White Paper:

Segmentation - Serving new customers

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Introduction

Mobile markets are approaching subscriber saturation. According to the World Cellular Information Service, 15 countries have cellular penetration exceeding 100% as of January 2005. Mobile phone penetration has increased from 88% to 94% in Ireland[1]; over 70% of people in Japan now own mobile phones; 25% of Hong Kong users are under the age of 13. As subscribers take second and even third connections for data or personal use, mobile penetration will surpass 100 percent in an increasing number of markets.

How then do carriers continue to grow revenues in increasingly saturated markets? One successful business strategy is to intelligently segment the market as we shall see below. Carriers need to focus on untapped and underserved subscribers in addition to increasing service usage. And while the consolidation and mergers of wireless carriers' addresses bottom line needs for operating efficiencies and economies of scale, this consolidation does not grow the top line – that is the role of segmentation.

In highly saturated and competitive mobile markets, carriers are faced with the challenge of how to grow new segments of subscribers while defending the existing market share. Until now the focus on general business users and the mainstream consumer users has resulted in considerable success; however these markets are finite in size. Carriers have achieved saturation in part by steadily lowering the monthly price on ever larger buckets of minutes that often include roaming and long-distance minutes, while also increasingly offering unlimited weekend minutes. Consequently, many subscribers rarely (if ever) pay per-minute charges for using their phones. In a saturated market, this strategy is self-defeating. On one hand, existing customers will eventually switch plans to meet their calling needs at lower prices, and churn rates will remain relatively high. On the other hand, without new service and content packages, increasing calling minutes may not be sufficient to attract new customer segments. Wireless carriers should divide and conquer, and begin to segment and differentiate service offerings within the business and consumer categories.

At the same time markets are saturating and segmenting, mobile carriers are facing threats from competing service access points such as WLAN, WiMax, Cable MSOs, and VoIP providers. In fact there are there are more than 800 VoIP providers around the world with Vonage adding more than 25,000 lines per month generating over 5 million calls per week. Nonetheless, wireless carriers are in an excellent strategic position to capitalize on subscriber mobility and presence across these multiple access points, including the ability to bundle and bill for these alternate service access points. The transition towards IMS provides carriers a competitive architecture to realize fixed mobile convergence.

Wireless carriers can begin to shift their focus on growing untapped and underserved segments, particularly fixed mobile convergence for business services, communities of interest including ethnic groups, youth and prepaid markets, MVNOs, and loyalty or impulse buyers. At the same time, carriers must be careful that they do not accomplish this at the expense of the margins they earn from their current customer base. Any segmentation strategy must also take into account competing substitutive alternatives from VoIP and WLAN. The outcome of market segmentation is to maximize uptake and value from each segment in ways that cannot be done with current one-size-fits-all mainstream service plans. One of the results is that, if necessary, prices can be lowered to attract new consumers without having to lower price to all existing customers, including high-value business subscribers. This can only be accomplished by changing the approach towards segmentation – carriers need to create new brands and host MVNOs to sell desirable bundles of services and devices at appropriate price points prices to new groups of subscribers.

What does segmentation look like?

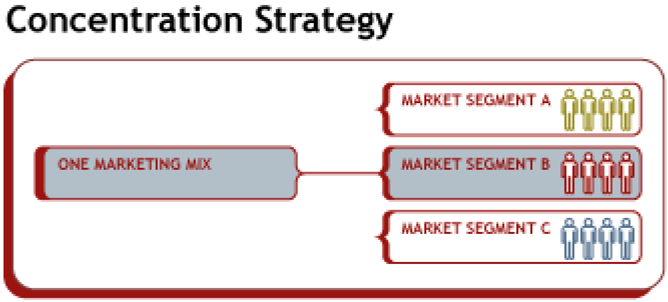
Prior to the saturation of mobile markets, the bulk of attention was concentrated on the footprint and build-out of wireless networks. This 'coverage and capacity' approach to subscriber service was largely undifferentiated and primarily centered on supplying voice minutes. Price plans for mainstream subscribers were based on the premise that all consumers and businesses have similar needs for the same kind of product, namely wireless mobility. This approach, known as a single marketing mix typically consisted of:

- Single pricing strategy
- Single promotional program aimed at everybody
- Fixed handset capabilities with little/no variation
- Single distribution system aimed at entire market

A single marketing mix is the right approach with a large scale production of a service (in this case cellular) begins. As markets saturate due to subscriber uptake and increasing competition there are two approaches that can be used to segment a market:

i) Concentrated Segmentation

The concentration strategy for segmentation uses a single marketing mix targeted at a unique market segment. The objective is brand specialization, attracting the largest portion of one market segment without duplicating overheads and overall costs. Examples of this approach are personified by MVNOs such as Tesco targeting shoppers in the UK or Virgin USA targeting the prepaid youth market.



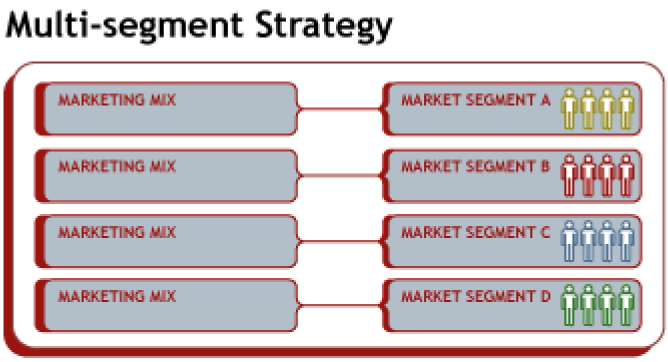
PROS of the concentrated segmentation strategy include:

- It allows an carrier to sub-segment the market or host MVNOs
- Specialized expertise is focused on satisfying one segment's unique needs
- Limited resources can be concentrated to provide competitive differentiation

CONS of concentrated segmentation include:

- Results dependent on single segment response (all eggs in one basket)
- Small shifts in the segment's tastes can greatly affect business results
- May have trouble expanding sub-brand into new markets (especially up-market)

ii) Diverse Segmentation
With a diverse segmentation strategy, multiple segments are addressed with different marketing mixes and unique marketing plans for individual segments. This approach combines the best attributes of undifferentiated marketing (economies of scale) and concentrated marketing (economies of scope).



PROS of the diverse segmentation strategy include:

- Less risk than relying on single segment or competing for mainstream segment solely on price
- Subscribers in each segment are more willing to pay a premium for tailor-made service plans
- Price differentiation among different brands can be maintained
- Can achieve total market coverage as with mass marketing
- Carriers can sell excess network capabilities or resell to MVNOs

CONS of diverse segmentation include:

- Requires the ability to concurrently support multiple rating and billing schemes
- Increased marketing costs due to selling through different channels, promoting more brands, and supporting different handsets
- Challenging to maintain product distinctiveness in each consumer or business segment and guard its overall uniqueness and value proposition

Variables that can be used to segment markets

The key to successful segmentation is of course to determine the specific variables that distinguish unique segments from the rest of the market. Segmentation variables must be directly related to consumer and business needs for, uses of, and behaviors towards the service offering. Segmentation variables must be measurable as there is no deterministic way to segment the overall market. Selecting inappropriate variables limits the chances of success, and marketers must also be aware of shifts in subscribers' requirements and lifestyles and adjust service mixes and bundles accordingly.

Examples of variables for segmenting markets include (but are not limited to):

- Mobility patterns – home, office, neighborhood, metro, county, state, continental, international single country, international multiple countries
- Demographic - age, sex, commuting patterns, ethnicity, income, education, occupation
- Affinity - family life cycle, family size, religion, sports, hobbies, and social class
- Geographic -climate, terrain (skiing, surfing), local points of interest, population density, sub cultural values, distinctive neighborhoods
- Psychographic - personality characteristics, values, motives, and lifestyles
- Behavioristic Variables – power users, average users, potential users, non users, infrequent users, sub-prime debt risk, probability of churn

Single Variable vs. Multi-Variable Segmentation

Single variable marketing mixes uses only one variable to define a given segment, while multi-variable mixes use more than one characteristic to segment subscribers within the market. As a rule, the multiple variable approach provides more information about a segment and is generally able to satisfy subscribers' needs more precisely. Striking a successful balance means avoiding using too many variables which can create segments that are too narrow, thereby reducing the sales potential in a segment relative to that segments brand costs.

Business benefits of segmentation

Does segmentation create confusion or choice? Some feel it is too difficult to effectively market or sell more than two or three service offerings to subscribers without making the selection process too complicated or creating price option fatigue. But as we shall see below, segmentation using the right type of infrastructure can create options that increase subscribers buying behaviors, market share, and overall market size.

Koreans have been extremely proactive in technology deployment; they have also been extremely proactive in the business models they use. Both SK Telecom and KTF have made aggressive moves in segmenting their customer base to extract maximum return. Each segment is carefully defined by branding, services and pricing. Rachel Healy at Spectrum Strategy Consultants says "the Korean model is probably the most advanced market segmentation from a mobile service provider I have been able to find anywhere in the world".

SK Telecom spokespeople say the company supports the main Corporate brand (SK Telecom), as well as sub-brands such as family brands (Speed 011010, Nate, Moneta) and segment brands (TTL, Ting, UTO, CARA). KTF supports specific brands too, such as Bigi, aimed at 13-18-year-old consumers with flat-rate pricing and free SMS; Na, aimed at 18-25 year-olds; Main aimed at 25-35-

year-olds; and Drama, aimed at women. KTF's other brands include specific services for downloading software for the BREW platform, and business. SK Telecoms' approach has been similar: speed 011010 maximizes the long-standing loyalty of subscribers; Ting targets the teenage market; TTL is designed to suit the lifestyles of young people; UTO reflects the lifestyles of professionals aged 25 to 35; CARA offers membership services tailored to women; and Leaders Club provides a premium membership service for all ages.

Both SK Telecom and KTF have been able to support over a dozen sub-brands in their market without causing subscriber confusion. In the following sections we will examine eight possibilities for differentiating profitable segments.

Mobile Virtual Network Operators (MVNOs)
The US prepaid market is set for rapid growth during the next five years as the industry continues to refine offerings based on so-called hybrid plans and increasingly popular mobile virtual network operators. MVNOs are forecast to account for nearly four of every five prepaid wireless subscribers by the end of 2009.

At CTIA New Orleans 2005, Sean "P. Diddy" Combs rapper and CEO of Bad Boy Entertainment Group boldly declared that he is an MVNO: "I don't have the spectrum, I don't own the network infrastructure, I don't make customer-service calls, but I do have subscribers. I have tens of millions of them....my wireless service would be targeted to the youth market and would specialize in a cool lifestyle. In time to come you'll see myself and my company involved in an entity that gives a community access to certain content and has certain marketing power to market to this community."

Youth segment

In Britain, wireless penetration among teenagers is so high that studies are being conducted to determine whether this is the cause of falling tobacco use. And the US is the home of many youth brands - Levi's, McDonalds, MTV, Disney Land, and Coca-Cola, but one would never know it from walking by the local wireless kiosk.

Multimedia services directly pave the way for phones targeted at the youth market with the newest mobiles containing digital music players and cameras. Messaging is a proven youth service on fixed computers and now many phones have Instant Messaging clients in addition to SMS. And the biggest money makers in the youth segment are the downloading ring tones and screen icons. These phones are more than the sum of their parts – for youth they are social and fashion statements and thus should be segmented and sold as such.

In terms of segmenting, wireless carriers have used the Mobile Virtual Network Carrier (MVNO) model to address youth markets, for example Virgin USA hosted on the Sprint PCS network. But an MVNO is not strictly necessary - a youth brand could be created under the same carrier umbrella in the same way that General Motors uses the Chevrolet brand to sell to a different segment than Cadillac buyers. For instance, Boost Mobile a division of Nextel, focuses solely on developing and distributing wireless communications products for the youth market

Prepaid segment

Another segmentation strategy to attract new subscribers is the addition of prepaid data services and messaging services to prepaid voice offerings. While prepaid is beginning to shed its down-market image in the US, the current selection of devices and service plans are still unlikely to drive significant new customer acquisitions in this segment.

Analysts such as Atlantic-ACM claim that prepaid customers will grow at a compound annual growth rate in excess of 20 percent and expects much of that growth to come from hybrid plans that often rely on automatic replenishment using credit cards or checking accounts for monthly service.

In addressing new markets, prepaid plans have a number of advantages for both buyer and seller. For new subscribers, the sign-up costs for a prepaid plan are typically less than a post-paid plan. A prepaid plan does not require a credit check, and there are no monthly obligations. For carriers, prepaid plans have the advantage of no credit risks, lower acquisition costs and no billing expenses. For carriers that have packaged messaging, multimedia, and data services, pre-paid users can be shown to actually generate higher ARPUs than post-paid subscribers.

In Europe where prepaid services are more mature, the trend has been towards hybrid billing – where a subscriber's personal calls and messages are debit from a prepaid while business calls are billed to a corporate account at corporate rates. In CALA and APAC the trend has been towards converged billing – the capability to bill voice, data, and messaging services to either individual or group prepaid accounts. In the US, Amp'd will pitch prepaid download services on the Verizon network.

Value-added bundles retain business customers

The MVNO, youth, and prepaid segments described above are unlikely to cause business subscribers to switch to these new services in order to serenade their colleagues with the latest Britney Spears ringtone. To distinguish value propositions for business segments, wireless carriers must focus on convenience, cost savings, and value-added services for enterprise subscribers.

Business subscribers themselves can be further segmented into mobile power users (domestic) and international business travelers. Both of these segments would likely benefit from a "cafeteria style" bundle of voice, roaming, data , and WLAN minutes that could be flexibly charged based on their particular needs which vary month to month. Domestic power workers could use specific "on-net" rating for calls to business mobiles, long distance and PBXs, while the international traveler may have a specific need for corporate prepaid minutes in some foreign networks.

Another variable to create business segmentation are data services such as secure virtual enterprise networks (VPNs) over GPRS and 1XRTT. Corporate pricing for small and medium businesses (SMB), named accounts, or departmental usage adds data revenue from business customers and at the same time helps them control "off-net" or personal usage of data services.

Segmenting business subscribers from consumers, particularly the youth market, is fairly straightforward. Mobile services and devices that are targeted at business markets are unlikely to be must-haves for the youth market. Likewise, as current business subscribers, we should recognize that we probably would not use most youth-oriented services, regardless of price. With new business segments in place, wireless carriers can safely expand their corporate accounts while avoiding the erosion in value caused by current consumer pricing patterns.

Dispatch Communications (PTT)

A compelling example of business segmentation is Nextel whose focus is on business verticals and SMB market. Although the term "dispatch communications" is associated with the push-to-talk radios used by blue-collar work groups, it's expanded beyond that segment to include, for example, a way for members of a company's IT department to communicate in a building or campus. Nextel has changed the definition of dispatch communications and have extended the segment to include any predefined work group. Nextel is an example of how a provider's technology choice helps determine which markets to pursue and what usage patterns to expect.

With the advent of Push-to-Talk (PTT, also known as PTT-Over-Cellular PoC) for GSM and CDMA, other non-iDEN carriers can either compete or complement with Nextel's segmentation. But success will not come from the PTT technology itself, but rather the ability to carefully parse the market with appropriate price plans and services targeted at specific sub-segments. While the average consumer may not find PTT particularly appealing for day to day use, specific groups such as school groups, teams, sports fans, concert goers, tour groups, movie or event producers could benefit from a non-business oriented group communication service.

Ethnic segments

Calling patterns amongst close family members suggests segmenting service plans to address this behavior – for instance preferential rates for calls between relatives or bucket of group minutes that can be shared across those subscribers. For instance, Sprint PCS' "Add-A-Phone" plan, which allows a customer to add more phones and share rate buckets with other group members. Targeting groups of users rather than individual members is a good strategy because that service now becomes the preferred means of communications for the group's members. A member considering churning to another provider might be dissuaded by rates higher than those available in that group's bucket.

The fact that Hispanics are on the way to becoming the dominant ethnic group in the US suggests creating a segment of mobile services and content dedicated to them. Fox Sports has teamed up with Proteus to release Fox Sports Copa Movil, which will provide a range of applications and services to fans of Copa Libertadores, a major soccer tournament in the Americas. The service will include personalized score alerts, exclusive ringtones, mobile wallpapers, on-air polling, and mobile video services, and considering the fanaticism of most Americans over "futbol" it should do well. Also in the US, Liberty Wireless plans to launch a Spanish-language offshoot this year.

Impulse Segment

For impulse buyers the segmentation question becomes how to price and position services or content to take advantage of spontaneously occurring buying behaviors. One aspect of promoting impulse buying is to create pricing options that are more transactional in nature with no residual commitment. The second aspect of impulse buying is to regroup content into themes that are relevant to a user's interests – for instance a ringtone, game, and screensaver bundle grouped around their favorite music artist. A third aspect is to repackage content based around transitory points in time, such a movie release or sports event, or televoting campaign such as Idol.

Ringtones are one example where purchase decisions are spontaneously made based on desire and not price. As a result a buyer who is likely to decline a monthly $10 recurring charge for a ringtone bundle, will in fact, purchase $15-20 of ringtones individually without any second thoughts. For example, in the US Amp'd will pitch to the youth segment with a heavy range of games and downloads running on Verizon's network.

There are several ways to create payment options that cater to the impulse segment and these can also be tailored towards the "novice" segment to encourage them to try new capabilities on their phones such as MMS or push alerts. Ways to encourage extemporaneous service usage include:

- "Try one free", "Pay as you go", or "A la carte" purchases
- Affinity or lifestyle bundles (one time or monthly recurring)
- Promotions (online or point of sale) or Sponsored content (underwriters, adverts)
- Event based content (music, movies, sports, concerts)

Churn Segment (Loyalty)

It is five times more expensive to attract a new customer than it is to hold on to your existing customers. Imagine if you could segment in advance those customers poised to leave your network and then preempt their departure through the use of a proactive loyalty campaign. Loyalty enables carriers to quickly launch customized promotions targeted at the churn segment and promotes customer retention. Loyalty can even generate incremental revenue from usage-based incentive programs. The costs of such programs can be kept nominal by taking advantage of under utilized infrastructure resources. Furthermore, loyalty campaigns can be very cost-effective by sending subscriber notifications they are within a percentage of a loyalty campaign threshold or churn threshold via email, MMS, SMS, or IVR.

By studying churn segment patterns and variables, a loyalty campaign can be created to anticipate and modify subscriber behaviors to preempt churn, for example:

- Awarding of "loyalty" or "bonus" points redeemable for some future service
- Proactively initiate a rate plan upgrade or "please stay" campaign
- Link rewards with third party marketing programs or sponsored content
- Use alerts to notify subscribers of upcoming and current promotions
- Direct subscribers attention to new handsets or underused service offerings

Segmentation and IMS

Internet Multimedia Subsystem (IMS) an extension to existing network architectures designed to meet the following business objectives:

- Fixed Mobile Convergence (the federation of wireless, fixed, broadband, and WLAN services)
- Allows mobile carriers to compete with Internet based service providers (Yahoo, MSN, Skype, Vonage etc...)
- Rapid service creation and integration

Technical objectives for IMS include:

- Carrier control of services delivered to end subscriber
- Establishing, control, rating of IP Multimedia sessions
- Access independent interworking between the Internet, packet switched (PS) network and circuit switched (CS) networks
- Negotiating Quality of Service (QoS)
- Roaming

For subscribers, IMS-based services enable person-to-person and person-to-content communications in a variety of modes – including voice, text, pictures and video, or any combination of these – in a highly personalized and relevant fashion.
For carriers, the transition towards IMS enables greatly increased capabilities to create bundles and

packages of services that are subscriber-centered instead of network-centered. IMS supports true subscriber mobility providing integrated end user services irrespective of access technology and end user device. For instance a subscriber may have a portable 'single number' voice service that uses VoIP over MSO in their home environment, VoIP over WLAN at the airport when traveling, that integrates their PBX dial plan with their mobile in the office environment, and provides on demand video/whiteboard sessions on their PC. Furthermore, calls and data across these access points may be either to their personal or departmental account, dependant on the usage context.

Using IMS to integrate services, devices, and billing creates new opportunities for carriers to differentiate their services mixes from competing service providers, whether they are competitive carriers or alternative access provides (VoIP, WiMAX, AOL, Skype, Cable MSO, etc).

Innovative new service bundles that can be used to serve new market segments in both a pre-IMS and IMS context include:

- Fixed Mobile Convergence (3G, Local, Long Distance, Data)
- Personalized service bundles (Multimedia Call Services, Messaging services, Data, VPN, Content Delivery and handset-based applications)
- Context-aware services that shift services to optimal device based on subscribers presence, location, and profile
- Seamless billing across all network domains (i.e. Circuit Switched Domain, Internet, WLAN)
- Personally selectable and configurable rate plans (individual, family, or group-based)
- Corporate or Departmental level rate plans with controllable acceptable usage policies
- Access independent service transparency (3G, WLAN, WiMAX, UMA, Bluetooth, OFDM)

i) Challenges in implementing Segmentation

With today's 3G networks and the evolution towards IMS, the rating and charging of services is generally based on either the service-node type (voice on MSC, message on SMSC or MMSC, 3G downloads, WLAN minutes, etc) or the network domain type (circuit switched or packet switched). Multiple OSS/BSS systems that are batch-based in nature make it virtually impossible for carriers to correlate and combine subscriber rating rules for the many services that span their network properties. In limited cases subscriber event correlation may prove possible but entails detailed coordination of rule provisioning and CDR/IPDR modifications across access multiple mediation, rating, prepaid/postpaid, reconciliation, and settlement systems. And even in this limited case, marketing departments will likely have poor visibility and reporting of subscribers' responses and behaviors. In addition to being cumbersome to coordinate across multiple departments and organizations, batch-based mediation has historically proven to be a time-consuming and an expensive IT proposition.

Without a unified or converged method to rate for all services across every access point, network carriers cannot rapidly create and easily tailor flexible service bundles that target subscribers' unique needs for untapped or underserved market segments.

Why real-time rating?

As networks migrate towards event based rating and value based charging, it becomes increasing difficult to correlate these events by downstream mediation systems, particularly as the value of transactions in the network become increasingly dependent of the subscriber's context at any given moment. Real-time rating preempts these limitations and also offers additional advantages such as:

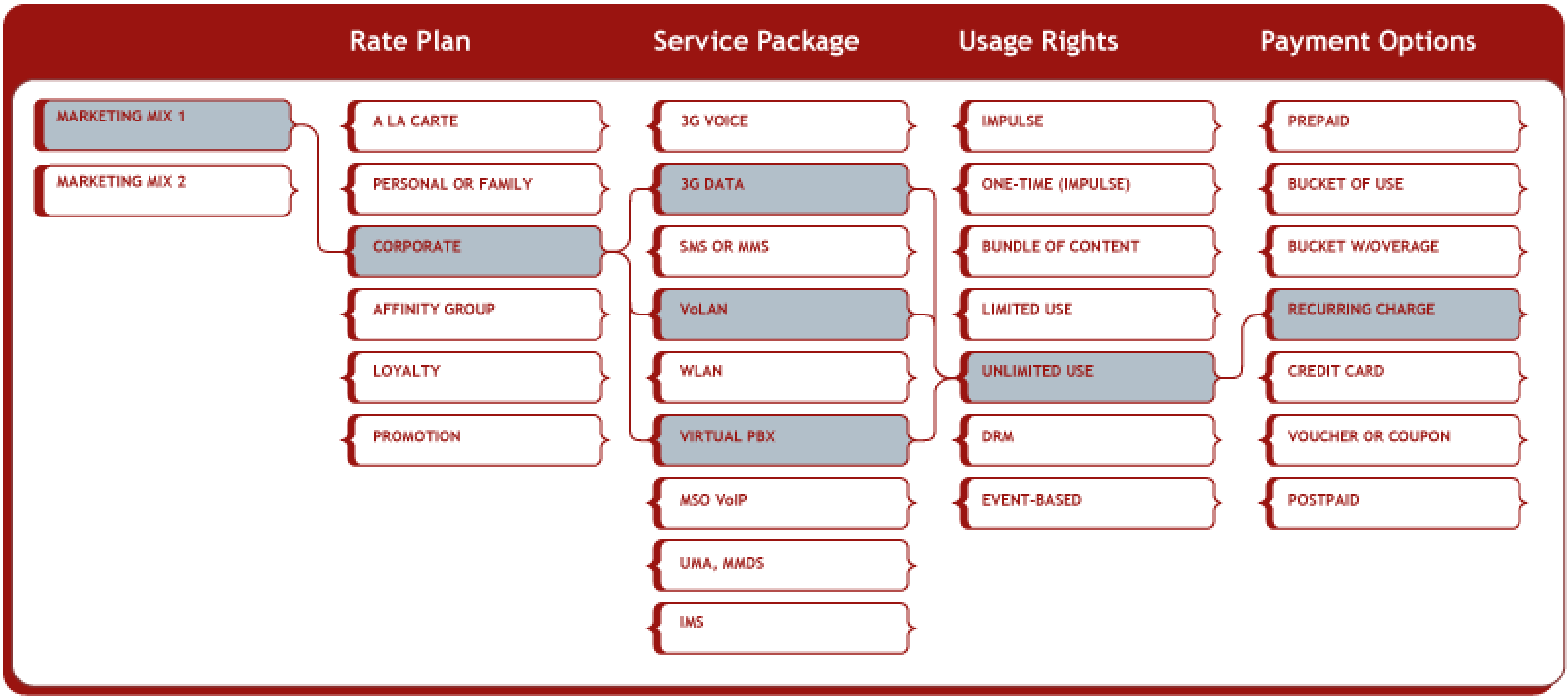
- Advice of Charge, Advice of Privacy notifications
- Announcement of promotional items or loyalty points (or thresholds)
- Impulse buyer pricing

- MVNE support for MVNOs
- Ability to offer messaging and data services to prepaid or threshold accounts
- Rating of on-net and off-net calls and data VPN sessions
- Zero-rating of bearer of carriers web properties and portals as well as designated content downloads
- Provisionless rate plans (take effect immediately)
- Online transition history (reduces CSR calls)
- Lower fraud and credit risks
- Daily reconciliation and settlement

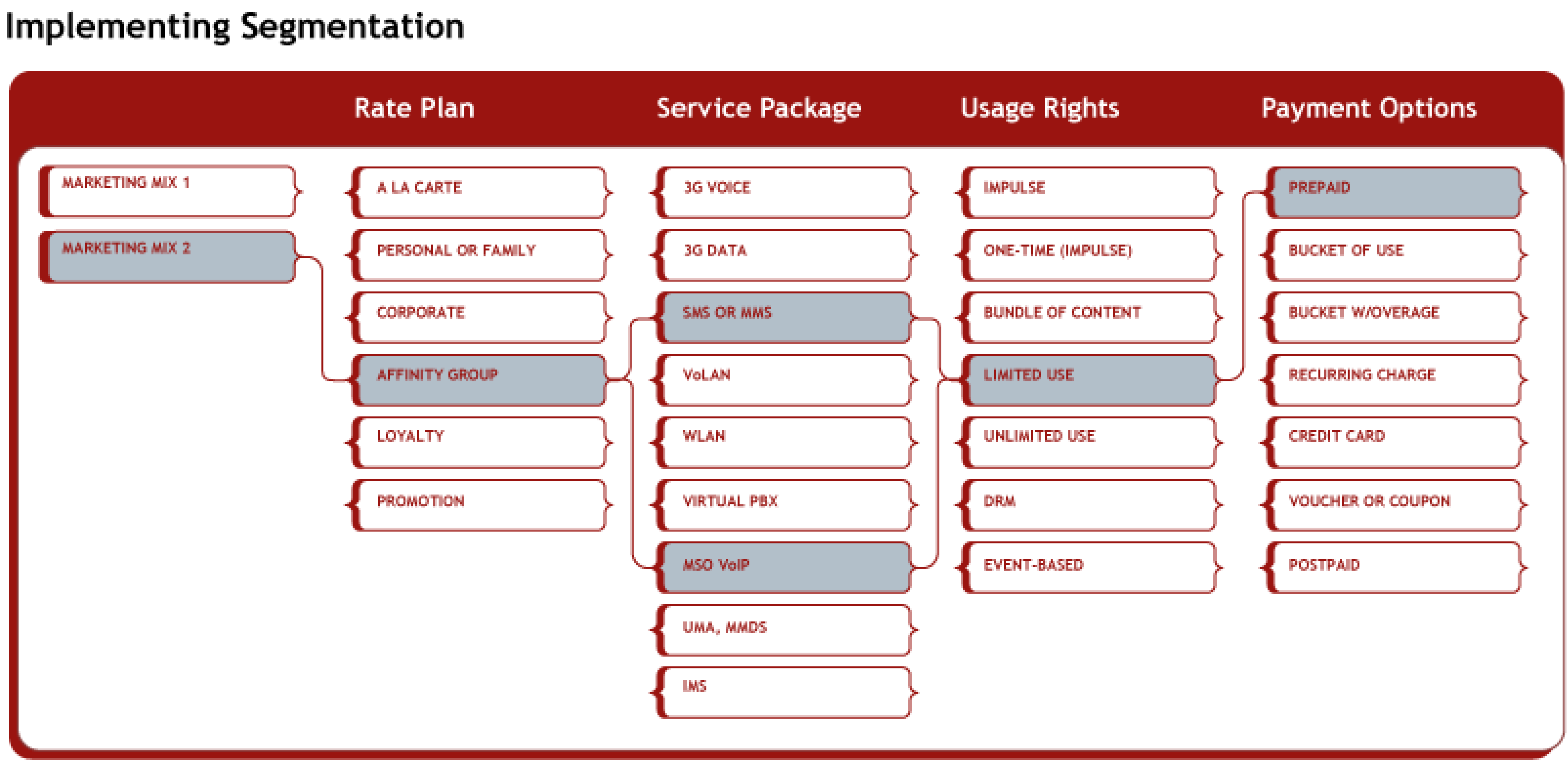
Implementing segmentation in networks

Configuring new marketing mixes to acquire and grow new segments of subscribers requires real-time rating and increased billing openness to deliver more dynamic and compelling service bundles. This is because segmentation can only be achieved in practice when new rates and price plans can be created rapidly without excessive time and cost. Furthermore a real-time approach enables carriers to closely monitor subscriber behavior in their marketing mixes and even preempt churn with loyalty programs. Finally, billing openness and flexibility is necessary to enable customer-centric service bundles and rate plans across multiple network types (i.e. VoIP MSO, VoWLAN). For example, the figures below show how different market mixes can be realized through the combination of customized rate plans, bundling strategies, usage rights, and payment mechanisms for multiple services such as voice, data and content. The first diagram shows a service package which addresses the corporate segment of users that require unlimited wireless data, VoLAN, and mobile-based PBX services billed to their departmental account.

Implementing Segmentation



The second diagram shows a service bundle that addresses an affinity group of users that require messaging and VoIP services billed to their prepaid group account:



There are two key areas which carriers can begin implementing today to enable new packages of services to address untapped or underserved market segments:

i) Monetization

Monetization of segments requires converged billing capabilities which perform real-time rating and charging of any transactional event in the network (voice call, SMS, MMS, WAP, IP flow, data VPN, VoIP), irrespective of the delivery technology or handset involved. A converged billing approach allows a carrier's marketing department full creative control over segment definition and implementation such as:

- Cross bundling of services to create multi-service packages
- Per-use rating (Pay as you go)
- Bucket billing (with or without overages and rollovers)
- Loyalty or Bonus points
- One time bundles (similar or enumerated content)
- A la carte purchases
- Try before you buy
- Promotions (real-time or point of sale)
- Sponsored content
- Volume discounts
- Zero rating of bearer services

- SMB, Corporate, or Departmental rate plans
- Event based rate plans
- Group or Community based rate plans
- MVNE capability to support MVNO's
- Prepaid, credit card, or voucher payment options

ii) Enablers

Enablers provide carriers with value-add infrastructure that augments and differentiates the subscriber experience and charging for services that vary between defined segments:

- Location, Presence, and Availability Management adds innovative customization, personalization, relevance, and context to subscriber services
- IP Charging allows rating of data services based on different factors including source/destination address and different classes of services, such as WAP, MMS, IP protocols, and corporate VPNs. Furthermore it can perform real-time SIP intermediation in a pre-IMS environment to monitor and detect unauthorized VoIP tunneling at the Proxy-Call State Control Function (P-CSCF)
- Billing-on-behalf-of using Open Services Environment (OSE) or Open Service Access (OSA) allows carriers to control and rate value-added services by third party content providers, third party applications, and MVNOs.

Conclusion

As the highly competitive mobile market approaches saturation, the ability to segment and serve untapped and underserved markets will be a strategic differentiator. Services and pricing will increasingly be subscriber-centered and personalized, and carriers should seek out lucrative opportunities targeting specific tight-knit communities and business groups.
Examples of this can be seen where SK Telecom and KTF have successfully launched over a dozen sub-brands in the Korean market or in the United Kingdom where MVNOs are specializing in the youth and shopping segments.

Creating new marketing mixes to acquire new segments of subscribers requires converged real-time billing to deliver more dynamic and compelling service bundles. Also, billing openness and flexibility is necessary to enable customer-centric service bundles and rate plans across multiple network types (i.e. VoIP MSO, VoWLAN).

The outcome of market segmentation is to maximize uptake and value from each segment in ways that cannot be done with current one-size-fits-all mainstream service plans. Segmentation allows carriers to secure new categories of users such as youth, impulse buyers, affiliate or community groups, ethnic groups, and new classes of business subscribers while at the same time defending existing subscribers and reducing churn by using selective loyalty campaigns.

Standards Based

Redknee solutions support several IMS capabilities consistent with IMS Charging Principles as defined in 3GPP TS 33.200, TS 33.225, TS 32.225 and IMS 23.825 as well as emerging 3GPP IMS 22.228 service requirements as follows:

- Support for DIAMETER and SIP volume, duration and event metering
- Real-time SIP intermediation engine using IPCG (IP Charging Gateway)
- Online, Offline and Flow Based charging models
- Advice of Charge and Redirect Functions
- CGF (Charging Gateway Function)
- CCF (Charging Control Function) Charging Rules Function (CRF)
- Gy (flow base charging) and Ro (online charging) interfaces
- Support for OS/Parlay Multi Party Call control (SIP variant) for application/service control per emerging 3GPP IMS 22.228 service requirements
- Subscriber Profile support for 3GPP TS 22.240 Generalized User Profile specifications
- WLAN support for Diameter and HSS Integration (3GPP TS 23.234)
- Policy Decision Rules Server (PDRS) TS 23.803
- Policy Decision Function (PDF)

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[1] Commission for Communications Regulation report 4th quarter 2004