Driving Development:
mServices Commercialization Analysis

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mServices Commercialization Overview

As mobile phones continue to grow in capability and market penetration, countless applications and services are now available allowing users to communicate, access real-time data, and perform everyday transactions. While many of these applications were first developed by hobbyists, more and more developers are building revenue streams around their applications and targeting customers on a regional or worldwide basis.

infoDev, a World Bank agency, working in cooperation with The Ministry of Foreign Affairs of Finland and Nokia is the process of establishing mobile application labs in Africa, Asia, and Eastern Europe and Central Asia (ECA). Each mLab is expected to generate and commercialize 8 to 10-mobile applications by the end of 2012. In line with that objective, mLab Southern Africa commissioned Vital Wave Consulting to deliver this analysis to drive the development of financially sustainable mobile-based services.

The mServices Commercialization Analysis provides an assessment of the main distribution methods available to mServices developers and explores the monetization model for each. Each approach has distinct advantages and disadvantages and requires working with a different set of partners. Figure 1, below, summarizes key findings from the analysis, which are discussed in detail in the following sections.

Figure 1. Summary of Key Findings from mServices Commercialization Research and Analysis

Distribution Method	Pros	Cons	Key Players	Monetization Model
SMS	-Simple to develop -Works on all Phones	-160 character limit -Not real-time service	-SMS Aggregator -Premium SMS provider -Mobile Operator	-Revenue Share -Subscription -Sponsorship / Advertising
USSD	-Works on all GSM phones -Interactive	-Hard to offer in multiple markets -Content privacy issues	-Mobile Operator	-Revenue Share
Online Application Stores	-Low entry barriers -Store offers marketing support, payment gateway, and global presence	-User must find, download, and install app -Multiple app versions needed -Differentiation difficult	-App Store -Mobile Operator -Handset Maker -Payment Gateway	-Per Download -Freemium / Premium -Advertising
Mobile Web	-Easy distribution -Simple to update	-Connectivity required -Limited features -Cross device compatibility issues	-Website Host -Payment Gateway -Mobile ad network	-Advertisement -Sponsorship / Affiliation -Subscription -e-Commerce

Introduction

Mobile service developers have a number of distribution and monetization approaches available to them. Often these approaches are considered after the service has already been created. However, during the design phase developers will benefit from identifying their target audience(s) and understanding how they will generate revenue from the service that they ultimately offer to the end-user(s). Specifically, the following factors should be considered as developers are identifying the most advantageous commercialization approach for their application:

- Who is the target end-user for the service? What type of mobile handset is the end-user likely to use? What features can these handsets support? Can an application be easily downloaded to the handset? How tech savvy is the typical end-user? Are there any literacy or cultural issues to consider?
- How will the developer reach the end-user to make them aware of the service? Does the target end-user typically have access to the Internet? Are there any partners that can help promote the service? How will the targeted end-users pay for the service? Are end-users both willing and able to pay?
- Is the end-user the same as the economic-buyer? Will the service be purchased by a third party, like an NGO or government agency, and then distributed to the targeted end-user? How will the economic buyer pay the developer?

The four most common approaches for distributing mobile-based services to end-users are as follows. Each will be explored in detail in the following sections of this analysis:

1. Deliver the service through SMS text messaging;
2. Deliver through a USSD-based service;
3. Develop a software application that will be downloaded from an online application store; or,
4. Build a mobile-optimized website that can be viewed on a web-enabled mobile phone.

SMS Messaging

In the developing world, SMS text messaging is still the predominant method for delivering mobile-based services. This includes any type of text content can be delivered via SMS such as news, sports scores, weather reports, financial data, or alerts and notifications to their subscribers. To use SMS-based services users are not required to install additional software; the capability is embedded in every modern phone.

Key Players

SMS Aggregator: Independent service providers that transfer sent or received SMS messages to and from the mobile operator's network. By working with a single SMS aggregator, such as Clickatell, developers can offer services in multiple areas served by different mobile operators.

Premium Rate Service Provider: SMS users are charged a higher rate for premium SMS, which is then split between the developer and the provider. The provider can be either the mobile operator, or more likely an aggregator. Note that in some countries, regulations prevent the mobile operator from also offering value-added services like Premium SMS. In these cases, the premium provider will be an aggregator or other value added service provider.

Mobile Operator: The developer may have the option to develop a SMS service and sell it directly to the local mobile carrier who will be responsible for monetizing and maintaining the service. The mobile operator is usually involved in delivering premium rate services, as well.

Monetization

For SMS based services, there are three ways in which a developer can get paid for delivering content to a subscriber's phone:

Revenue share: The developer can either work directly with the local mobile operator or an aggregator, like Clickatell, using a Premium rate service to enter into a revenue sharing agreement based on the amount of SMS user traffic that is generated. The operator gets paid by deducting airtime from the subscriber's account. The operator pays the aggregator who in turn pays the developer.

Subscriptions sold directly to an end user: End users can subscribe to a service either directly with the developer or via a third party such as an aggregator or other media company. Many developers find it advantageous to work with a third party and rely on their payment gateway, as opposed to collecting fees from the end users directly. Usually there is a revenue sharing agreement with the third party, who may also charge for hosting and marketing the service.

Sponsorship or advertising: The developer earns revenue by serving ads to their end users. An advertiser or sponsor pays a sponsorship fee to the developer or content provider to have their name or brand associated with the content. For example, "Sports scores brought to you by ESPN."

Advantages

Simple and easy: SMS services are easy to develop and don't require advanced programming skills. Users do not require additional software, and every phone can send and receive SMS text messages.

Works on all phones: To use SMS-based services, users are not required to install additional software. This capability is embedded in almost every type of phone.

Ease of deployment: By working with a single SMS aggregator, the developer can offer the service in multiple areas served by different mobile operators, whereas USSD services, for example, require a relationship with each mobile operator in the geographic areas being served by the service.

Disadvantages

Limited functionality: SMS text messages are very simple with no graphics or audio and each text is limited to 160 characters.

Not suitable for all services: Because SMS is not a real-time service, it is not suitable for many services, especially if the information delivered requires immediate attention like emergency alerts.

USSD Services

USSD (Unstructured Supplementary Service Data) capability is built into almost all current GSM phones, and does not require the user to download additional software. Whereas SMS uses a store-and-forward technique to deliver text messages, USSD initiates a session between the mobile user and the USSD application platform allowing data to be sent back and forth in real-time. This makes USSD services useful for menu-driven applications, and is often used for mobile payments, and balance enquiry or "top up" applications.

Key Players

Mobile Operator: The local operator typically hosts the service content and handles all transactions with the mobile user.

Monetization

Revenue share: USSD services are typically metered with time-based billing. The operator deducts a per-second fee from the users account and splits this revenue with the developer, although the operator usually receives a majority of this fee.

Advantages

Works on all GSM phones: USSD-based services will work on any type of GSM phone with no additional software required.

More interactive than SMS: Unlike SMS, the USSD protocol creates a real-time connection during a USSD session. The connection remains open, allowing the user to interact in real-time with the content server.

Disadvantages

Lower revenue for developer: Since USSD services are operated only by the mobile operator, revenues for the developer tend to be lower.

Content privacy: The mobile operator hosts the servers containing content for USSD services. Depending on the service, this may be unacceptable for some developers who are concerned about handing over their client data.

Harder to offer in multiple markets: Offering a USSD service in multiple markets will require dealing with the different mobile operator who serve these areas. By contrast, a single SMS aggregator can deploy a solution to multiple markets.

Online App Stores

The latest smartphones, like the Nokia N8 or Apple iPhone, are gaining market share among mobile phone users in developing countries, especially in urban areas. These phones use feature-rich operating systems that can run third-party applications providing a vast array of services related to banking, health, entertainment, gaming, and productivity. But it's not just smartphones that are running software applications these days. Many of today's basic feature phones, such as the Nokia 5110, use platforms like Java ME or BREW and also support third-party applications. New innovations related to billing and debiting are also increasing the number of consumers who can buy these downloads.

Key Players

Typically, mobile phone software downloads are available through online App Stores that offer a direct developer-to-consumer channel. To commercialize the application, a developer must form a business relationship with one of these App Stores. Note that the mobile operator may also be involved in this transaction.

App Stores: can be operated by any of the organizations that contribute to delivering mobile services to the end-user:

- Handset manufacturer – Nokia's Ovi store or Apple's iPhone store,
- Operating system maker – Android Market or Microsoft's Windows Phone Marketplace,
- Mobile Carrier – Safaricom, MTN
- Independent vendors – GetJar, Amazon

Choosing the right online App Store will require striking a balance between which one provides the most monetary benefit while at the same time offers the best access to the target market. Stores operated by the local mobile carrier often will require a bigger share of each sale, but may have the best local presence. Independent sites like GetJar may provide the biggest payout, but because of the site's global reach and numerous competing apps, it may be difficult for the target end-user to find the app.

Mobile Operator: It may also be difficult for some consumers to purchase applications from App Stores, especially those operated by handset or operating system makers, because the consumer lacks an online method to pay for them or doesn't use credit cards. This is where the mobile operator can step in to facilitate these purchases. For instance, Nokia is able to collect payment from the consumer's mobile operator for the applications purchased on the Ovi Store. The mobile operator debits this amount from the consumer's account. However, this is nontransparent to the application developer who would still receive payment from the App Store operator.

Advertising Network Provider: Many advertising network providers, like Google's Adsense, have developed versions for mobile applications that allow app developers to embed targeted advertising within their applications.

Payment Gateway Provider: E-commerce service providers, like PesaPal, can authorize payments for transactions made online and using mobile phones by accessing the buyer's bank or mobile money account or prepaid balance with his/her mobile operator.

Monetization

The developer and the online store share revenues from the sale and use of the application, and as this market matures, those players involved in the mobile service value chain are creating more options for collecting revenues from the end user.

Per Download: The consumer can pay a one-time fee for the application download.

Freemium/Premium: The developer can offer a free version of the application with limited features. The user is incented to upgrade to the full-featured, premium version for a fee or by subscribing to a service. Freemium versions may be supported through advertising.

Advertising: The developer sells space to advertisers via ads or content embedded in the application. The developer can collect a "click-through" fee every time the application user clicks on the advertisements.

Advantages

Low barrier to entry for the developer: Getting the application online is usually a self-service process with no third parties, like a local mobile operator, to go through and very low upfront costs.

Built-in marketing support: Consumers in every market are becoming more aware of the downloadable content available online at the various App Stores who widely advertise their sites. This can save much time, effort, and money to market the service.

Global presence: Most App Stores can be reached by anyone, anywhere with Internet access and so offer a global presence and increased revenue opportunities. Note that consumers with more basic feature phones, or limited Internet access, will be harder to reach. In some cases, the handset maker or mobile operator may offer downloads at their local office. Some stores enable pricing customization on a per country basis as well.

Disadvantages

High barrier for end user: Developing a downloadable software application and distributing this application through an online App Store can limit the available market for the application, especially when trying to reach consumers at the bottom of the economic pyramid. Services developed to primarily address a social mission, are unlikely to be distributed through an online App Store.

Higher sophistication level of user: Even though BOP consumers are increasingly keen on using mobile-based services, technical or financial considerations can create barriers for them. Downloading software to the phone and configuring these applications may require some technical aptitude. Paying for these applications or the data needed to support them can be expensive for emerging market consumers. And payment often requires the user to have an online presence and credit card. Note that in many areas, mobile money services, like PesaPal in East Africa, are becoming available that enable mobile phone users without credit cards to buy services on line.

Multiple versions may be required: Depending on the target audience, the developer may need to develop multiple versions of the application, each for a different device or operating system. This will be time consuming and require knowledge of multiple development environments and toolkits. And as new phones become popular or existing phones and operating systems are updated, additional development may be required to keep the application current.

Differentiation may be more difficult: While placing the application online at various App Stores may improve visibility, at the same time, it can be challenging to make the application stand out from thousands of others on the site. Differentiating the app will increase the demands on every phase of the development process from accurately assessing the market need to developing a professionally designed and executed piece of software.

Mobile Web Sites

Cell phones are the fastest selling type of computer, and for many in the developing world, the only means they have to access the Internet. The mobile Internet is basically an extension of the Internet where websites have been optimized for display on mobile devices like smartphones or tablet PCs. Mobile websites, which typically use the .mobi top level domain, are becoming more popular as the ability for advertisers to reach consumers through the mobile Web improves.

Key Players

Website Hosting: Hosting companies provide server space and Internet connectivity. App Stores, like GetJar, can also host mobile-enabled websites. Some web hosts specialize in just mobile applications, as some of the requirements can be different than serving websites for desktop computers.

Mobile Advertising Networks: Mobile ad networks like the Nokia Media Network, inMobi or Google's Mobile Adsense provide a platform to connect advertisers and developers. These companies supply all the software developer tools necessary to embed ads in the mobile website, and can tailor the ads shown based on the location of the user.

Payment Gateway Provider: E-commerce service providers, like PesaPal or PayMate, can authorize payments for transactions made online or via mobile phones by accessing the buyer's bank account, mobile money account, or prepaid balance with his/her mobile operator.

Monetization

All the revenue models available to traditional website developers are available to mobile website developers. However, since mobile users may spend less time surfing a particular site than a typical desktop computer user, opportunities for collecting and reselling customer information are not as readily available. Revenue models for mobile websites fall under four broad categories although many are used in combination.

Advertisements / sponsorship publishing: In many emerging markets, mobile advertising is becoming commonplace for mobile-messaging and content applications. The developer receives revenue for placing ads on the mobile website and in some cases, incremental revenue when users click on ads.

Affiliate: Many online merchants use affiliate models that enable the user to purchase 'wherever he happens to be.' The developer hosts a link to the actual seller's website and for every sale that is made via that link the developer receives a small fee or commission.

Content subscription: With a subscription model, users are charged a periodic fee to get access to a service. Often a "freemium" model is followed where basic content is offered for free and premium content is available via subscription only. Note that revenues from advertisers can

underwrite the cost to the developer of offering free access. Subscription models are most viable where there is an easy to use payment system for end user payments.

E-commerce: Users can purchase items from mobile websites and pay for these items through various E-commerce platforms. Revenues are earned on product /service sales, and target customers can include, consumers or other businesses. While building the actual website may be easy, setting up the entire channel to enable e-commerce from the mobile website can be quite time and resource intensive.

Advantages

Easy distribution: Developing a service on a mobile website is generally easier than building downloadable apps and avoids many of the distribution issues developers can encounter with SMS and USSD based services.

Easier updates: The developer is only required to maintain one version of the mobile website software. Contrast this with mobile apps, which may require versions for each phone platform.

Disadvantages

Requires connectivity: The mobile website is unavailable to anyone without Internet access. Even when available, it can be quite expensive.

Limited features: Mobile web applications typically cannot access the capabilities on the mobile device, which limits their ability to provide the same features as downloadable apps.

Compatibility issues: The mobile web environment still lacks a universally accepted set of programming and browser standards for structuring and presenting content, meaning the mobile website may not display properly on all web-enabled phones.