Open Device Initiatives Breathe Life Into CDMA Networks

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The Bottom Line

The push for greater compatibility of CDMA devices across networks and a streamlined certification process will improve the value of CDMA devices to consumers and, as a result, extend the serviceable life of CDMA networks.

Burgeoning Open Device Certification Programs Speed Device Deployment

Faced with growing competition from GSM and UMTS networks, the CDMA community has made important strides to improve the development and certification processes for new CDMA devices in Asia-Pacific. Under the guidance of the CDMA Development Group (CDG), a coalition of more than 40 operators, device manufacturers and SIM card providers developed the Open Market Handsets (OMH) initiative (see Exhibit 1). OMH represents the most significant effort to date to ensure broad regional mobile device certification for CDMA networks and facilitate greater efficiency in developing and launching mobile handsets and devices.

In the U.S., Verizon Wireless has applied similar certification processes in developing its Open Development Initiative (ODI) designed to speed time to market for machine-to-machine (M2M) devices.

OMH Will Facilitate Further Development of New Device Sales Channels

Historically, CDMA networks have trailed the GSM camp in terms of device variety, interoperability and the ability to easily gain certification across multiple networks. OMH is a strong strategic step forward in both scope and function that will allow devices to undergo a single certification and run equally well across the networks of any of the initial 15 operators participating in the program. The new devices will be standardized around SIM cards that are being supported by 69 CDMA operators in 48 countries. The standardization of design and streamlining of the certification process will greatly facilitate speed to market for new devices and guarantee compatibility across networks for voice and data services, including SMS, MMS, packet data, browsing, BREW apps, Java and location-based services.

Exhibit 1: Open Market Handset Initiative Partners
Source: CDG

OMH Participants by Type

Operators	Hutch, Multi-Links, Mobile 8, Reliance Mobile, Virgin Mobile, SFone, Telkom Indonesia, Indosat, Citycell, Visafone, CAT, Tata Indicom, Bakrie Telecom, MTS, Starcomms
SIM Card Vendors	Gemalto, Oberthur, Eastcompeace, Sagem
Device-Makers (Primary OEMs)	Motorola, Samsung, LG, Nokia, Kyocera and Huawei

The first OMH device to hit the market, Samsung's Mpower 699, was launched in August 2009 in the Indian market. The new Samsung mobile device design included the OMH SIM card slot that will allow the phone to be used on any CDMA network in India. By shifting to a SIM base, the CDMA manufacturers and operators are transforming their strategic positioning within the Indian market and eventually other OMH-enabled markets as well. For 2010, the Indian market is expecting a growing array of OMH-capable devices from Samsung, LG, Huawei and others, creating an important first wave of OMH devices in this quickly growing market. The expanded portfolio of more flexible CDMA devices will help Reliance Mobile and Tata Indicom compete against a strong array of GSM devices in a market where the average replacement cycle can exceed three to four years depending on the consumer market segment. In a highly competitive and predominately cheap prepaid mobile market like India, operators are keen to establish distribution channels that ease the financial burden associated with customer acquisition.

Based on expected device launches, Yankee Group expects that the OMH effort will begin to gain significant traction among CDMA operators in South Central Asia in 2010. All five of India's CDMA networks currently support the initiative and will be joined by CDMA operators in Indonesia, Nigeria, Thailand and Bangladesh by early 2010.

One of the key strategic benefits of the OMH initiative will be the opening of the CDMA devices to a broader set of distribution channels. The combination of SIM slots and multinetwork certification will create a new level of device distribution that will favor the growth of direct sales channels, opening new doors for OEMs to go straight to the consumer market without securing operator interest. By expanding distribution channels and eliminating the difficulty of switching operators while keeping the same device, a vibrant OMH marketplace will significantly improve the long-term value of CDMA devices for consumers.

An expected byproduct of this transition to OMH devices is the potential growth of gray-market device distribution. Expansion of gray-market devices will present a potential challenge to OEMs and operators, and they must work closely with retailers to ensure that legitimate OMH devices can compete effectively with gray-market goods. In addition, device manufacturers will need to work closely with prominent retailers to ensure that adequate financing mechanisms are in place to help drive the sale of OMH handsets

and devices. Even with these potential challenges, the growth of a more direct device distribution model may potentially relieve mobile operators from the expensive task of maintaining device inventories and allow them to focus more on the services and customer care aspects of their business. From a consumer angle, OMH devices will generally be seen as a benefit as greater development efficiency should make device ownership less expensive while broad interoperability will eliminate many of the technical difficulties associated with pre-OMH devices. As detailed in Exhibit 2 on the next page, the SIM card model is supported by the vast majority of CDMA networks across the globe.

Verizon Wireless' ODI Paves Way for New Product Lines

Unlike the operators in emerging markets, Verizon Wireless' ODI program is currently less focused on the expansion of conventional mobile phones within the consumer market. The primary short-term benefit of open development for Verizon will be a focus on M2M devices and consumer electronics devices. The U.S. mobile device market is so tightly controlled by operators, new device entrants to the consumer space will require extraordinary resources and channel arrangements to distribute their devices without specific marketing support from a Tier 1 operator. The short-term strategic focus for Verizon's Open Development group has been M2M products for telemetry, sensors/monitors and other products. Verizon's recently established M2M-focused joint venture with Qualcomm, nPhase, will most likely be the first major beneficiary of the open development program's ability to speed the certification of M2M modules (see the September 2009 Yankee Group Report, "Let the Vertical Integration of M2M Solutions Begin!"). This effort also shows solid promise as a catalyst for third-party companies to develop new distribution channels, particularly for specialized devices and M2M products and services, that will carry the marketing benefit of being certified on the U.S.' largest carrier network.

To date, CDMA modules are generally more expensive than competing GSM modules. The more streamlined development and certification process fostered by Verizon's ODI program will help CDMA module manufacturers get products to market quickly and evaluate their future potential for success. In a fast-moving and constantly changing marketplace, M2M players will need to adapt their products constantly to changing customer needs and, in a sense, fail quickly so that they can better identify winning products and services.

Exhibit 2: CDMA Operators Supporting SIM Cards
Source: CDG

EMEA

Afghanistan
Afghan Telecom,
Wasel Telecom

Angola
Movicel Telecomunicações

Cameroon
CAMTEL (CT Phone)

Georgia
Iberiatel

Ghana
Kasapa Telecom

Iraq
Kalimat

Kazakhstan
ALTEL (DALACOM)

Kyrgyzstan
AkTel (Fonex)

Mauritania
Chinguitel (Expresso)

Moldova
Internedstrcom (OK)

Morocco
Wana (Bayn)

Namibia
Telecom Namibia (Switch)

Nigeria
Multi-Links Telecommunications
Ltd., Starcomms, Visafone,
Rainbownet

Pakistan
Pakistan Telecommunication
Company (PTCL Wireless)

Russia
SkyLink (Multiple Regions),
Baykalwestcom (Wellcom),
Enisey Telecom (Wellcom),
Uralsvyazinform

Sudan
Sudatel (Expresso)

Tajikistan
M-Teko

Uzbekistan
Perfectum Mobile

Yemen
Yemen Mobile

Latin America

Aruba
EOCG Wireless Aruba
(MIO)

Belize
Speednet Communications
(Smart)

Bermuda
Bermuda Digital
Communications
(CellularOne)

Cayman Islands
EOCG Wireless Cayman
Islands (MIO)

Chile
Claro Chile

Colombia
Movistar Colombia

Dominican Republic
Codetel (Claro)

Ecuador
Movistar Ecuador

Guatemala
Telgua (Claro), Movistar
Guatemala

Haiti
HaiTel

Jamaica
Oceanic Digital Jamaica
(MiPhone)

Peru
Movistar Peru

Venezuela
Movistar Venezuela, Movilnet

Asia-Pacific

Bangladesh
Pacific Bangladesh Telecom
Ltd. (CityCell), Ranks Telecom
(RanksTel)

Cambodia
Cambodia Shinawatra Co.
(Camshin)

China
China Telecom

Guam
DoCoMo Pacific (ex-Guamcell),
IT&E Overseas

India
Tata Teleservices, Reliance
Communications, MTS Shyam
Sistema, Virgin Mobile India

Indonesia
Mobile-8 Telecom (Mobile-8),
Bakrie Telecom (Esia), TELKOM
Indonesia (TELKOMFlexi),
Indosat (StarOne)

Japan
KDDI (au)

Korea
LG Telecom

Laos
Lao Telecommunications
(WinPhone)

Mongolia
SkyTel, G-Mobile

New Zealand
TNZ

Philippines
Broadband Everywhere,
Bayan Telecommunications

Taiwan
APBW (Qma)

Thailand
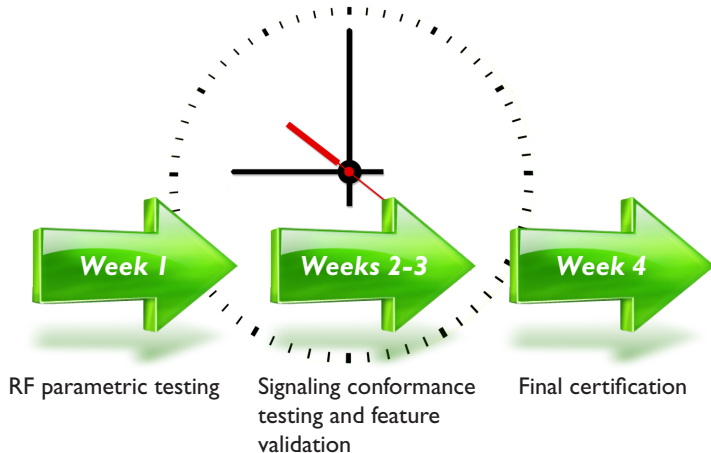Hutchison CAT (Hutch),
CAT Telecom

Vietnam
S Telecom (S-Fone),
Hanoi Telecom

Verizon's shift to open development will really depend on its continued ability to adhere to the streamlined certification process. As outlined in Exhibit 3, Verizon Wireless has managed to reduce the total time necessary to certify a device on its network from 12 or more months to approximately four weeks. Verizon developed this streamlined process around active partnerships with third-party technical labs, greatly distributing the workload and increasing the level of transparency for and focus of certification documents. As of Q2 2009, Verizon's ODI program had already approved more than 60 products primarily destined for M2M services.

Exhibit 3: Verizon Wireless Shrinks Certification From 12 Months to 4 Weeks
Source: Verizon Wireless

Verizon Open Development Certification Timetable: Total of 4 Weeks

Week 1 — RF parametric testing

Weeks 2-3 — Signaling conformance testing and feature validation

Week 4 — Final certification

While the short-term focus of this program is to expand the total number of devices compatible with Verizon's wireless network, certification in no way guarantees Verizon Wireless is interested in carrying the devices in their own stores or backing those devices with any marketing muscle.

Conclusions: OMH Success Is Crucial to Extending the Life of CDMA Networks

Even with a highly successful implementation of OMH devices across major markets, the initiative is unlikely to change the tide of market share currently dominated by GSM and UMTS technologies. What this initiative creates, however, is a strategically important shift in devices that will extend the value and service life of existing CDMA networks. As the majority of Latin American CDMA operators have already abandoned CDMA technology for cheaper GSM options, the OMH initiative will be crucial to the continued survival and expansion of CDMA networks in emerging markets in Asia, Africa, the Middle East and Eastern Europe. With a broad array of devices benefiting from a fast certification process and guaranteed compatibility across networks, CDMA operators will now be better positioned to address the needs of low-income mobile users who tend to use multiple send cards for better calling price options while maintaining a single handset. Since much of the growth of subscriptions will be generated by these low-income users, CDMA operators will be better positioned to compete with GSM service providers going forward.

By opening and streamlining the device certification process, Verizon Wireless has gained stronger strategic footing against its Tier 1 competitors. This will become increasingly important as competitors' efforts, such as AT&T's partnership with Jasper Wireless, will generate greater efficiencies in their own right for device development and certification.

Recommendations

- **CDG and operators must expand the OMH initiative to include the North American market.** While the emerging market focus of early OMH operator participants will generate strong OEM interest and device volumes, North America's 150 million-subscriber CDMA market should not be left behind. While the politics and technical challenges may be significant, ensuring that the OMH is truly global will generate the scale necessary to ensure greater price compatibility of CDMA devices with competing technologies. Verizon Wireless, Sprint, Telus and Bell should strongly consider working in concert to develop a similar OMH process in North America, even as they invest in building out their LTE networks. Given the fact that LTE mobile handsets are still years away from true scale and affordability, these CDMA operators need to ensure that their current and short-term device portfolios are as competitive as possible.

- **OMH participants should develop financing arms to gain additional advantage.** One of the key strategic goals of the OMH initiative is to facilitate more direct distribution of CDMA mobile devices from OEMs to consumers. Given the extraordinarily low cost of capital in the current era, OMH partners should develop new financing mechanisms to help qualified retailers extend the best possible terms to their consumers and drive greater affordability of CDMA devices. The streamlined certification process of the OMH program will already generate lower development costs for CDMA products. The combination of lower average sale prices (ASPs) and favorable consumer credit terms will greatly add to the competitive pricing of CDMA handsets and devices.

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