Faced with declining voice revenues and having under-exploited the first SMS-based mobile marketing wave, Mobile Operators view mobile advertising as a key new revenue stream. However, the size of these revenues will depend on how much of the Mobile Advertising value chain the Operators manage to control and the extent to which they leverage their customer base through effective use of their CRM data.

Implementing an end-to-end Mobile Advertising platform with multi-channel delivery capabilities on their own network will enable Mobile Operators to build a strong position in the Mobile Advertising ecosystem and to monetise their strategic assets. To overcome the problems of current mobile advertising solutions, this platform must focus on the user experience and enable flexible ad-funded business models. Most importantly, it must allow Operators to demonstrate the intrinsic value of their network and successfully wholesale this value to the advertising ecosystem.

This paper outlines the core capabilities required of a multi-channel mobile advertising platform and describes how they improve the user experience, support flexible business models and derive value from Operator-owned data.
Mobile Advertising holds the potential to eliminate the cost barriers for the widespread adoption of wireless data services. Just like Internet advertising helped drive Internet adoption by consumers in the 90’s, so too can mobile advertising drive mainstream mobile internet adoption through various ad-funded business models. Operators can offer a wide portfolio of ad-funded services to subscribers that subsidise access costs and deliver real value to the subscriber. Key to achieving this goal is support for flexible business models and a personalised user experience.

The success of the Internet advertising model has proven that advertising business models can achieve huge revenue growth. Yet despite the hype surrounding mobile advertising, there is much Operator scepticism and mobile advertising is largely unproven. This is mainly due to the fact that current mobile advertising solutions do not adequately address the business model and user experience requirements.

To date, mobile advertising has mostly focussed on intrusive direct SMS marketing that has failed to capture the imagination of advertisers, and on placing on portal banner ads, a capability more suited to the bigger screen sizes of the Internet domain. A key difference between the mobile and Internet domains is that Internet players typically do not own their customer and are consequently less threatened by advertising-induced churn. However, Mobile Operators have some very unique assets including control over multiple communications channels and access to valuable real-time context, demographic and behavioural data. Through advanced subscriber profiling, Operators can offer more personalised advertising to their Advertiser partners. As ads become more individualised, the distinction diminishes between what is purely advertising and what is considered by the subscriber to be a valuable service. Through targeted advertising and by delivering campaigns over subscriber selected communications channels, Operators can successfully overcome the user experience problems of current mobile advertising solutions.

Content and Media Brands have successfully extended their advertising strategies from TV to the Internet. Subscribers are now used to paying for the data pipe (cable, satellite, broadband) provided it comes bundled with a range of valuable ad funded services. Content and Media Brands are now turning their attention to the mobile device. The mobile phone presents some unique characteristics, most importantly the fact that it is a personal device, nearly always specific to one subscriber, but also that it provides access to real time context (e.g. location, presence, device capabilities) and that it combines multiple communication capabilities (voice, SMS, email, browsing) which can be effectively used to deliver a more interactive advertising campaign. However, most important to successfully extend advertising strategies to the mobile device is that mobile advertising platforms must support ad-funded services in a manner familiar to both the consumer and the Content and Media Brands.
Successful advertising is often described as requiring a combination of

- **Analytics** - an analysis of the target market;
- **Reach** - the number of people exposed to a specific media vehicle or schedule at least once. Usually measured over a specific period of time. – i.e. the total number of people who will see a given ad;
- **Purity** - in marketing terms, the quality of information on the target market.

From a mobile advertising perspective, the Operator has a unique advantage in all three areas, and it is essential that a mobile advertising platform exploits these advantages.

Examining each of these in turn:

**Operator Analytics**
The Operator has exclusive access to detailed information on subscriber behaviour and characteristics, including spending patterns, location, availability, interests (through browsing habits), social status (implied from device) as well as demographic data (at least for post-paid subscribers). This information is available across a range of disparate systems, but should be consolidated by an effective mobile advertising platform.

**Mobile Reach**
Thanks to one-to-one relationships with millions of subscribers, the Operator has unrivalled reach. Direct mobile marketing campaigns have the potential to reach millions of customers at once. In-message advertising can similarly be delivered to every subscriber. The increase in mobile browsing and the recent growth in On Device Portals provide increasing reach for rich media advertising campaigns.

**Feedback Purity**
When managed end-to-end by an integrated mobile advertising platform, the conversion of an advertising campaign (e.g. successful click-through, call-through, etc.) can immediately and categorically tracked for increased purity of feedback results. Furthermore the context in which the campaign was successful (subscriber location, time of day, etc) can be recorded to provide additional clues as to why a particular campaign was so successful.

As outlined above, it is clear the Mobile Operator has the essential assets to successfully deliver mobile advertising. However, it is only by implementing an effective mobile advertising platform that monetises these assets that the Operator can effectively grow advertising revenues. The following section describes the required enablers paying particular attention to the user experience and advertising business models.
To effectively grow mobile advertising revenues Operators must implement an enablement platform that delivers a personalised user experience and supports flexible business models whilst maximising the value of Operator-owned assets. Such a platform must include a range of enablers covering everything from advertiser signup to campaign delivery to charging. Some of the essential enablers are described below.

**Easy-to-use Advertiser Interface**

Media buyers and Advertisers require an easy-to-use interface to quickly plan, deliver and assess mobile advertising campaigns. The interface must address the workflow issues associated with buying advertising space, defining ad inventory and analysing the effectiveness of campaigns. To lower the barrier to entry, the Advertiser Interface should provide web interfaces for human interaction and support open standard interfaces for the rapid integration of third party campaign management software such as existing Internet ad servers or bespoke campaign management logic.

Some essential capabilities of the advertiser interface include:

**Advertiser Management**

The platform should automate the rapid signup of advertisers through self-service interfaces. Advertisers should be able to request access to specific advertising delivery channels, subscriber profile and analytics. Requests should initiate an Operator-defined business process workflow that could include obtaining technical and commercial authorisation before provisioning advertisers onto the underlying enablers. The primary goal of the advertiser management capability should be to open up the platform capabilities to as wide a range of advertisers as possible. Just like Google™ AdSense enables anyone to quickly create an advertiser account, so too should the mobile advertising platform enable the wholesale of mobile advertising. The costs and associated merits of different enablers should be clearly displayed in a mobile rate card. The mobile rate card is analogous to how print media is sold by size (column inches), context (e.g. front page, back page), and demographic profiles (readers). By standardising ad units, profiling subscribers and measuring success the platform provides a pricing transparency within mobile advertising where advertisers only pay for measurable results.

**Campaign Management & Reporting**

It is essential that the platform include an easy-to-use campaign manager. This enabler should draw on the best practice of Internet based campaign managers and ad server interfaces. Through this interface, Advertisers should be able to plan, define and monitor their advertising campaigns and view real-time feedback reports. It should be possible to define campaigns that deliver advertising based on subscriber profiles, personalising ads for optimal user experience, delivering ads over the subscribers’ preferred delivery channel and scheduling delivery to maximise conversions. The campaign manager should enable campaigns to be scheduled for specific time slots – e.g. every weekday between 6pm and 9pm, as well as allowing campaigns to be triggered by external events. Most importantly, the campaign manager should provide summarised and detailed analytics that provide evidence of campaign successes to substantiate advertising costs and help refine further campaigns.
Profile & Capability Exposure
In addition to the campaign management user interface, the platform should securely expose capabilities through open standard programmable APIs. This should include access to direct marketing capabilities such as SMS, MMS and WAP Push, simple web service interfaces for on portal and on device ad placement, and the privacy controlled exposure of Operator-owned subscriber data. By applying data masking techniques such as pseudonymity, topcoding, adding noise, aggregation and suppressing and swapping attributes, the privacy of subscriber data can be maintained while still extracting statistical value from subscriber data and adhering to privacy regulations.

Core Platform Engine
The core platform engine should provide the essential business logic, platform intelligence and central management that drives the platform and enables flexible business models. The essential requirement is to integrate this engine with internal and external enablers.

Essential enablers of the platform engine include:

Ad Server
The Ad Server component is responsible for serving ads to the various delivery channels based on the active campaigns, campaign priority, subscriber profile and context. Ideally, the Ad Server should enable advertising channels to be sold to the highest bidder to maximise revenue on sought-after advertising real estate. Unlike Internet ad serving, where the capabilities of end devices (PCs) are relatively uniform, the mobile Ad Server must employ runtime device detection to deliver appropriate ads to the plethora of mobile devices. While runtime image repurposing could be employed to tailor ad images to specific mobile device capabilities, this can often result in loss of image quality. A preferred approach is for advertising creatives to define a few standard ad units and allow the Ad Server to select the most appropriate unit for a specific context from the available inventory. Just like the Interactive Advertising Bureau (IAB) standardised Ad Unit Guidelines (banners, buttons and skyscrapers) for the Internet, so too has the Mobile Marketing Association (MMA) defined mobile web advertising guidelines that recommend mobile web banner advertising units. The platform should adopt these guidelines as the de facto standard.

Profile Server
Probably most important of all enablers is the central Profile Server that provides unified access to consolidated subscriber profile and feedback results. The Profile Server should collate subscriber and service data from network elements, platform products, back end CRM and Business Intelligence databases, location servers, and device databases and present it through easily accessible interfaces to the entire platform and external Business Intelligence solutions. The profile server should enable real-time reports in the campaign manager, and allow detailed post-campaign analytics to be performed. Unlike third party service provider advertising solutions, an advertising enablement platform implemented by the Operator has unprecedented access to subscriber data and context. However, the Operator must use this information wisely and ensure that access to subscriber data is carefully controlled, in line with agreed subscriber preferences and in accordance with agreed privacy and data protection regulations.
Charging & Rating Engine

Essential to supporting flexible business models is a centralised real-time charging and rating engine. This should support ad-funded content and services along with loyalty and reward schemes. Within the same advertising campaign it might be necessary to include both free and premium rate charging. For example a direct marketing campaign might not charge for SMS requests for additional information or browser sessions to advertised mobile portals, but charge a premium for entry into a promotional competition. In an ad-funded SMS scenario a subscriber who has opted in to receive advertising messages might be rewarded with free text bundles or free voice minutes for each click-through. The key is that the platform does not impose a set of business models, but should support the rapid introduction of new models across the platform without the need for lengthy and complex provisioning.

Delivery Channels

One of the unique features of an integrated end-to-end mobile advertising platform is that it enables advertisers to deliver campaigns across a range of delivery channels. Some campaigns may require direct marketing push capabilities like SMS, MMS delivery or WAP Push, whereas others may be more suited to contextual on portal advertising, unobtrusive offline on device advertising (using On Device Portals) or even in-message advertising. Through explicit subscriber preferences, and implicit observed results, the platform can decide the most relevant delivery channel for each subscriber targeted by a campaign. By integrating the campaign manager and ad server with each available delivery channel the set of advertising inventory can be delivered in a manner most acceptable to the subscriber and the delivery context.

Some of the possible delivery channels are described below:

Direct Message Marketing

Direct mobile marketing is the most mature mobile delivery channel, yet it has failed to capture the imagination of most advertisers. This is primarily because it has lacked the advanced targeting enabled through detailed subscriber profiling and lacks the supporting business models that give subscribers the incentive to opt in to such campaigns. However, as part of an integrated multi-channel campaign, where subscribers are rewarded for receiving ads and only delivered relevant personalised ads then this channel can be very effective. Consequently, a mobile advertising platform must support mobile messaging. Direct messaging should be possible from the campaign manager as well as providing a secure message gateway that exposes SMS, MMS and WAP Push capabilities. These capabilities can be used to deliver SMS response campaigns, mobile vouchers or drive subscribers to an advertiser portal.

On Portal Advertising

The capability to deliver contextualised banner ads and interstitials on the Operator’s mobile portal is similar to that successfully used to deliver ads on Internet websites. However, there are some fundamental differences. The ubiquitous mobile device is more uniquely personal than any PC and so can be used to deliver highly targeted advertising campaigns. The ad server can compare subscriber portal requests to specific profiles to identify the most relevant ads. As ad targeting improves, the once obtrusive on portal ad becomes more relevant to the subscribers who consider it a valuable contextual service.
In-Message Advertising
A relatively new capability enables advertisers to insert ads into Person-to-Person (P2P) messaging. This is particularly applicable to ad-funded SMS business models. Probes in the signalling network identify messages destined for subscribers who have opted in to receive advertising and insert appropriate text ads. As SMS is the most ubiquitous mobile communication channel, this has the widest possible reach and is particularly suited to the youth market where cost-sensitive teenagers are willing to accept ads in return for free text bundles.

ODP Advertising
On Device Portals (ODP) are rich clients that reside on the mobile handset to provide a rich offline user experience and drive service discovery. Originally deployed to encourage the download of mobile content including ringtones and games, they now represent an exciting new advertising delivery channel. Banner ads, rich media video adverts, and multi-layer adverts combining images, video and games can be displayed at various locations on the ODP interface. Native control over the end device enables numerous interactive call to actions including ‘Browse to URL’, ‘Initiate Call’ and ‘Send Text Message’ to be associated with each ad. By silently updating the displayed ODP ads without any user interaction and at no cost to the subscriber, ODP advertising overcomes many of the user experience problems associated with on portal advertising where ads compete for space with other content.

Other Mobile Advertising Channels
In addition to the main mobile advertising delivery channels listed above, there are several other possible channels. These include interstitial advertising on Mobile TV, in-game advertising or search based advertising. Consequently, a multi-channel mobile advertising platform should provide a set of simple open interfaces for easy integration with emerging delivery channels.

Each of the enablers described above satisfies a specific functional requirement of an end-to-end mobile advertising platform. Attempting to implement each of these in a custom solution would constitute a lengthy, costly and therefore risky development project. Constructing such an enablement platform based on market proven products would significantly reduce the risk of deploying a mobile advertising platform but would still involve some integration costs. If however, such a solution was available as a set of pre-integrated product-based enablers, the overall time and cost of deployment would be dramatically reduced.
Successful advertising depends on a mix of analytics, reach and purity. Mobile Operators have a unique advantage in all three areas but have yet to monetise these assets. To date, mobile advertising and marketing has largely been delivered by managed service providers using messaging gateways to deliver direct marketing campaigns and internet ad serving technologies that serve banner ads to mobile portals. However, these solutions do not adequately support a range of business models nor do they deliver an adequate user experience.

By implementing an end-to-end mobile advertising platform that delivers personalised and targeted advertising across a range of delivery channels including direct messaging, on portal advertising, rich media ODP advertising and in-message advertising, Operators can meet and exceed user experience expectations. By implementing an end-to-end platform Operators can enable the rapid introduction of innovative advertising business models.

By consolidating Operator-owned subscriber data and feedback analytics, Mobile Operators can demonstrate the value of their network and justify mobile advertising costs to the as yet unconvinced advertisers. Rather than attempting to achieve all this through a bespoke solution, Operators can pick and mix market proven components to match their subscriber demographic and network capabilities in order to deliver a comprehensive mobile advertising platform that cements the Operator’s position in the mobile advertising ecosystem.

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