

2007 SVC Wireless Annual Conference: Mt. View, September 29, 2007

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Abstract: This very well attended conference featured keynotes by Ericsson, Lenovo and Super Computer pioneer Steve Chen. There were three great panel sessions covering Mobile/Wireless: Device and Applications, Access and Infrastructure, and Business/VC criteria for investments. For the SVC Wireless Conference overview, please refer to:

<http://www.scu.edu/ethics/practicing/focusareas/business/conference/2007/>

In this article, we zero in on the excellent keynote by Arun Bhikshesvaran, Vice President Strategy & CTO North America, Ericsson Inc, who spoke about **Global Competition and Collaboration in the Mobile/Wireless Ecosystem**. Here is an edited version of Arun's abstract:

With one-third of the world population equipped with mobile devices such as mobile phones, PDAs, and laptops, the mobile/wireless industry has become a trillion-dollar ecosystem. In this flat world, the mobile/wireless ecosystem also demonstrates itself as a global system, where worldwide mobile handset vendors, wireless operators, and content/application providers compete against and cooperate with each other. It is a Wireless Olympics, a game of cooperation and competition known as Coopetition. As a trillion-dollar global ecosystem, the mobile/wireless industry is facing significant competition across the whole value chain. At the same time, global players from different industry segments must collaborate with each other on content, other applications, and back end systems. How will the new landscape of "coopetition" evolve in the mobile/wireless industry? What is Ericsson's response to this new ecosystem?

Global Competition and Collaboration in the Mobile/Wireless Ecosystem

Keynote by: Arun Bhikshesvaran, VP Strategy & CTO North America, Ericsson Inc

Mobile Subscriber Trends:

By the end of this year's 2nd quarter, there were estimated to be over 3B worldwide cellular subscribers. Of those, approximately 2.5B work on GSM cellular networks, which are evolving to HSPA and LTE for high-speed data applications. The number of cellular subscribers breaks down as follows:

- Latin America: 340 M, 60% penetration of the population¹
- North America: 265 M, 80%
- Western Europe: 456 M, 114%

¹ Includes Central America, South America and the Caribbean.

- Middle East and Africa: 327 M, 29%
- Asia Pacific (excl. Japan): 1100 M, 31%
- Japan (excl. PHS): 98 M, 77%
- Central & Eastern Europe: 427 M, 79%²

The GSM family of technologies includes **GPRS, EDGE, W-CDMA, and HSPA**. All of these are open 3GPP standards.

Editors Note: HSPA is the generic name that encompasses both High Speed Upstream and Downstream Packet Access.

There are many more HSDPA networks launched (66 networks in 36 countries) then HSUPA (11 networks). Mobile broadband is a reality today with HSPDA. That technology is now mainstream with 311 devices and 71 suppliers as of July 2007. 77% of commercial W-CDMA networks have also launched HSPDA.

Most W-CDMA -HSPDA networks combine with EDGE for service continuity and a better user experience. There are 850M combined GSM, WCDMA, and HSPA subscribers in commercial cellular networks worldwide.

Technology, Business Models and Society are all Changing:

We are well aware of the iPhone and smart phone revolution. There is also gaming and other multi-media applications and services coming. Other elements of change include:

- Internet Mash-ups, e.g. Craigslist and Google
- Internet TV, e.g. Joost
- Place and time shifting, e.g. Slingbox (being acquired by Echostar) for place shifting and VoD/ archived video streaming for time shifting
- Personal video conferencing that span continents (Arun gave an example of his parents in India having a PC based video chat with his son in the U.S.)
- Wireless bunny (using a WiFi based Internet connection)

Ericsson expects to see multimedia applications convergence over the fixed and mobile Internet (especially with the maturation of HSPA and LTE). They expect network infrastructure, new services, and multimedia solutions and applications to play an important role in evolving cellular networks and devices (wireless cameras, notebook PCs, handheld PDAs, and smart mobile phones).

HSPA Evolution for 5MHz Carrier

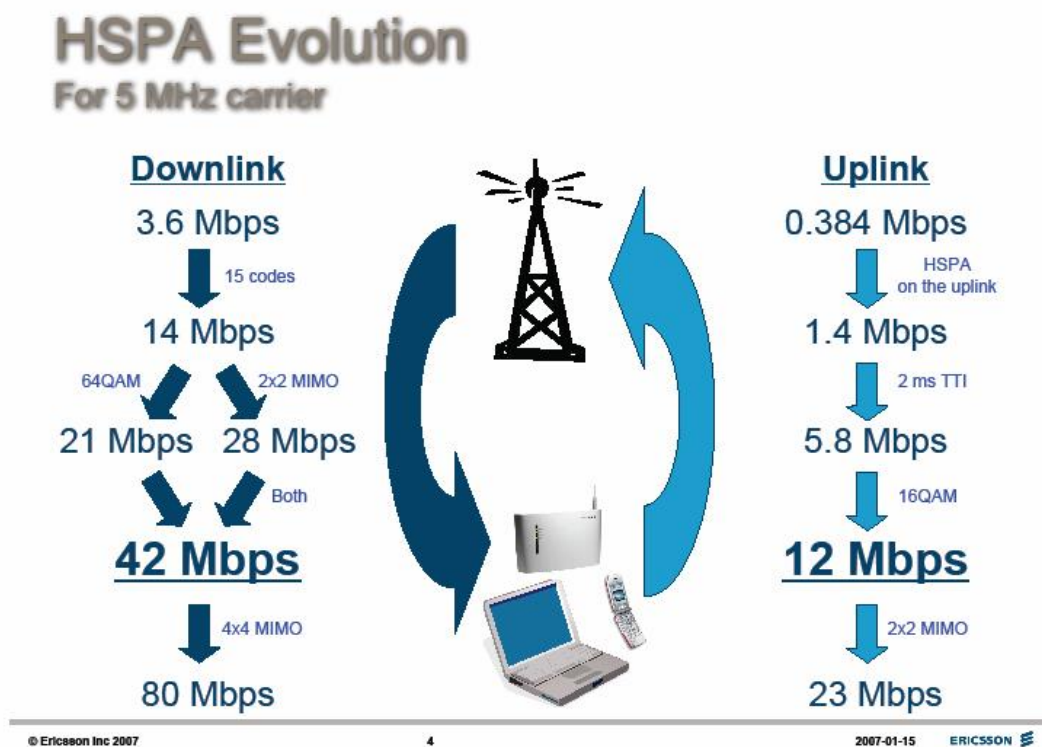
This evolution will result in the current peak downlink speed being boosted from 3.6M bit/sec to 42M bit/sec and eventually to 80M bit/sec. Downlink speeds will advance from

² Numbers as reported by operators. The subscription number the operators announce in e.g. quarterly and annual reports. In most cases, this figure is equivalent to the operators' registered subscriptions. Source: Estimates based on EMC, Wireless Intelligence, MII, TRAI, Anatel & CDG. Numbers will likely change as more information comes in.

0.384M bit/sec to 12M bit/sec and eventually 23M bit/sec. Please refer to Figure 1.
Editors Note: No timeframes were given for achieving any of these benchmark rates.

Ericsson had deployed 138 HSPA networks worldwide and is prepared to evolve them to LTE when that family of standards is set by 3GPP. LTE will provide 100M bit/sec of mobile access at the cell edge. As a result of this HSPA→LTE evolution and progress, Ericsson expects that these GSM based networks will have a much greater global market share than mobile WiMAX networks.

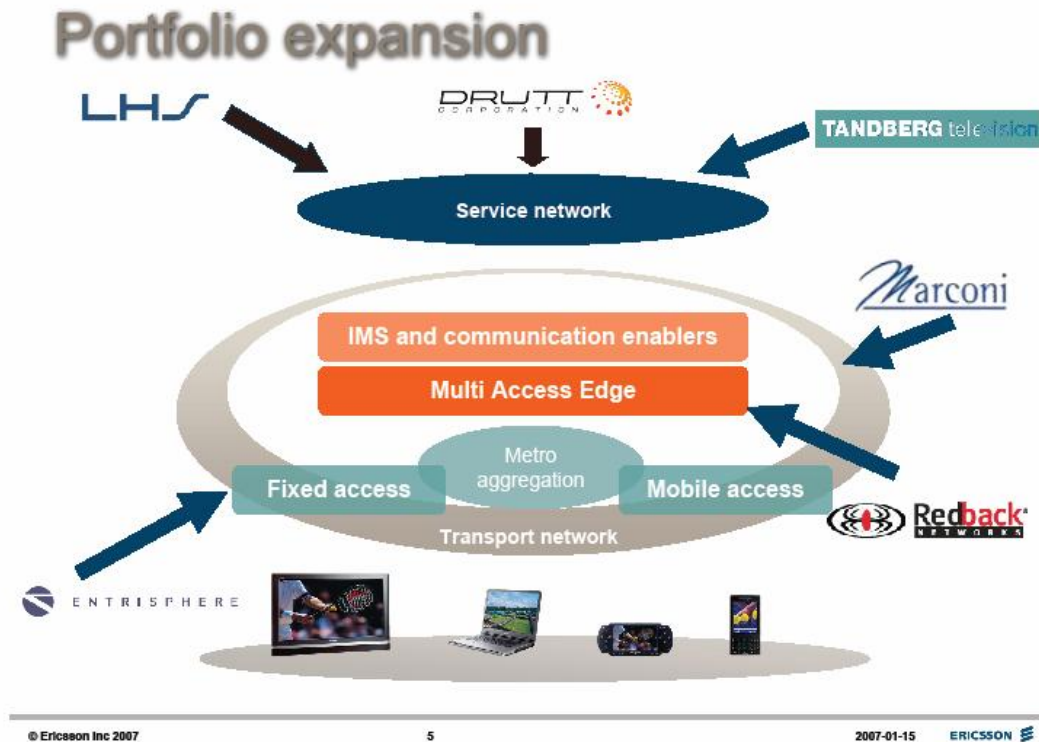
Figure 1. HSPA Evolution



Ericsson's Portfolio Expansion

Ericsson has gotten larger and stronger in the last few years. Ericsson intends to maintain its lead as the global leader in W-CDMA technology. But, to expand elsewhere, the company has made several acquisitions recently. These include fiber based/GPON transmission equipment (Entrisphere), multi-service access edge routing (Redback), and video services (Tandberg Television). They had previously acquired UK based switching and transmission vendor Marconi when that company fell on hard times after the dot-com bust. Their current portfolio of companies is shown in the layered diagram of Figure 2.

Figure 2. Ericsson's Portfolio of Companies is Expanding



Author's Note:

Please contact the author if you would like to establish a consulting arrangement with him to discuss other aspects of this excellent conference or evolving wireless networks.