1 Abstract

Mobile application stores have generated considerable interest and discussion in the recent past. Particularly, the success of Apple's application store for the iPhone has established online storefronts as an important distribution channel for mobile content and applications. This has led device players, Operating System (OS) vendors, and many mobile operators to launch their own application stores. We expect the mobile application market to be worth almost US\$ 9 billion globally by 2013¹. For operators, application stores can be an important lever to grow data revenues—our estimates indicate that operators can improve their non-SMS data revenues by 10 to 11% over a five year period, by leveraging direct revenue streams through application downloads, mobile traffic as well as indirect revenues such as advertising and provision of billing services. However, telcos will need to compete with device and OS vendor stores to attract consumers and developers to their storefronts, which could prove to be a daunting task. Operators will also need to develop sustainable revenue streams from application stores, in light of falling ASPs² and proliferation of free applications. We recommend global players with a large captive customer base to build end-to-end capabilities, while smaller regional telcos should undertake only select activities in-house, relying extensively on third-parties for the technology platform. Operators should launch platform-agnostic application stores, and support non-device specific platforms in order to target a wider subscriber base, and expand the market for mobile applications. In order to maximize revenue potential from storefronts, operators should also experiment with innovative pricing models that are linked to the usage, popularity and stickiness of the application. Moreover, operators can grow new revenue streams through the provision of white-label services such as billing support, customer management and payments to other storefronts.

¹ Capgemini TME Strategy Lab Analysis.
² Average Selling Price.

2 Introduction

Application stores have gained considerable attention in the recent past, and are emerging as an important channel for the distribution of mobile content. An application store is an online aggregation and distribution platform for downloadable applications for smartphones and high-end feature phones. For developers, these stores act as a channel to reach out to a large number of consumers, while providing necessary functionalities such as billing, payment gateway and customer management. For consumers, storefronts provide a single destination for accessing reliable mobile applications across a variety of genres, with trusted and secure mechanisms for managing the interactions.

In this paper, Capgemini's TME Strategy Lab qualifies the application store opportunity for mobile operators, and proposes some key recommendations on how telcos can successfully launch and operate mobile application stores.

Key Developments in the Mobile Application Store Market

Application stores have been in existence for almost a decade. For instance, Handmark and Getjar, both independent stores, have been operational since 2000 and 2004 respectively. However, the multiplicity and proprietary nature of device platforms and consequent high entry barriers for independent developers have restricted these stores from garnering a wide developer and end-user community. By 2008, around eight years since its inception, Getjar had around 50,000 applications available on its store³. This number was surpassed by Apple's App Store in less than a year of launch⁴.

Figure 1: Major Changes Introduced by Apple App Store™

		Pre App Store Launch	Post App Store
Application Development	Application Creation	▪ Professional Companies/Self	▪ Professional Companies/Self + Retail
	Application Ownership	▪ Primarily Carrier	▪ Developers
	Application Accessibility	▪ On deck – One among many services	▪ On deck – Dedicated store for apps
	Time to Market	▪ 2-3 months	▪ ~2 weeks
Degree of Openness	Platform Openness	▪ Closed, permission-based	▪ Open subject to sign up
	Supporting Devices	▪ Spectrum of devices – low-and-high-end	▪ Some high end devices
	Content Restrictions	▪ Many non-competition restrictions	▪ Fewer restrictions
Costs for Developers	Porting Cost	▪ High porting costs to support wide range of devices	▪ Limited device support
	Entry Route & Membership Fees	▪ Complicated, differing pricing amongst operators, aggregators	▪ Streamlined processes, fees in-line with market
	Revenue Split	▪ 20/80 or 30/70	▪ 70/30 or 80/20

Source: Capgemini TME Strategy Lab Analysis; *Mobile app store overview*, Distimo, November 2009; *Mobile app store overview*, 2005 *Mobile Games White Paper*, IGDA

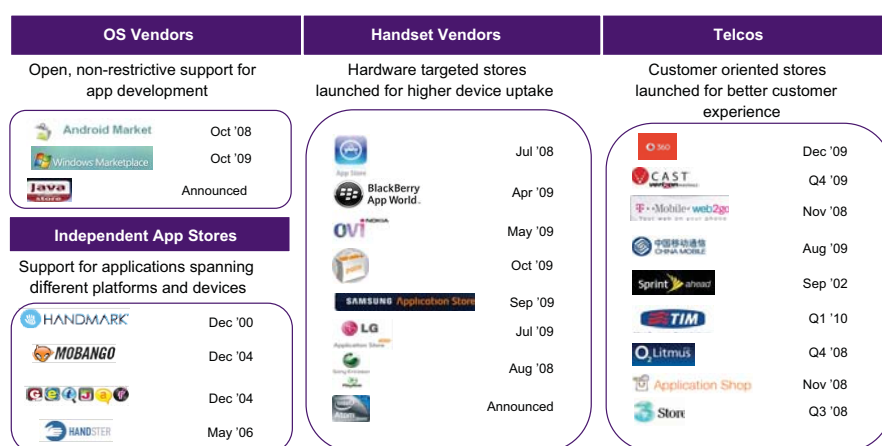
³ JetViewVietnam.com, *GetJar exceeds half a billion application downloads*, December 2008.

⁴ TechCrunch, *State Of The iPhone Ecosystem: 40 Million Devices and 50,000 Apps*, January 2009.

The success of Apple's App Store™ has resulted in a paradigm shift in how mobile applications are created and distributed (see Figure 1). Apple managed to build a strong developer community by allowing developers to retain 70% of the revenues generated from an application. Moreover, Apple provided a captive customer base of over 36 million⁵ iPhone users who have cumulatively downloaded more than three billion applications by the end of December 2009⁶.

The success of Apple's App Store was followed by a number of announcements from various players around their decisions of entering the space. Device vendors such as Nokia and Research in Motion (RIM, maker of the Blackberry smartphones); OS vendors Microsoft and Google; and telecom operators, have all entered into the applications store market (see Figure 2).

Figure 2: Application Store Launches by Various Types of Players



Source: Company Websites and News Releases

Telco Activity in the Application Stores Space

Most leading mobile operators have either launched their application stores or have announced their intent to launch one in the near future. The launch strategies range from creating proprietary solutions to embracing third-party hosted application stores (see Figure 3).

The trend of launching these stores is not limited to developed markets, with multiple players from the emerging economies including Bharti Airtel (India), China Mobile and TIM Brazil also announcing their entry into this space.

Operators have forged strong alliances as a part of their strategy for competing in this space. These alliances tend to be for accessing technology, content, or other ancillary services necessary to provide application store offerings. Sprint partnered with Getjar to make almost 60,000 applications available to its customers through a link on its portal, in an effort to increase the variety of content available. Airtel in India has engaged IT solutions provider Infosys to implement an application store, based on Infosys' application store platform called "FLIP". Similarly, operators are also tying up extensively with credit card companies and online payment merchants for a more convenient application store experience for their customers.

⁵ Apple Insider, *Apple's iPhone was No. 3 worldwide smartphone in 2009*, February 2010.
⁶ Apple Insider, *Apple announces App Store downloads top 3 billion*, January 2010.

Typical telco entry strategies into application stores include creating proprietary solutions, deploying white-label stores and aggregating third-party stores

Figure 3: Application Store Launches by Telecom Operators

Proprietary Stores		White-label Stores		Aggregate Third-party Stores	
Greenfield Stores	Existing Mobile Portal Upgrades	Off-the-Shelf App Store Solutions	Hosted App Store	Application Store Aggregator	Open Source Based App Stores
<ul style="list-style-type: none"> Operators with large customer base have developed own application stores It involves provisioning of an extensive application store solution 	<ul style="list-style-type: none"> Some operator portals already have necessary elements in place for a successful store These include third-party management, revenue assurance, customer profile management and service catalogs 	<ul style="list-style-type: none"> Some operators buy platforms directly from companies such as Amdocs Operators can acquire companies providing application store platform solutions 	<ul style="list-style-type: none"> These are similar to off-the-shelf stores but managed by third parties such as Ericsson Independent app stores such as GetJar and Handmark provide white-label stores that are then managed by them 	<ul style="list-style-type: none"> These stores have multiple third party stores accessible through a single platform Smaller operators with a restricted customer base can act as aggregators 	<ul style="list-style-type: none"> App stores have also been created around open source platforms such as Android or LiMo This allows sharing the entire revenue with the developers, rather than mobile OS vendors
Examples					

Source: Capgemini TME Strategy Lab Analysis. Company websites and news releases

Telecom players are also collaborating to develop standards. The most significant announcement has come from a consortium of 24 operators who have come together to form the Wholesale Applications Community (WAC)⁷, which aims to create an open platform for developers to reach the customers of its member networks. Other initiatives include BONDI⁸ which is attempting to build a new platform for secure mobile application development, and Joint Innovations Lab (JIL)⁹ which is creating a widget ecosystem which provides developers with access to various operator assets.

While application stores are an important growth area within the mobile data market, telcos are faced with the question of whether they should launch application stores at all, and if yes, how should they position themselves in a space dominated by device players. In the subsequent sections, we assess the need for operators to launch application stores in more detail.

7 The Wholesale Applications Community is a global alliance of leading telecommunications operators and device manufacturers that establishes routes to market for developers.

8 The BONDI initiative is backed by operators including 3 Group, AT&T, T-Mobile, Telenor, Telefónica, Telecom Italia and Vodafone.

9 Joint Innovations Lab (JIL) is a joint venture between Vodafone, Verizon Wireless, China Mobile and Softbank Mobile.

3 Rationale for Telcos to Launch Application Stores

Application stores can be an important lever for telcos to prevent disintermediation from the mobile content value chain

We believe operators should launch application stores to retain their prominent position in mobile content distribution, as well as to benefit from new revenue streams through the sale of applications, provision of access services and rendering of additional services such as integrated billing and access to network Application Platform Interfaces (APIs).

Revenues from Application Downloads are Set to Grow Exponentially

Application stores are emerging as a key distribution channel for mobile content. An increasing number of users are consuming popular mobile content such as music or games through downloadable mobile applications. According to a survey, 70% of mobile users download mobile applications, the highest amongst all mobile content categories¹⁰.

We estimate the total revenue from paid mobile application downloads in 2009 at around US\$ 3.8 billion¹¹. However, indications are that this is only a fraction of the total market opportunity. Changes taking place across the ecosystem are likely to result in both demand side pull as well as supply side push, ultimately resulting in growth of the segment.

A major thrust from the demand side will be a result of the extension of the customer base for the service. With greater awareness about application stores, uptake is expected to grow beyond the early adopters. The trend is expected to be further strengthened by increasing penetration of smartphones. Adoption trends of mobile data services indicate that 73% of smartphone users have downloaded at least one application¹².

Similarly, on the supply side, improved device capabilities such as bigger screens, position sensors, better user interfaces, are expected to enable a number of innovative applications with compelling use cases for consumers. Easier application discovery and simpler billing will enhance monetization opportunities for developers, thereby broadening the developer base and ultimately improving the adoption of services.

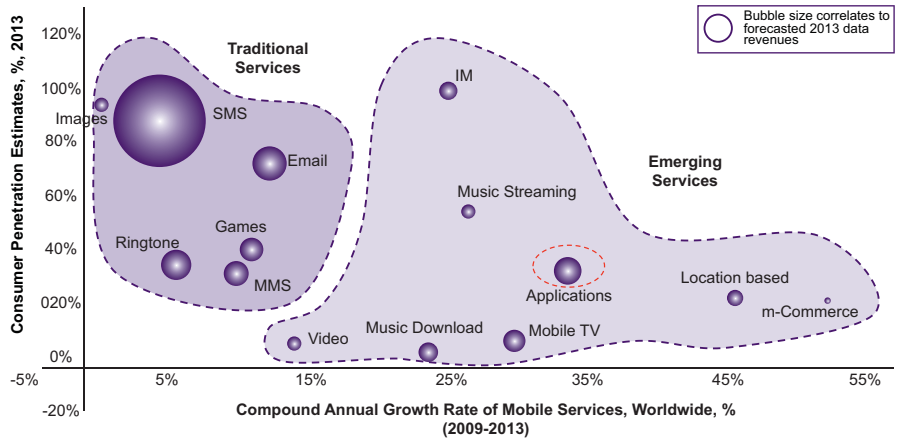
These factors are expected to give a strong boost to the adoption of mobile application services. We expect the market for mobile applications to reach US\$ 8.6 billion by 2013, growing at a CAGR of around 30% between 2010 and 2013 (see Figure 4).

¹⁰ Xiam, *Mobile content discovery*, August 2009.

¹¹ Capgemini TME Strategy Lab Analysis.

¹² Brookings, *What Consumers Want From Mobile Communications in the United States, United Kingdom, Spain, and Japan*, September 2009.

Figure 4: CAGR, Revenue and Consumer Penetration of Various Mobile Data Services, Worldwide, 2009-2013



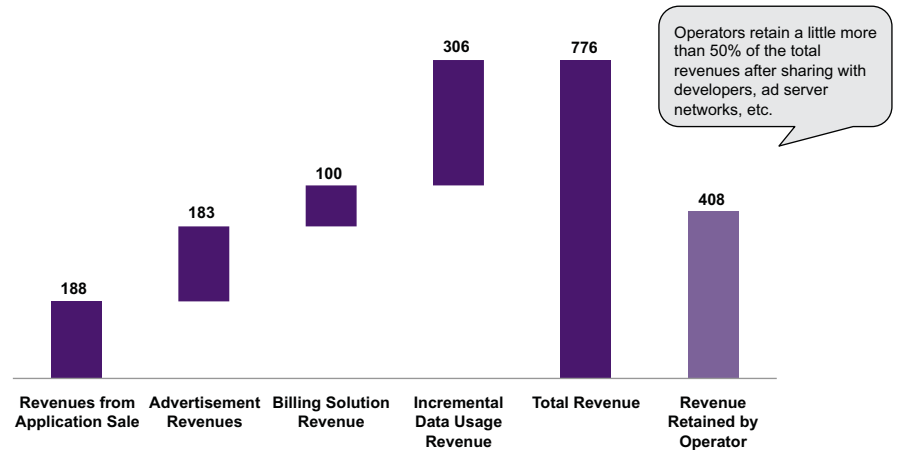
Source: Capgemini TME Strategy Lab Analysis; Informa, *Global Mobile Network Traffic 2007-2012*; Informa, *Global Messaging End User Forecasts*, November 2008; Morgan Stanley, *Mobile Internet*, December 2009; Nielsen, *Mobile Media Europe: State of the EU5 Union*, March 2009; ComScore, *The Next Big Things: Mobile Internet & Applications - Gaining Momentum*, 2009

Mobile applications have emerged as a high-growth and sustainable avenue of revenue generation

The Potential for Uplift in Data Access Revenues is Attractive

Launching an application store will provide operators with an opportunity to augment their existing data services revenue. There are going to be primarily four revenue streams for operators, namely revenue share from sale of applications, mobile advertising revenue, data usage revenue and payment gateway revenue. Relying on the aforementioned revenue streams, we believe that a typical operator¹³ can expect a non-SMS data revenue uplift of up to 11% by 2013¹⁴.

Figure 5: Revenue Uplift from Operator-Owned Application Stores



Source: Capgemini TME Strategy Lab Analysis

Beyond the revenue potential that accrues from the various streams depicted in Figure 5, operators will also be in a position to drive the kind of applications that are provided on their stores. By encouraging developers to write applications that rely on data in the cloud, operators can drive adoption of applications that require a higher data usage. Our analysis suggests that such an approach holds the potential to drive up overall revenues from the application store by as much as 17% with over a third of this incremental revenue coming from increased data usage. A key driver for this uplift will likely come from consumers upgrading their data plans.

¹³ We have considered a hypothetical Western European operator with a subscriber base of 50 million and data ARPU of US\$12.
¹⁴ Capgemini TME Strategy Lab Analysis.

A successful application store will be critical for operators to maintain the right subscriber mix by retaining high-value customers

The revenue upside appears specially attractive since the investments required for setting up an application store would not be significant when compared to typical telco initiatives. While the capital costs associated with launching the initiative would be fairly small in the telecom operator context, the main component of the operating cost would be around marketing of the storefront.

Storefronts Help Attract and Retain High-Value Subscribers

In addition to augmenting current data revenues, application storefronts can also be instrumental in attracting and retaining subscribers with high-spend on mobile data services. High-value customers exhibit a greater tendency to download and use mobile applications. For example, in the US, while only 11% of subscribers with annual income lower than US\$ 25,000 download mobile applications, the figure shoots up to 34.3% of the consumers for the category comprising income levels greater than US\$ 100,000 every year¹⁵. To retain these potentially high-value customers on the network, it would be important for operators to provide a compelling application store offering.

Application stores would also be important for operators to build and create a robust content ecosystem. Operator content strategies have only been moderately successful until now. For example, between 2007 and 2008, the share of mobile web traffic for operator portals fell from 57% to 22%¹⁶. To re-establish their position in the content value chain, operators would need to create a strong ecosystem.

A successful application store offering could help operators take the preliminary steps in this direction. The storefronts allow operators to forge relations with content owners and creators, which can be leveraged while sourcing content for other initiatives. More importantly, application stores can be a lever to create a user-base comfortable with purchasing and using operator-provided content and services. A large base of content users will also have a knock-on effect on content providers, who would be more willing to provide their services through mobile operators.

“Do-Nothing” is not an Option

Operators are threatened by the prospect of being rendered mere “bit-carriers” due to the expansion of online and device players across the value chain. The emergence of application stores as primary channels for mobile content distribution can further impact operators’ positioning in the value chain. With popular services such as web browsing, games and social networks being increasingly consumed over the mobile platform, application store expertise is increasingly becoming critical in disseminating these services to the consumers. Consequently, inaction in this space would not only undermine the competitive positioning of operators vis-à-vis other players who actively launch application stores, but also the ability to drive data consumption amongst existing consumers.

However, a well-planned application store offering can present an opportunity to operators to retain a share of mobile content revenues, retain control over the end-consumer, and be in a position to define the overall data consumption experience.

¹⁵ Brookings Governance Studies, *What Consumers Want From Mobile Communications in the United States, United Kingdom, Spain, and Japan*, September 2009.

¹⁶ Nokia Siemens Networks, *Nokia UK Smartphone Study*.

4 Key Challenges for Telcos

While application stores present an attractive opportunity for telcos, success in this market is likely to be faced with many challenges, as operators will need to compete with well-established device and OS vendors for subscribers as well as developers, while focusing on growing data revenues. This section details some key constraints telcos are likely to face in launching and operating an application store.

Device Vendor-owned Application Stores Likely to Dominate

The growing opportunity in the applications store space is likely to result in intense competition among players to try and grab a dominant position in the market. Among the device manufacturers, Apple, with its existing dominant position in the market and access to the early adopters of technology with a propensity to spend on mobile services is likely to continue as the dominant application store. RIM, with access to a niche, enterprise audience is also likely to be a strong contender in this segment. Nokia can leverage its large base of existing users and its strength in the emerging markets.

Among the various platforms, Android is likely to gain traction in the market driven by its success in creating a good developer community. Bolstered by the growing optimism around the success of Android-based devices and relaxed policies around content restriction, the developer community for the Android Store has grown rapidly and had made available around 16,000 applications on the store by early December 2009¹⁷. However, the biggest possible game-changer in this space could be Microsoft's launch of Windows Mobile 7 Series, whose launch was followed by rave reviews. Considering the fact that Microsoft has extensive established developer relationships, a technologically superior offering from the organization along with suitable encouragement for developers will be able to enhance the possibility of success of the Windows Marketplace.

Given the inherent advantages enjoyed by the device vendors, it is likely that they will continue to be the dominant players in the applications store space in the years to come. Device vendors have the advantage of being able to position their stores on-deck for the large base of users that they have. Also, in addition to having strong brands, they will be the best positioned to offer applications which make optimum use of device functionalities. While operator stores would be able to leverage their existing customer experience management capabilities, they would have to create a strong proposition for users as well as developers to compete in the market. We expect that independent third-party stores will find it difficult to compete in this space, and will need to get into extensive partnering agreements to continue to be relevant.

¹⁷ Techcrunch, *Google: Actually, We Count Only 16,000 Apps In Android Market*, December 2009.

Application stores can be an important lever for telcos to prevent disintermediation from the mobile content value chain

Fragmentation of Developer Community

One of the consequences of the multiplicity of platforms, devices and application stores will be that developers will align themselves with particular storefronts. Since the success of a storefront is intricately linked to the quality of applications available on it, the competition for retaining the best developers on the major stores is going to be intense. The ability to attract developers to create applications exclusively for particular storefronts will depend on a number of factors such as revenue share offered, developer support for testing and marketing of applications, extent of content restrictions, captive customer base and ease of application creation.

Declining Average Selling Price of Applications

Driven by the proliferation of free and mass market applications, the average selling price of applications is likely to drop – analyst estimates indicate a value of US\$ 1.72 by 2014, as compared to a value of US\$ 3.83 in 2009¹⁸. The positioning of a storefront in the market has a huge bearing on the ASPs, as indicated by differential pricing of certain applications on various stores. For example, the popular gaming application Tetris is priced at US\$ 4.99 on the Apple App Store, while it is priced at US\$ 6.99 on the Windows Marketplace¹⁹. Consequently, storefronts will need to closely examine their positioning in the market and formulate strategies accordingly for maintaining profitability of the application store operations.

In summary, application stores can be an important lever for telcos to prevent disintermediation from the mobile content value chain, and help retain and grow data revenues. However, operators will need to compete with device and OS vendor stores for developers as well as revenues, which could prove to be a daunting task. Operators will also need to develop sustainable revenue streams from application stores. In the next section, we elaborate on how telcos can overcome these challenges to successfully launch and monetize application stores.

¹⁸ Ovum, *Telecoms 2020*, 4Q09.

¹⁹ Distimo, *Mobile Application Stores State of Play*, February 2010.








5 Recommendations

With the entry of a number of new players in the application store space, competition is expected to be intense. The device vendors with their early entry into the space and capability of addressing customers across the globe are expected to continue performing strongly. However, operators can take a number of steps, some of which leverage their existing competencies, that will help them successfully launch an application store offering.

Choose the Right Positioning Based on Scale

Operators need to decide on the extent of activities that they would undertake in the application store segment. While global players with a large captive customer base might want to build end-to-end capabilities in the space, smaller players might decide to undertake only select activities in-house, relying extensively on third-parties for the technology platform (see Figure 6).

Figure 6: Positioning Strategy for Operators in the Application Store Space

	Creation		Aggregation		Networks		Devices		Customer Management		Examples
	Testing Support	Category Support	Partnership	Platform Support	Reach	Lease Out	Feature phone Support	Customization	Retail	Billing	
Integrated Stores	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	 
Truncated Stores	✓	✓		✓	✓				✓	✓	  
White-label Stores			✓		✓	✓	✓			✓	 

Source: Capgemini TME Strategy Lab Analysis

The rationale for larger operators to build extensive capabilities would be their existing capabilities around sourcing and distributing content, and hence the prior existence of a strong ecosystem. For the smaller operators, the lack of negotiating leverage with scale players such as device vendors will be a key constraining factor in attempting end-to-end capabilities. The existence of a number of white-label solutions for various activities of an application store will make it easier for operators to enter the space by forging suitable alliances. For example, Ericsson’s recently launched eStore solution allows operators to easily set-up their application stores, while simultaneously giving them access to a number of applications across platforms and devices. T-Mobile has taken a similar approach in creating its storefront “web2go”, for which it has sourced the platform solution from mobile Internet platform provider SurfKitchen.

Support Device-Agnostic Platforms to Expand User Base

A critical component of operator strategy to compete in the space would be their support of device-agnostic platforms. This will allow operators to support a much wider device portfolio through their storefront, while simultaneously reducing porting efforts, and hence costs and time-to-market for developers. Additionally, platform-agnostic applications will allow a distinct positioning option for operators, thereby avoiding direct competition with vendor partners.

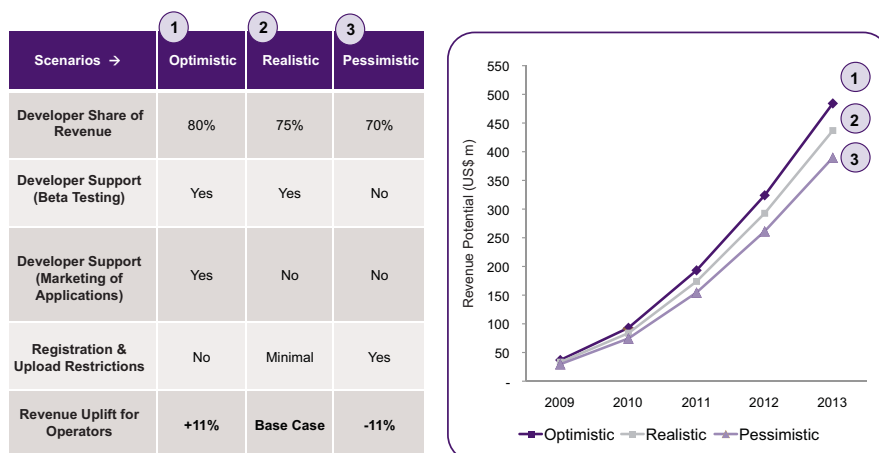
There are a number of commercial solutions already available in the market such as appMobi, Rhodes and PhoneGap which allow developers to create applications across platforms. In addition, there are ongoing industry initiatives such as JIL and the Wholesale Application Community, which are trying to create a common platform for application development.

Another option available to operators to encourage device-agnostic application creation would be to actively promote web-based applications. The evolution of network speeds will enable more complex applications to be delivered over the web, using software technologies such as HTML5, Flash and JavaScript. Not only will this allow platform agnostic application creation, but it will also help operators to extend the user base to feature phone users. Appropriate pricing strategies will allow operators to garner greater data usage revenues from users accessing more services over the web.

Consider Aggressive Revenue Share with Developers

Since the quality and reliability of the applications available on a storefront will be dependent on the strength of the developer community, it is imperative that operators provide the necessary incentives for the creation of exclusive applications for their storefronts. We believe that aggressive revenue share arrangements, wherein operators allow developers to retain a higher share of the application revenues when compared to other storefronts, can help operators play the role of “disruptor” and corner a higher market share. While a revenue share of at least 75% for the developers will be necessary to remain competitive, analysis indicates that by increasing developer share to 80%, operators can get incremental revenue uplift of around 11% points, resulting primarily from a greater market share of application downloads (see Figure 7).

Figure 7: Effect of Developer Support on Operator Revenue



Source: Capgemini TME Strategy Lab Analysis

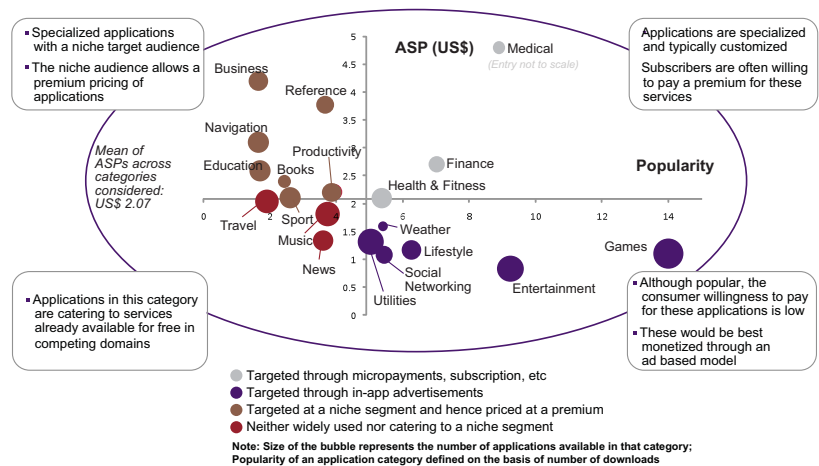
Aggressive revenue sharing with developers can help operators play the role of a “disruptor” and corner a higher market share

Additionally, operators could experiment with innovative revenue-sharing models to attract developers. For instance, popularity-based revenue share arrangement can provide the necessary incentive for developers to put their best work on the operator storefronts.

Enhance Revenues through Innovative Pricing

Operator storefronts also need to ensure that they formulate optimal monetization strategies. Operators should strive to develop pricing models which are optimized based on the nature of the application, with popularity, market potential and stickiness of an application being the defining criteria. For instance, applications in categories such as medical and finance are highly customized, resulting in a limited number of such applications. However, because of the utilitarian nature of these applications, the consumer willingness to pay is fairly high. As a result, these applications are suitable for subscription pricing (see Figure 8). Similarly, application categories such as games and entertainment although popular, have low consumer willingness to pay for such services. Consequently, such applications are better suited for advertisement-based monetization models. Operators should play an active role in formulating the monetization strategies of applications, so as to ensure the greatest returns from their storefronts.

Figure 8: Monetization Model for Various Application Categories



Source: Capgemini TME Strategy Lab Analysis; Charles Teague blog, July 2009

Operators should also closely examine the possibility of augmenting their revenues through the provision of white-label services such as APIs for providing access to network resources, billing support, contact centre management and other existing telco assets to other storefronts.

In conclusion, while application stores provide operators with a great opportunity to re-establish their position in the mobile content value chain, the opportunity requires a strong operational strategy for success. Operators need to leverage existing capabilities so as to be able to create a robust offering for the consumers. The opportunity should be looked at from the perspective of a strategic imperative to reverse the present trend of disintermediation from the content ecosystem, rather than a pure revenue enhancement exercise. Over the next few years, as the popularity of application stores as a content distribution platform grows, operator initiatives will emerge as the cornerstone of their overall mobile data strategy.

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