

WHITE PAPER

OMH: Unlocking the Open Market Potential for CDMA Devices

Sponsored by: CDG

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Background

The power of "open" versus proprietary platforms as a disruptive force in technology is well documented. The creative potential of networks was unlocked by the use of simple and open software and standards that transformed the disparate collection of networks into the Internet.

Open Systems Promote Healthy Competition

The Internet is one of the most cited examples of an open platform creating an opportunity and market for new and innovative services. The transparent nature of the Internet creates efficient (yet competitive) ecosystems that deliver choice and variety to the market. Open standards require suppliers to create products that are compelling and valuable along a broad spectrum of price points.

The Global Mobile Trend Toward Open Market Handsets

Throughout the world, mobile devices are a conduit that already funnels transformational experiences to billions of people and will create new opportunities for the next billion who have yet to be empowered by wireless technology. For their part, mobile devices that are purchased by subscribers in an open market transaction accounted for more than half of the devices shipped in 2010 and are projected to grow more than 36% through 2014.

Thus far, most GSM/UMTS handsets have been distributed in the open market, creating several distribution channels to reach consumers. However, as part of an initiative led by the CDMA Development Group (CDG), CDMA2000 devices in high-growth countries such as India, Indonesia, Nigeria, and Pakistan are now able to utilize the benefits of the open market, creating a rapidly emerging device ecosystem that benefits operators, device suppliers, and consumers while stimulating continued industry growth.

Introduction

What Is an Open Market Handset?

The term "open market" describes a proven and increasingly popular approach to developing and distributing mobile handsets. In most countries in the world, where open market is the norm, consumers can purchase an *unlocked* handset from an *unaffiliated* dealer. The device retailer has no ties to a specific mobile network

operator, so consumers can choose the device and the mobile operator that best fulfill their needs and budget. Since consumers have the option to purchase *any* handset of their choosing, and can connect their handset to *any* mobile network, this service model is labeled as "open."

An Alternative Approach

While the open market system is well established worldwide, some markets, particularly mature markets, have taken a different, more operator-centric approach. In North America, for example, mobile operators provide network services by selling handsets directly to consumers. Since these handsets work only on the associated network, this model tends to have a limiting effect on consumer choice and market competition.

Anxious to prevent churn and push average revenue per user (ARPU), operators in this type of market use their device portfolio as a marketing tool to promote increased customer spend on mobile services. Even further, these operators have "locked" their phones, thus preventing consumers from using them on competing networks.

The OMH Initiative

An industry initiative launched in 2008 by the CDG, the Open Market Handset (OMH) initiative has enabled device suppliers, mobile operators, and others in the open ecosystem to create innovative handsets based on an open market model.

OMH creates a framework, empowering vendors to create devices that can be offered across many different markets, resulting in increased economies of scale and a broader, more diverse portfolio of CDMA2000 handsets for subscribers.

Key to the success of this model is the removable OMH subscriber identity module (SIM) card, which enables consumers to easily transfer their personal information, network preferences, and selected services between mobile phones. This capability increases the likelihood that consumers will upgrade their devices as new form factors, features, and services enter the market.

A more diverse device portfolio provides consumers with access to more sophisticated devices and services, consequently creating more opportunities for subscribers to utilize data services that increase operator ARPU. An environment that encourages innovative designs that can be quickly and efficiently delivered to the market is essential to reducing costs and growing subscriber revenue.

With OMH, subscribers have the freedom to choose the device that is right for them and the ability to use the services enabled by that device on their favorite CDMA2000 operator network. In addition to the subscriber benefits, OMH helps make more devices available in more places by optimizing distribution and lessening inventory risk for device vendors and operators.

Opportunities for CDMA2000 Network Operators

The mobile telecommunications market continues to change rapidly, adapting to consumer and enterprise demands that pose significant challenges for mobile network operators. The ability to deliver a reliable and high-performance mobile experience is a key success factor. However, the ability to offer attractive mobile phones from a continuously refreshed device portfolio can also give operators a sustainable competitive advantage.

For CDMA2000 operators, the introduction of OMH has already enabled operators in Bangladesh, India, Indonesia, Mexico, Nigeria, and Pakistan to pass on the advantages of the open market to their customers. However, the market not only demands portfolio diversity but also requires agility and a fast-paced response to the ever-changing demands of subscribers.

Harmonized Device and Network Integration

Prior to the introduction of OMH, GSM-based devices often enjoyed a time-to-market advantage over CDMA-based devices. CDMA operators had to procure inventory and undergo acceptance testing in their labs before the devices could be offered to their subscribers. Utilizing an open market approach, the OMH Test and Acceptance Group (OMH TAG) conducts device testing based on well-established industry standards, issues certificates of acceptance, and enables the supplier to distribute a device globally with a single SKU using any variety of retail distribution points, freeing operators from costly device testing, procurement, inventory, and retail expenses.

Streamlined Testing and Certification

The OMH initiative utilizes standard testing requirements and third-party testing laboratories to eliminate delays and reduce costs incurred. Original equipment manufacturers (OEMs) use OMH testing requirements to test a device once, alleviating the need for each operator to perform separate acceptance testing. This streamlined process (test once, launch everywhere) reduces testing expenses for operators and handset OEMs and decreases time to market.

Equally as important, OMH devices are distributed and purchased with an "out of the box" capability by inserting an OMH SIM card into the device to deliver advanced, revenue-generating services such as location-based services, games, multimedia messaging, instant messaging, browser-based services, and IP-enabled communications. The requisite personal information, roaming lists, and operator network and service configuration data are provided and enabled by the OMH SIM card.

Moving CDMA2000 Devices Up-tier

The combination of handset design, features, and functions has become an important part of an operator's business and ecosystem. Though network quality and service are important attributes, sophisticated mid- to high-tier handsets tend to drive higher ARPU and increase customer satisfaction and loyalty.

For instance, operators in India and other growth markets are looking to make use of these more sophisticated OMH handsets to transition from the low-end entry market to the high-end aspirational market. However, it is incumbent upon all CDMA2000 operators and handset vendors to rise to the challenge of creating an OMH ecosystem that can streamline the procurement and distribution of such high-end devices to benefit all parties.

To meet this challenge, operators and device vendors need not only a richer device portfolio but also a leaner distribution model that incorporates open standards and practices that can quickly and more efficiently deliver the desired devices and services to consumers.

The OMH initiative already provides the established framework to better position CDMA2000 devices in the open market by enabling operators and OEMs to streamline acceptance testing and distribution, reduce inventory risk, and accelerate the availability and selection of OMH devices on a global basis.

An Open Market Success: China Telecom

In China, the world's largest mobile marketplace, China Telecom represents a dramatic example of the power of the open market. Independent of the OMH initiative, China Telecom has taken advantage of a large selection of domestic and international OEMs and the open distribution model to increase its competitive position against two industry giants in its market. As a result, it created a highly diverse portfolio that now includes over 800 CDMA mobile device models from nearly 200 suppliers. By implementing this open market strategy, China Telecom is achieving impressive growth rates in terms of both subscribers and revenues.

When evaluating China Telecom's progress in the market, one must consider the competitive landscape. In 1999 the Chinese government decided to create a more competitive market for telecommunications services by breaking up the state-run carrier, and in 2008 it issued 3G licenses to three distinct operators, one of which is China Telecom. China Telecom utilizes CDMA2000 1X and EV-DO technology to deliver mobile services to its customers, and with approximately 93 million subscribers, it is the second largest CDMA operator in the world.

Device Diversity as Market Differentiator

Upon taking over the only CDMA network in China in 2008, China Telecom realized it was competing against operators that utilized an open market distribution model, giving them more desirable handset portfolios. Recognizing the competitive advantages of the open market, China Telecom focused its strategy on bringing new device models to market. To achieve this goal, the company increased its retail presence by 560,000 points of sale in 2010, representing a fourfold increase over 2009. Through these retail channels, China Telecom has delivered over 100 EV-DO (3G-enabled) models to the market in the past 12 months alone.

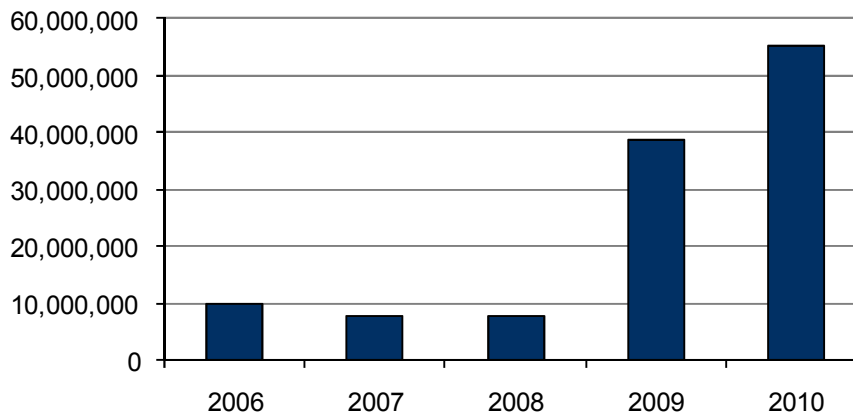
To deliver a truly differentiated experience to its government, enterprise, and retail customers, the company is also making investments in its core infrastructure.

The investment has paid off. China Telecom's subscriber base posted net adds of 34 million in 2010, and mobile data revenue grew by 34.5%.

Figure 1 shows CDMA handset shipments, including 1X and EV-DO, into China from 2006 to 2010.

FIGURE 1

CDMA Handset Shipments — China



Source: IDC, 2011

India: Another Major OMH Success Story

India continues to be one of the world's most dynamic wireless markets. Demand in this market has been boosted by the implementation of a progressive regulatory regime, network expansion, and reductions in tariffs and handset costs, which have made mobile services more affordable — for more people.

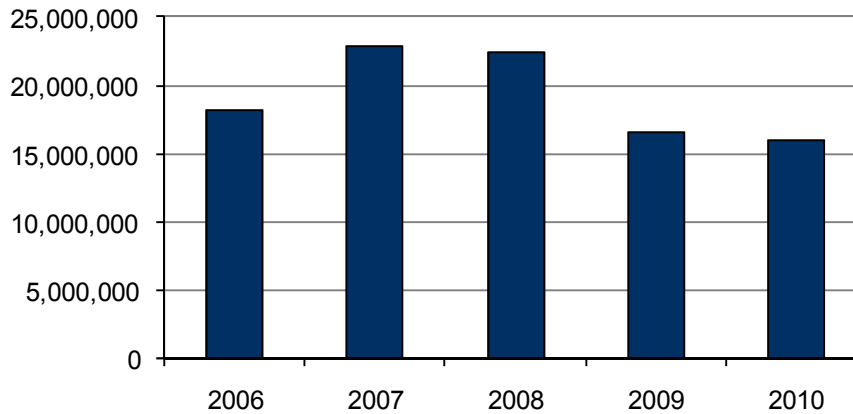
While voice continues to generate the lion's share of revenues, intense competition has created a situation in which some operators are selling voice services at below cost. They need to deliver new mobile data services to rationalize their investments in network infrastructure and pay for their slice of the recently auctioned 3G spectrum.

Mobile device shipments reached a new milestone in India in 2010 as more than 40 million handsets were shipped in the third quarter — the highest volume on record.

Figure 2 shows CDMA handset shipments into India from 2006 to 2010.

FIGURE 2

CDMA Handset Shipments — India



Source: IDC, 2011

According to IDC's Worldwide Quarterly Mobile Phone Tracker, the number of emerging vendors in India's burgeoning mobile handset market more than tripled to 20 in 2010 and garnered 39.8% of total shipments. Micromax, which is an OMH-compliant OEM, is the largest domestic player, with a 7.6% market share by the end of 2010.

Since 2009, CDMA2000 operators including Reliance Communications and Tata Teleservices have implemented an OMH approach to create a more diverse portfolio and have seen positive results. Vrajesh Shelat, Head Wireless Data Business at Reliance Communications, noted that "OMH has done exceedingly well in India, offering a wider choice of devices and easier access to services using OMH SIM cards, which work seamlessly to experience multimedia and Internet services that leverage high-speed data networks of CDMA2000 data networks. OMH has enabled enhanced time-to-market capabilities for OEMs and more flexibility and efficiency for operators to expand their voice and data services."

Another advantage to OMH for CDMA2000 operators in India is that having a greater variety of handset selection, including smartphones, is helping them create a positive consumer perception about CDMA2000 devices, which were initially positioned as a low-tier "poor man's" offering. Tata, a leading CDMA2000 operator, cites OMH as a catalyst for the growth of the CDMA2000-enabled smartphone.

In a recent press interview, Ajay Mathur, Senior Vice President and Head of Consumer Marketing, noted that the "... OMH initiative is critical ... and this platform will give a tremendous boost to the high-end smartphone category with rich data downloads and video-streaming capabilities. ... In a short span, we have seen around 15–20% growth from the open market initiative."

Leveling the Playing Field for CDMA2000 Operators in Emerging Markets

For mobile operators everywhere, but particularly for those in fiercely competitive markets such as India, creating and maintaining an attractive and diverse device portfolio is mission critical. OMH provides a unique competitive advantage to operators seeking to achieve this goal. OMH demand is outpacing supply, inspiring virtually all Indian CDMA2000 operators to move toward an OMH-only model for bringing new devices to market.

As Anil Sardana, Managing Director at Tata Teleservices Ltd. India, concluded, "OMH creates a level playing field for the CDMA ecosystem and opens opportunities for all operators, OEMs, and channel partners who are expanding CDMA in India, one of the fastest-growing telecom industries of the world."

Opportunities for Mobile Device Manufacturers

As the red-hot growth in connectivity continues, mobile network operators, enterprises, and consumers are seeking a steady supply of newer, more capable mobile phones. To meet this demand, manufacturers have almost halved design and delivery cycles for mobile devices in the past two years. Reducing time to market is essential, but in growth markets, other factors must also be taken into account.

Continued Demand for Affordable Mobile Phones

One important factor in India is the overall cost of the device. In 2014, IDC expects that India, China, and other countries in the Asia/Pacific region will begin to significantly drive penetration of sub-US\$100 smartphones. However, feature phones will continue to drive the volume of *overall* mobile handset shipments. With 70% of India's population living in rural locations, handsets need to be priced affordably. Between April and June 2010, 40% of the handsets purchased in India were sold at a price below \$50.

Increased Economies of Scale

For the OEM, this means that creating both compelling and affordable devices continues to be a success factor, particularly in emerging markets characterized by price sensitivity. OMH helps meet the challenge. The technical harmonization provided by OMH allows device manufacturers to leverage a single device design across multiple operators and markets worldwide, providing better economies of scale and enabling them to amortize development costs across a much larger aggregate addressable market.

A New Framework for Success

Incumbent OEMs, such as Samsung and Nokia, enable manufacturing efficiencies that can help them drive significant revenue from the slimmest of margins. For newer emerging OEMs, which may not have the resources to deliver handsets that embody each of the various technologies, OMH creates an efficient framework that allows them to create more competitive products for CDMA2000 operators.

As with mobile network operators, the OMH model enables manufacturers to offer a more attractive mobile device portfolio with built-in efficiencies and cost containments, including faster time to market, additional and better distribution channels, and more efficient design and development processes.

Commenting on the important role of OMH in driving costs out of the system, Deval Parikh, Chief Officer of Handsets, VAS, and Procurement, Virgin Mobile India, noted, "With OMH expanding as a global initiative, larger device volumes across geographies will play a critical role in lowering handset prices."

In addition, OEMs can also leverage the new distribution options enabled by OMH to build brand recognition and create new revenue opportunities through vendor-managed services and application stores.

Benefits of the OMH Distribution Channel

OMH has been instrumental in helping OEMs and CDMA2000 operators bring diversity and choice to their customers. In following the open market model for distributing handsets, OMH has been instrumental in increasing the availability of CDMA2000 handsets beyond the traditional, operator-controlled distribution channel.

OMH SIM Card Flexibility

Prior to the implementation of OMH, if subscribers wanted to purchase a new handset, their choice was limited by what their operator was offering. The addition of an OMH SIM card or R-UIM has provided the specification that drives manufacturing efficiencies and transformed the distribution of CDMA2000 devices.

With OMH, subscribers who are looking to purchase a new CDMA2000 handset can simply buy the handset at their chosen retail location, insert the OMH SIM card from their old phone into their new phone, and their new device is ready for use.

OMH Mitigates Risks

For CDMA2000 operators, managing a network, negotiating with OEMs, operating retail stores, and handling other responsibilities associated with selling hardware have proved to be burdensome. With OMH, relying on a vast network of independent distributors to stock and market OMH handsets has the potential to increase handset availability while offloading the costs of selling and procuring the devices.

The nature of the handset business requires various players in the ecosystem to absorb risk. For instance, if a certain handset design fails to attract subscribers, then distributors and operators are stuck with the unsold inventory. OMH mitigates this risk by allowing distributors to sell the same device across multiple OMH channels, operators, and global markets.

If an OMH handset is not selling well in one market, a distributor has the option of selling the same handset in a different region where the capabilities of that handset may have greater market appeal. Furthermore, operators work closely with distributors on voice and data activations (new or upgrade subscribers).

Advantage OMH: Greater Choice for All

Since the OMH handset distribution model is operator independent, it allows distributors to choose how and where to sell the handsets. However, to succeed, distributors need to be aligned with operator strategies like promoting activations, services, etc. The relationship is mutually beneficial, in no way diminishing the role (or the brand) of the mobile network operator.

Opening up the channel and allowing the sale of handsets through a variety of distribution channels reduces handset inventory costs for operators, allowing them to carry only, if they choose, the OMH SIM cards and focus on their core competency: delivering superior service to their subscribers.

A Complementary Distribution Channel

The OMH model creates a new distribution conduit that complements the existing operator model. Creating additional retail venues outside the traditional operator channel broadens the point-of-sales opportunity while reducing the operator's exposure to inventory risk.

Challenges and Opportunities for OMH

The CDG's OMH initiative expands the opportunity for operators to offer devices and services that will benefit their subscribers as well as improve their ARPU.

IDC believes that the OMH initiative has been successful in creating a more attractive and competitive device portfolio that attracts new subscribers while retaining legacy customers. OEMs will be able to improve their time to market while efficiently expanding into new markets. In both emerging and mature markets, OMH will be the lever to open new opportunities for CDMA2000 operators.

Thus far, the CDG and its partners have done a superb job of promoting the benefits of OMH. Still, OMH will need to overcome challenges in several areas in order to fulfill its promise. However, it is clear that these challenges are also opportunities for incumbent vendors as well as new entrants.

Challenges

- ☒ Operators must invest more in their OMH marketing spend to educate subscribers of its value and create better brand awareness.
- ☒ Operators will also need to incentivize the OMH ecosystem to build stronger distribution and channel partners. This will create a path to market that will deliver the most compelling devices to consumers at a variety of retail locations.
- ☒ Distributors with investment potential that are looking to benefit from the pent-up consumer demand in emerging markets will likely be able to take advantage of those markets being supported by OMH.
- ☒ Consideration should be given to expanding the OMH program into mature markets where the SIM card (or R-UIM) is not currently used by CDMA2000 operators and where operators are reluctant to release control over the devices running on their networks.

Opportunities

- ☒ Opportunities exist for distributors to replace the operator's role in terms of distributing OMH devices into the marketplace. This will broaden retail channels and increase access and choice for the consumer.
- ☒ Opportunities also exist for device OEMs to utilize OMH as a platform to help bring new devices to emerging new markets such as Africa, Central Asia, Eastern Europe, and the Middle East.
- ☒ IDC believes that portfolio differentiation is in its infancy. Using OMH to augment subscriber personalization with special handset features or innovative applications will help drive handset sales and ARPU growth.
- ☒ OMH presents an opportunity to bring higher-tier devices to emerging markets with reduced risk, creating new revenue opportunities for operators that offer mobile broadband data services.
- ☒ Increased variety of connected devices (dongles, tablets, notebooks, etc.) will allow OEMs to create and distribute a broader range of devices that are OMH-enabled to multiple CDMA markets, focusing efforts based on regional demand.
- ☒ IDC believes that the biggest opportunity for those in the OMH ecosystem revolves around developing a stronger distribution strategy that will increase the availability of CDMA2000 devices.

Conclusion and Future Road Map

To date, the OMH commercial rollout has been focused on fast-growing, developing markets, such as Bangladesh, India, Indonesia, Mexico, Nigeria, Pakistan, and Thailand, which already used SIM cards in their CDMA2000 devices prior to adopting OMH.

While the focus has primarily been on lower-tier and mid-tier devices, we believe that consumers will demand that mobile network operators and their OEM partners offer more sophisticated devices and services.

While commenting about the challenges in a 2010 interview, Manu Nagar, CEO of Long Cheer in India, noted that "customers today are becoming difficult to please with high demands of style and features."

As mobility extends beyond the confines of the traditional mobile handset and into tablets, operators and OEMs will be forced to apply the open market model to these types of devices and their services as well.

However, we believe that the smartphone will remain the dominant platform given its truly distinctive capability as a computing device that is pocketable and mobile.

Last but certainly not least, we believe that OMH has played a role in enabling new OEMs and device suppliers to grow, helping to further drive efficiencies, competition, and the introduction of innovative designs into the global mobile marketplace.

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