

## Highlights of the GSM Association's Mobile World Congress in Barcelona, 15 – 18 February 2010

*This briefing note provides a personal account of selected highlights from attending the GSM Association's Mobile World Congress in Barcelona, 15 – 18 February 2010. While every effort has been made to ensure that the content is accurate, you should verify relevant facts for yourself before relying on the information contained herein.*

If you need any assistance in understanding the strategic implications of the developments from this year's Mobile World Congress, please contact us at:

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### Attendance & Sentiment

After a couple of years of reduced attendance at MWCs, attendance at this year's event nudged-up towards the physiologically-important 50,000 level over four days.

Faint signs of recovery from the global financial recession led some to conclude that the worst may be over, but with the future path of the recovery remaining highly uncertain. Mobile operators, who had cut capital expenditure drastically in 2009, are likely to hold capex budgets flat, or selectively grow them only slightly, rather than cut back further, but where capex is targeted in the next couple of years may be very different from previous years.

While Apple has always preferred to make its new product announcements at its own MacWorld conference rather than at the GSMA MWC (even after launching the iPhone), this year was the first time that Nokia was not at MWC (preferring to make most of their new handset announcements at the Consumer Electronics Show in Las Vegas in January, and holding an event of their own at a nearby hotel in Barcelona), while Google adopted a much higher profile at MWC, with Google CEO Eric Schmidt giving the congress keynote speech, unveiling a new Google mantra – 'Mobile First', and with a number of vendors launching new handsets based on Google's Android operating system.

Meanwhile, Qualcomm and the CDMA operators China Telecom, KDDI and Verizon Wireless all joined the GSM Association to underline the point that the mobile industry is uniting behind one technology – LTE – for next generation (4G) mobile communications.

While there was much to see, and many announcements, at this year's MWC, for me there seemed to be two big themes: Mobile Broadband, and Mobile Apps.

### Mobile Broadband

A major talking point at this year's MWC was undoubtedly the phenomenal growth in mobile data traffic, driven by the rapid take-up of smartphones and mobile-enabled PCs, testing the capacity limits of

operators' networks and the viability of the flat-rate data pricing model that has helped to stimulate demand.

Operator's are preparing to respond to continuing growth in data traffic by introducing tiered usage-based pricing for customers, seeking to grow revenues by taking a slice of mobile apps revenues, adding policy control to their network's intelligence to manage the use of network resources, offloading data (particularly video) traffic onto dedicated network resources (more routers), upgrading backhaul (using more fibre backhaul), increasing radio access network speeds (higher-speed HSPA, and then LTE), and modernising their existing 2G/3G networks to reduce operational costs and to prepare for the evolution to 4G.

For operator's, this is a challenging agenda to face within constrained capex budgets. For their suppliers, there is already evidence that those with strong managed services capabilities (Ericsson, Alcatel-Lucent, Nokia Siemens Networks, Cisco, Motorola) are starting to win-back business from the cheap box vendors (Huawei, ZTE, etc), as operators look to their suppliers to help manage technology risks, network design and operations, and the transition from 2G/3G to 4G. As the mobile network becomes more data-oriented, the IP router vendors (Cisco, Juniper, Tellabs, Sonus, Acme Packet) look set to take a larger share of mobile operators' capex spend, while much of the new technology for policy control, video optimisation, etc is dominated by smaller private firms, which could lead to additional acquisitions by the major vendors.

With over-the-top applications providers (Google et al), mobile apps and software vendors, handsets manufacturers, and mobile network operators, all competing to maximise their share of the mobile value chain over the next five years, the transition towards 4G is set to reshape the industry landscape and to determine winners and losers.

Most 3G mobile operators have added High Speed Packet Access (HSPA) to their networks to support mobile broadband (at speeds up to 7.2Mbps). The HSPA technology evolution path will enable future staged upgrades to HSPA+ using dual carriers and MIMO technology to 21Mbps, 42Mbps and 84Mbps, in parallel with the development and availability of LTE and LTE Advanced. Each operator will need to decide its own strategy for the evolution of its network from 2G/3G (HSPA) to LTE/LTE Advanced – some may opt for an early move to LTE, while others will exploit the further evolution of HSPA before moving to LTE later.

Relevant factors to take into account will include the future pattern of demand for voice and data services, the availability of spectrum (new spectrum at 2.6GHz and 800MHz, and the re-farming of existing 2G spectrum at 900MHz/1800MHz and 3G spectrum at 2.1GHz), technology maturity, availability and cost – both for network equipment and devices, the need to modernise and reduce the operating cost of their existing 2G/3G networks, and the risks and costs of alternative evolution paths.

One important matter yet to be fully resolved for LTE is how to carry (and make interoperable) SMS services (including Voice) over LTE networks. An industry initiative, backed by 40 companies, originally known as 'One Voice', has been re-branded as Voice over LTE (VoLTE) and aims to define interoperable standards by the first quarter of 2011. Until these standards are developed, adopted by equipment vendors and proven to be mature, many operators will prefer to keep their voice and SMS traffic on their existing 2G/3G networks, even if they start to deploy LTE early as a mobile broadband overlay.

Femtocells offer operators a way to improve in-door coverage, and to route traffic to/from the home/office via the fixed broadband network, potentially reducing costs in their wide-area cellular networks. A number of vendors had femtocells on show, including ip.access, Ubiquisys, Huawei, Hitachi, and NEC. Vendor trials and pilot services of femtocells are now underway in North America, Europe and Asia, including Vodafone's Sure Signal product launched in the UK in July 2009.

Notable announcements included:

- AT&T has recently implemented a software upgrade to HSPA 7.2Mbps, and has tripled its annual investment in fibre backhaul to cope with the growing demands of data traffic (up 5,000 per cent over the last 3 years). AT&T also announced plans to move directly from HSPA 7.2Mbps to LTE, with commercial deployment of LTE networks expected in 2011 (in partnership with its chosen vendors Alcatel-Lucent and Ericsson).
- Huawei demonstrated its LTE Advanced system (including the world's first LTE Advanced/HSPA+/2G mobile dongle (E398), delivering download speeds up to 60Mbps – the company claims to be the first vendor to use multi-carrier aggregation and high-order MIMO technology, which increases spectrum efficiency up to five times, reducing transmission costs.

## **Mobile Apps**

Mobile applications ('apps') was a major theme at this year's MWC, with a dedicated exhibition hall ('App Planet') and a wide-range of mobile apps on show. There were significant announcements about new mobile apps platforms, mobile operating systems (OS), and smartphones.

### *Mobile Apps Platforms:*

The world's largest mobile operators<sup>1</sup>, serving a global customer base of more than 3 billion users, have clubbed together to launch a unified open platform for mobile apps dubbed the 'Wholesale Applications Community', in response to the success of Apple's iPhone App Store, which launched in 2008 (registering its 3 billionth download last month) and has spawned numerous imitators. The community

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<sup>1</sup> America Movil, AT&T, KT, NTT Docomo, Orange, Telecom Italia, Telefonica, Telenor, TeliaSonera, Sprint plus the operators in the Joint Innovation Laboratory (JIL): Vodafone, China Mobile, Softbank, and Verizon Wireless.

will use common open standards<sup>2</sup> to enable developers to create applications across multiple platforms. The move was supported by several handset vendors without apps store businesses of their own, including LG, Samsung and Sony Ericsson.

Meanwhile, Vodafone announced that the developer portal (JIL.org) for its apps platform, Vodafone 360, was coming out of beta and being made available to many more developers. Vodafone 360, launched in October 2009 in response to Apple's App Store and Nokia's Ovi, is currently available in 8 of the operator's European subsidiaries, with around 7,000 apps, 2 million capable devices, and 50 different handsets, including two from Samsung, built specifically to support Vodafone 360, based on the LiMo Foundation's Linux platform.

However, Sony Ericsson also launched a new online apps platform called 'Creations', which it described not as an app store but as a 'mall', leaving operators to customise it the way they want.

Alcatel-Lucent also launched a new development platform to securely expose select network resources to application developers and content partners to build new 'service mash-ups'.

#### *Mobile Operating Systems (OS):*

A number of new mobile operating systems (OS) were announced in Barcelona, including:

- Microsoft's Windows Phone 7 Series (phones available from several vendors by the end of 2010)
- Samsung's bada OS (initially on the Wave smartphone, but with others to follow)
- Nokia and Intel are merging their respective Linux initiatives (Maemo, Moblin) to form a new platform for high-end devices known as MeeGo, hosted by the Linux Foundation, to compete with Google's Android

...in addition to the established mobile operating systems including Apple's iPhone OS, Nokia's Symbian OS, RIM's Blackberry OS, Google's Android OS, etc. The industry seems set on creating around 10 major mobile operating systems!

#### *Smartphones:*

A number of new smartphones were announced at this year's MWC (though some of them had originally been announced at the Consumer Electronics Show in Las Vegas in January):

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<sup>2</sup> The alliance plans to initially use both JIL and the OMTP BOND requirements, evolving these into a common standard in the next 12 months.

- Samsung's Wave, the first smartphone based on Samsung's own new operating system 'bada', and featuring a new OLED display ('the world's first Super AMOLED display') and Samsung's own user interface (Touch Wiz 3.0).
- Sony Ericsson's 'mini' and 'mini pro' versions of its Xperia X10 Android device and the 'pro' version of its Vivaz Symbian device.
- Motorola launched a range of Android smartphones including the Quench (exclusive to T-Mobile USA) also known as the Cliq XT (outside of the US), and the Milestone (known in the US as the Droid), both with Motorola's 'Motoblur' user interface.
- Alcatel launched its first Android touchscreen device, the OT-980.
- HTC launched two new Android smartphones: the Desire and the Legend, both incorporating HTC's Sense user interface, and a smartphone running Qualcomm's Brew platform, the HTC Smart - exclusively for Telefonica
- Huawei's U8800, the world's first HSPA+ (14Mbps) smartphone based on Google Android OS version 2.1, plus the U8300 for the youth market supporting social networking services, the U8100/8110 entry-level smartphones, and the U8220 (marketed as the T-Mobile Pulse), dubbed the world's first pre-pay Android device.
- ZTE's Bingo 3G smartphone, based on Qualcomm's Brew mobile platform, and a low-cost touchscreen phone for T-Mobile called Vairy Touch II.

#### **Other notable announcements:**

- Bharti Airtel, India's largest mobile operator, has made a US\$10.7bn bid for Zain's fourteen African mobile businesses (excluding Morocco and Sudan)
- Motorola is to split into two companies in the first quarter of 2011, one to focus on mobile devices and television set-top boxes, and the other on networks and enterprise mobility

...and very much more besides!

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