UMTS Forum

Summary of Recent Activities 2010-2011

Jean-Pierre Bienaimé

Chairman, UMTS Forum

April 2011

Summary

- **UMTS Forum focus 2010-2011**
- **3G/3G+/LTE global market overview**
- **Recent reports and studies**
  - ***Delivering on the promises of IMT in C-Band***
  - ***Consumer Electronics meet mobile broadband***
  - ***Mobile Traffic forecasts 2010-2020 & UMTSF key messages***
- **Spectrum contributions to ITU, EC & CEPT**
- **Recent News announcements**

UMTS Forum 2010-2011 key focus areas

Key focus areas	
Spectrum & Regulation	**Mobile Broadband/LTE Ecosystem**
Advice to industry and administrations on 3G/LTE licensing & regulation	Study of LTE in conjunction with the Digital Home and Consumer Electronics
Global spectrum and spectrum arrangements for UMTS/IMT-2000 & IMT-Advanced	Roadmap and competitive benefits for HSPA, LTE and beyond – Global mobile traffic forecasts
Key Growth Markets	
Studies and workshops on mobile broadband and technical choices	Promotion of the use of mobile service allocations and Digital Dividend
Main activities	
Studies, Reports and White papers	
Communication and Promotion	
Visibility and participation at conferences, exhibitions, seminars and workshops	Relationships with regulators, administrations, international media and financial community
Contributions to international organizations (ITU, EC, CEPT/ECC, 3GPP)	
Partnerships with international bodies (ETSI, NGMN, GSMA, ICU, COAI, APT, 4GAs…)	

Nurturing the mobile broadband ecosystem *(1)*

➢ *Standards support and promotion:*

The UMTS Forum (UMTSF) provides **marketing, technical and spectrum inputs to standardization bodies (SDOs) such as ITU, CEPT and 3GPP,** notably indicating to those ones the needs of operators, and the benefits of open interfaces and of globally harmonized standards and spectrum bands. As an industry forum, UMTSF **promotes solutions defined by the SDOs**, in a way that can be understood by external audiences such as marketing teams, financial analysts, journalists,… UMTSF also provides market knowledge externally to aid rapid development and uptake of new services and applications.

➢ *Some success stories:*

- UMTS Forum became the **1st Market Representation Partner (MRP) in 3GPP** (Third Generation Partnership Project) **in 1998**, and will be **15 years old by end 2011…**

- UMTSF was a **major contributor for obtaining the 2.6 GHz IMT-2000 extension spectrum band** at World Radiocommunication Conference 2000 (WRC-00) in Istanbul, now allocated for LTE, and was instrumental in obtaining **Digital Dividend** and **C-band spectrum** for mobile at WRC-07 in Geneva

- UMTSF **traffic and spectrum forecasts** were contributing to WRC-07 at ITU-R, and were **integrated in April 2011 as a contribution to the next WRC-12 by ITU-R**

- The **750 m 3G/UMTS subscribers** milestone will be reached by end May 2011

Nurturing the mobile broadband ecosystem (2)

- ***Cross-sector organisation:***

  UMTSF has always mediated between the interests of operator and vendor communities (and also of administrations/regulators until recently), which gives great credibility to its contributions. For instance we have done a huge amount of work over the last decade in **forecasting data traffic levels as inputs to the ITU, 3GPP and CEPT**. Here our cross-sector make-up has given UMTSF a unique industry position with realistic, carefully-judged and consensual traffic forecasts.

- ***Shaping mobile broadband/LTE ecosystem:***

  This cross-sector philosophy has renewed relevance today, as mobile evolves **from a "classical" ecosystem to a more complex, diverse world**. UMTSF offers a "white space", where players in this evolving ecosystem can meet on neutral ground and share ideas for a **low membership fee.**

- ***Reports and studies:***

  UMTSF has published **more than 50 reports and studies**, of which the most recent ones give a first global insight of mobile broadband/LTE ecosystem evolution.

3G/UMTS mobile broadband: a global mass market

- Over **900m 3G subscribers** (UMTS + EVDO) worldwide

…in which almost **750m UMTS** subs, including almost **450m** HSPA subs, and over **160m** CDMA2000 EV-DO subs.

- Over **370** 3G/WCDMA networks (inc. **170** in Europe) in **150+** countries...

...in which over **345** HSPA networks,

and more than **100 HSPA+** networks launched

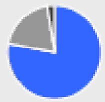
- Around **25** UMTS 900 networks launched
- And over **20 LTE networks** commercially launched

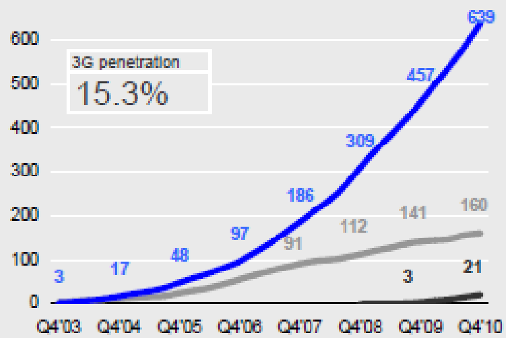
mobile broadband figures

3G subscribers – world

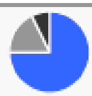
Breakdown of 3G subscribers by region

total	w-cdma	YoY growth
819.9m +36.2%	638.8m	+39.7%
	ev-do 160.4m	YoY growth +13.5%
	td-scdma 20.7m	YoY growth +507.5%

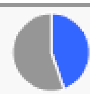




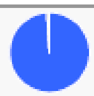
asia-pacific
w-cdma 219.0m
ev-do 52.4m



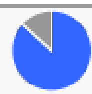
north america
w-cdma 77.2m
ev-do 95.5m



west. europe
w-cdma 198.6m
ev-do 2.3m

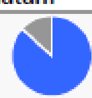


east. europe
w-cdma 55.1m
ev-do 0.8m

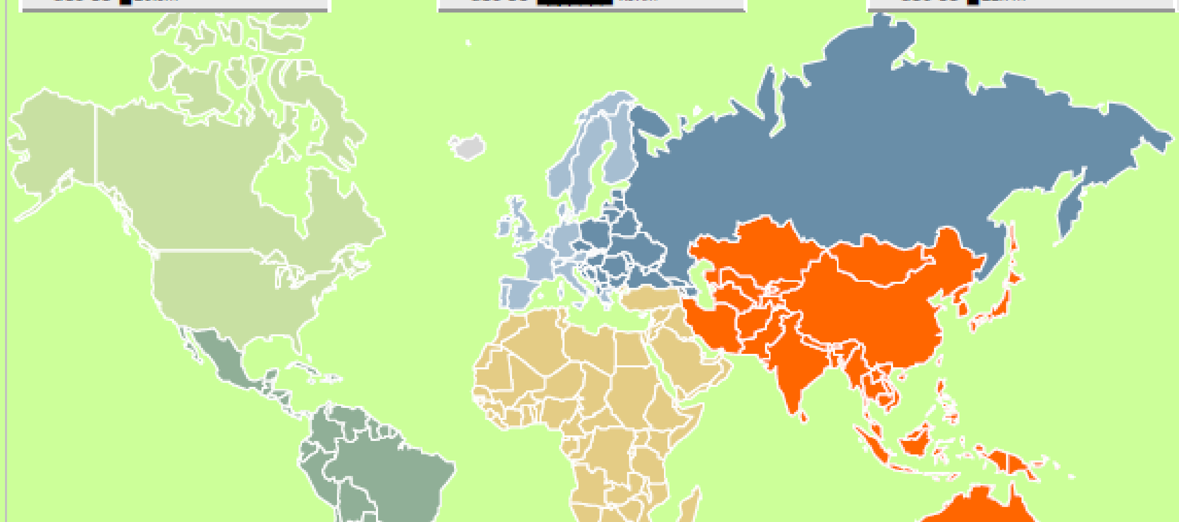


middle east, africa
w-cdma 50.4m
ev-do 3.7m

caribbean, latam
w-cdma 38.5m
ev-do 5.8m



Breakdown and evolution of W-CDMA/HSPA subscribers by region



north america

subscribers	YoY growth
55.1m	+41.5%

dec 10 55.1m
dec 09 38.9m
dec 08 26.6m

western europe

subscribers	YoY growth
198.6m	+27.6%

dec 10 198.6m
dec 09 155.7m
dec 08 116.1m

eastern europe

subscribers	YoY growth
77.2m	+53.6%

dec 10 77.2m
dec 09 50.3m
dec 08 22.7m

latin america

subscribers	YoY growth
38.5m	+138.8%

dec 10 38.5m
dec 09 16.1m
dec 08 4.8m

middle east & africa

subscribers	YoY growth
50.4m	+50.6%

dec 10 50.4m
dec 09 33.5m
dec 08 17.8m

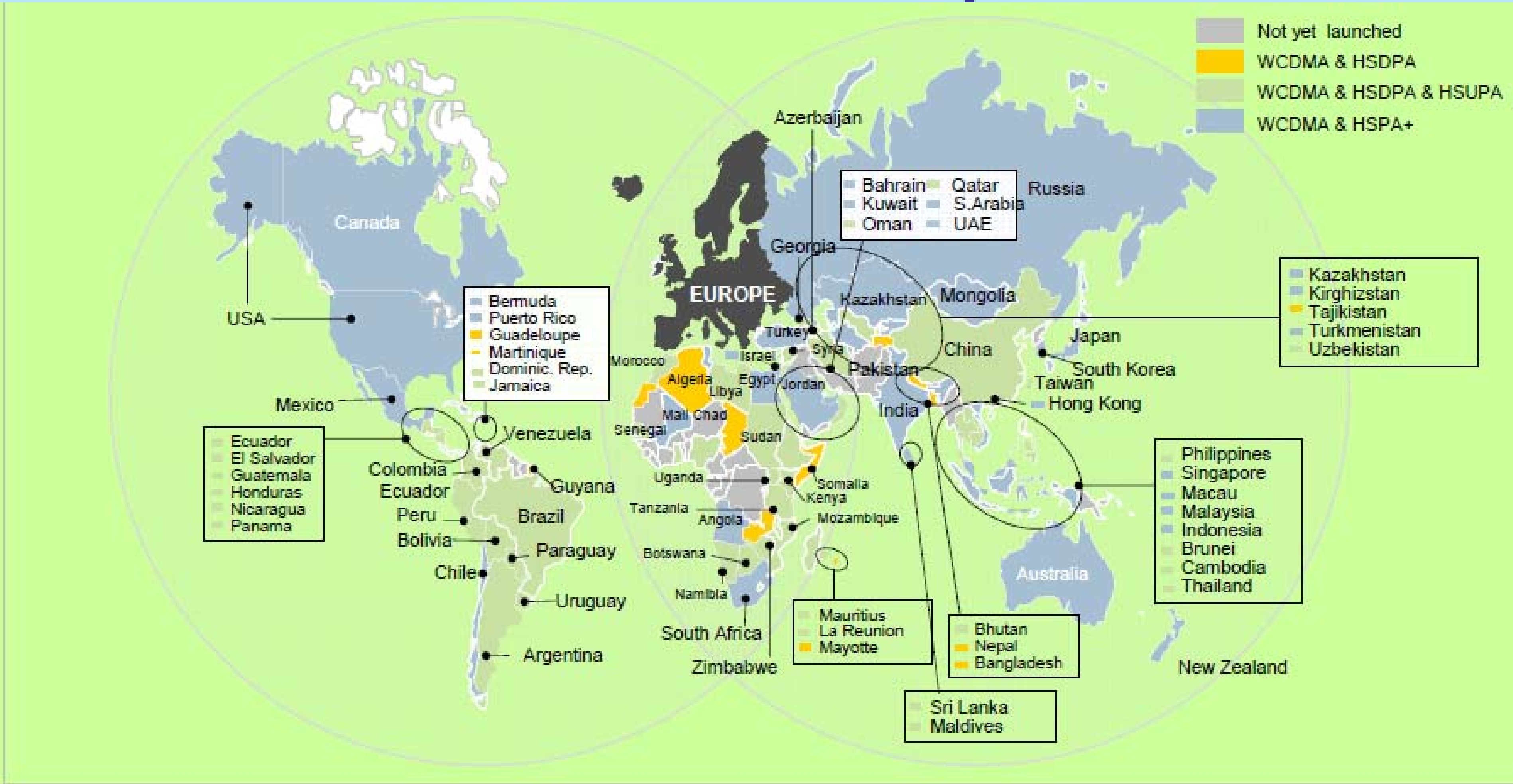
asia-pacific

subscribers	YoY growth
219.0m	+34.5%

dec 10 219m
dec 09 162.9m
dec 08 120.7m

Source: Informa for W-CDMA figures, CDG/Sofrecom for EV-DO figures (March 2010). Subscribers bars at scale for one region, not for regions comparisons.

3G/UMTS Mobile broadband networks W-CDMA & HSPA map - World



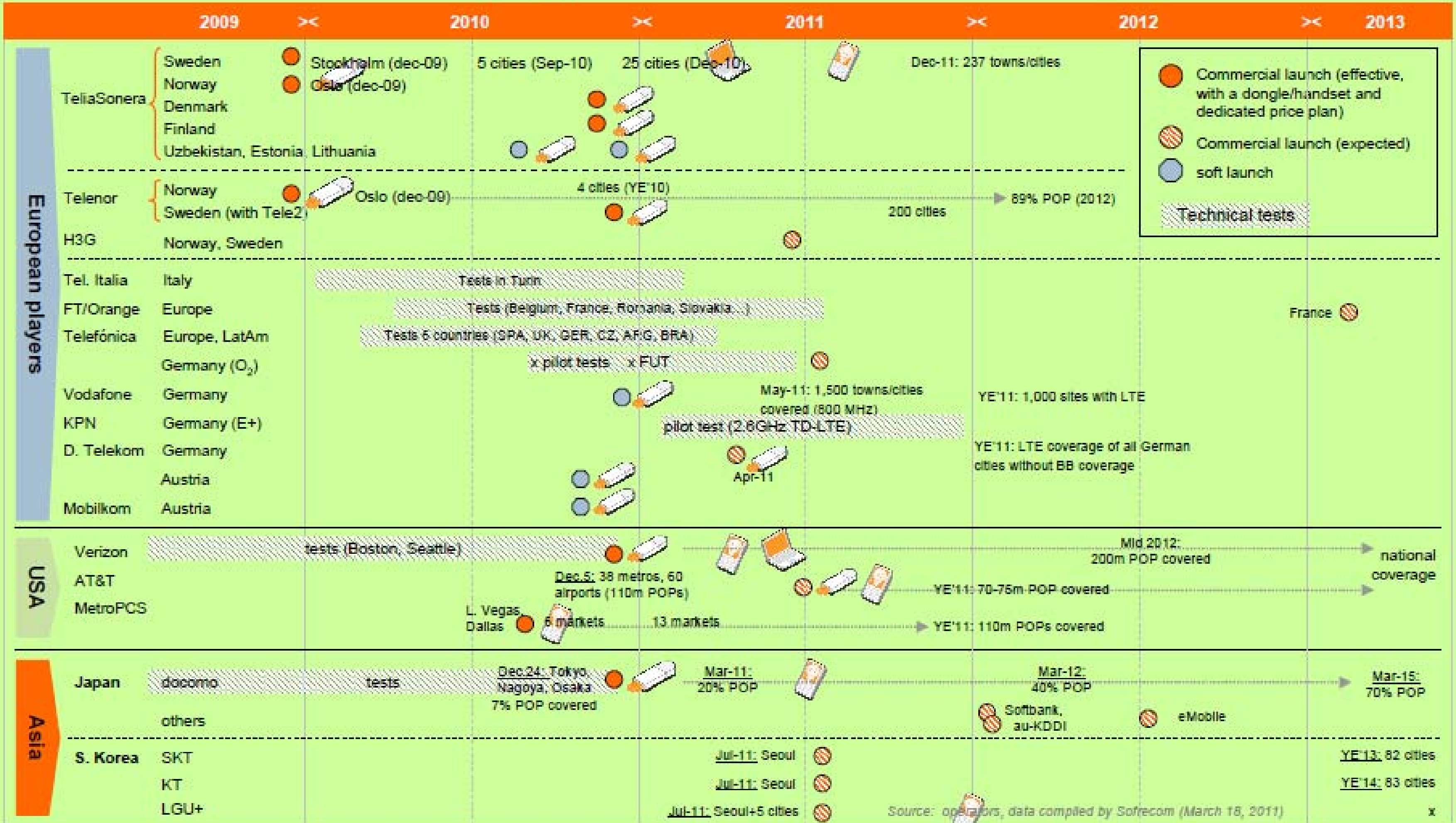
Source: 3GAmericas, GSA, data compiled by Softecom (March 2011)

promoting mobile broadband evolution

UMTS Forum

mobile broadband deployments

LTE deployments – roadmap



promoting mobile
broadband evolution

UMTS Forum

2G/3G/4G Technologies compared

	Technology	Carrier BW	UL Peak Data Rate	DL Peak Data Rate	Latency	Spectrum (MHz)	Peak Spectral Eff. (Bit/s/Hz)
2G	GSM / GPRS EDGE (MCS-9)	200 kHz	56 Kbps 118 Kbps	114 Kbps 236 Kbps	500 ms 300 ms	900/1800	0.17 0.33 EDGE
	W-CDMA	5 MHz	384 Kbps	384 Kbps (2 Mbps)	250 ms	900/1800/ 2100/2600	0.51
	HSPA	5 MHz	5.7 Mbps	14 Mbps	~70 ms	DD/900/ 2100/2600	2.88
3G	HSPA+ (16 QAM) (64 QAM + Dual)	5 MHz	11.5 Mbps	~28 Mbps (42 Mbps)	~30 ms	DD/900/ 2100/2600	12.5
	LTE (Rel.8) (2x2 MIMO)	var. up to 20 MHz	~75 Mbps	~150 Mbps @20 MHz	~10 ms	DD/900/1800/ 2100/2600	16.32
	WiMax IEEE 802.16e	10 MHz	70 Mbps	70 Mbps 134 Mbps	~50 ms	2600/3500	3.7
4G	LTE-Advanced*	var. up to 100 MHz	>500 Mbps	>1 Gbps	<5 ms	IMT	DL: >30 UL: >15
	"IMT-Advanced"	var. up to 100 MHz	270 Mbps 675 Mbps	600 Mbps 1.5 Gbps	<10 ms	IMT	DL: >15 UL: >6.75

Source: UMTS Forum

LTE drivers for Mobile Network Operators

➔ **Increase ARPU:** with higher monthly caps and DL data rates, MNOs should generate higher data ARPU

➔ Gain additional **capacity** and higher **throughput**

➔ **Change technology path**: CDMA2000 and Mobile WiMAX operators are converging towards 3GPP LTE…

➔ **Reduce the data cost structure** for operators already facing an explosion in mobile data traffic, especially owing to flat-rate or unlimited packages (this was the case for Telia in Sweden, in particular);

➔ **Opt for a completely new network** when the age and capacity of the core mobile networks would make expensive upgrades necessary;

➔ **Differentiation from the competition** on very active markets, rather like Verizon (USA), a CDMA EV-DO operator which needed to respond to competition from 3G+/UMTS (HSPA and HSPA+)

Sources: Orange, Idate, UMTS Forum

A growing TD-LTE Ecosystem

- **TDD & FDD versions of 3GPP LTE have strong similarities, and some manufacturers are building common FDD/TDD chipset platforms**

- **There is a global availability of TDD spectrum: 2.3GHz was recently allocated for BWA in India**

- **Strong support of TD-LTE from leading mobile operators, of which China Mobile is a big promoter (Shanghai World Expo first demos in June 2010), recently joined by Yota (Russia) and by Sprint/Clearwire (USA) as well as significant BWA actors in India**

LTE adopted Business Models

- **« Classical » LTE model** - offloading/capacity requirement: *JV « Net4Mobility » Tele2 / Telenor:* expanding network capacity
- **Mobile broadband centric solution -** *Telia Sonera, Telekom Austria, Verizon:* offering high speed mobile BB services
- **FWA and substitution of Unbundling Local Loop -** *Vodafone Germany, O2 Germany:* offering stationary BB via LTE modems (FWA)
- **Phasing out DSL via more efficient networks -** *Deutsche Telekom:* providing BB services in rural areas / small cities
- **Niche services / Targeted B2B2C -** WAN for backhaul solutions /offload data; solutions for automotive industry, travel & transportation,…
- **Wholesale LTE model** – for MNOs and SPs: *Lightsquared (USA: LTE/satellite), Yota (Russia), Clearwire (USA):* reselling data traffic to interested parties via LTE network; solutions for MNOs for access to rural areas and lower Capex, MVNOs, Service providers

Source: Sofrecom

Recent UMTS Forum Reports and Studies

- ***"Delivering on the promises of IMT in C-band: key findings on C-band spectrum usage"* – July 2010**
- ***"From HSPA to LTE & beyond: Recognising the promise of mobile broadband"* - July 2010**
- ***"Two worlds connected: consumer electronics meets mobile broadband"* - February 2011**
- ***"Mobile traffic forecasts 2010-2020"* – February 2011**

Delivering on the promises of IMT in C-band

- **The 3400-3800 MHz band is the key band in the near future for the advent of 4G, with LTE-Advanced as its forefront.** The benefits of 4G to customers, citizen and society, will only materialize if the appropriate frequency channels are available for the deployment of 4G systems, i.e. channel bandwidth of 40 and up to 100 MHz (*Minimum 2x20 MHz for FDD and 40 MHz for TDD. Up to 2x50 MHz for FDD and 100MHz for TDD).*

- Currently, the 3400-3800 MHz band is shared by multiple systems ranging from Broadband Wireless Access Systems, Fixed Links and satellite services. **The UMTS Forum commissioned a study to identify the current usage of the band and the opportunities to open the band for 4G networks** in a representative number of countries in Asia, Africa and South-America.

C-band report key findings

- **The usage of satellite services in the band is clustered geographically as well as in frequencies**. The main satellite deployments occur in the 3600-3800MHz band, in specific countries suffering from heavy rain.

- **The specific benefits of the C-band for satellite services have drastically diminished since WRC-07** with the rise of alternative satellite services in the Ka and Ku bands due to their improved performance. In effect, the C-band only remains attractive for hemispheric or continental satellite services, that is mainly Earth Stations on board Vessels (ESVs) services for trans-oceanic operations.

- **Fiber connectivity is increasing around the globe**, providing in many countries an alternative to many satellite services traditionnally held in the C-band for internet access. Fiber connectivity is likely to increase speed, improve reliability and reduce the cost of internet access.

- **Sharing of the 3400-3800 MHz band can be managed between IMT and large Fixed Satellite Services (FSS) earth stations, but may be challenging** when co-existing with Very Small Aperture Terminals (VSAT), Television Receive-Only (TVRO) and Satellite News Gathering (SNG) devices. These challenges could seriously hamper the prospect of IMT-Advanced delivering its full benefits in the band.

Proposals for LTE Advanced in C-band

Based on these decisive findings and its own technical expertise, the UMTS Forum proposes the following guidelines in order to enable the rise of LTE Advanced services:

- **The 3400-3800 MHz should be considered as the key band in order to provide mobile broadband 4G services to citizen and society.** Minimum channel bandwidth of 40 MHz should be adopted, preferably allowing up to channel bandwidth of 100 MHz.
- Countries and regions should work together in order to agree on a global, or at least regional, **harmonized band plan for IMT systems in 3400-3800 MHz.**
- Such international band plan should allow the introduction of IMT systems independently in sub-bands 3400-3600 MHz and 3600-3800 MHz, allowing individual countries to introduce IMT according to their own timeline and respecting their potential need for continued satellite services in the band.
- **Countries should target the total availability of sub-bands (i.e. 3400-3600 and/or 3600-3800 MHz) for IMT services**. Specifically, countries should assess the possibility to relocate satellite services in higher bands such as the Ka (17-31 GHz) or Ku (12-15 GHz) bands. Sharing of the 3400-3800 MHz band between satellite and IMT services will not enable a satisfactory 4G service

“Consumer Electronics meets mobile broadband”: study objectives

This study investigates the relationship of the mobile industry with Consumer Electronics with a special focus on LTE

- At the heart of the research were 30 in-depth interviews with players across industry segments, value chains and geographies
  - Fixed, mobile and integrated operators from around the world
  - Manufacturers of different kinds of CE
  - Infrastructure and chipset vendors
  - Other players including auto equipment makers, media companies and regulators
- Issues investigated included state of the CE industry and in-home connectivity, devices likely to be connected and how, the impact of CE devices on the mobile industry, the relative merits of air interface standards perceived, as well as the role of regulators.

Key Findings

1. **No doubt CE is becoming connected**
   – Consumer Electronics industry in flux: “Connect or Perish”

2. **CE devices* not main driver for mobile broadband**
   – At least not in short-medium term

   * Other than notebooks and mobile phones

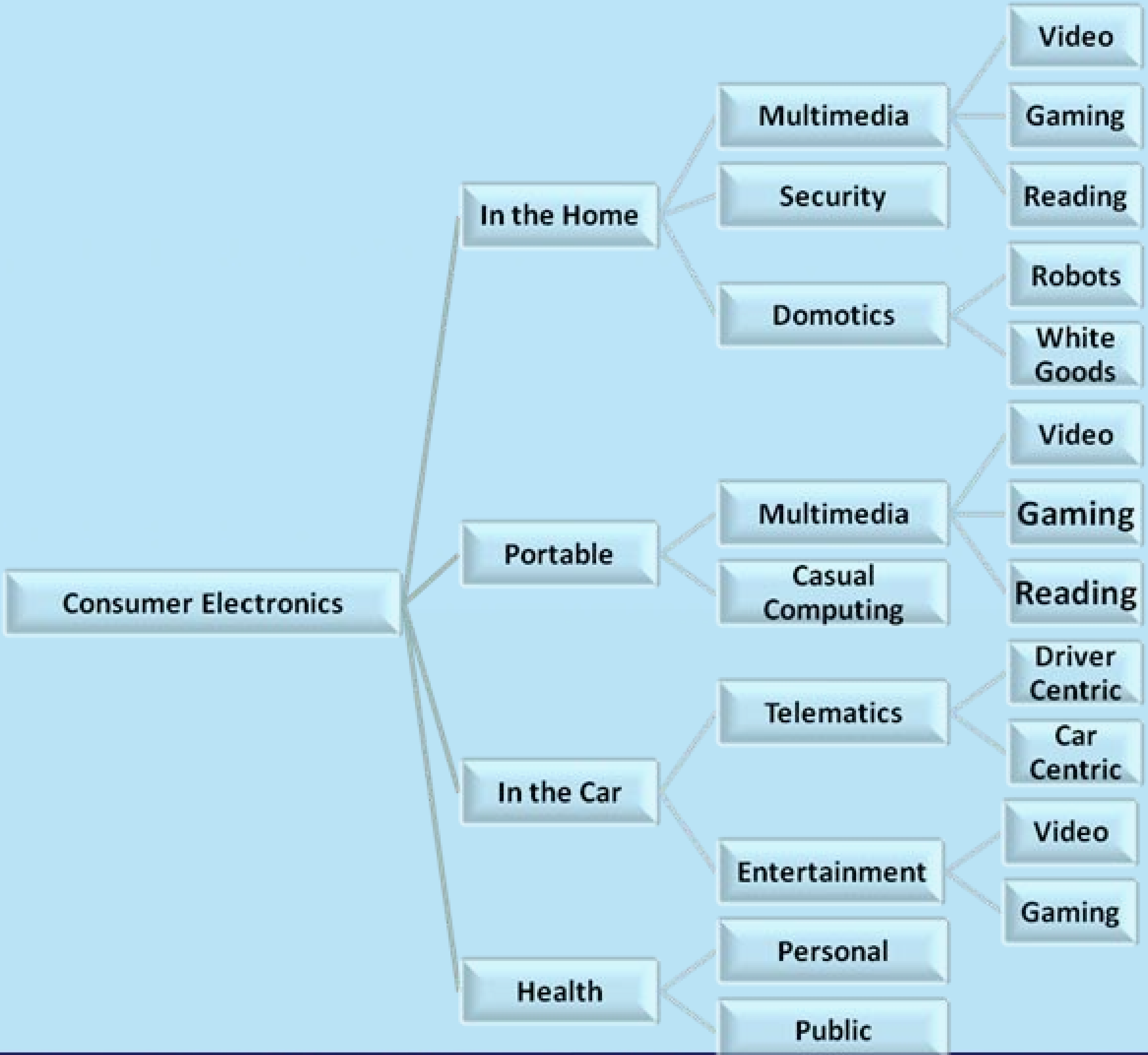
3. **Mobile broadband enabled devices largely support mobile usage**
   – WiFi to remain dominant access technology in homes

4. **Cloud- and media server-based solutions will coexist**
   – Cloud appears to have more wide-spread momentum currently

5. **Business model very much the key barrier to mobile broadband enabled CE devices on a large scale**
   – Other perceived barriers to ubiquitous mobile broadband include market fragmentation, LTE chip prices, need of clear value proposition for LTE to be understood by CE players

6. **Connected CE Devices worldwide should reach 1 billion in 2016**
   – Faster growth than the overall wireless market
   – North America and Japan are the leading LTE markets in the short term

Mobile Broadband CE Taxonomy

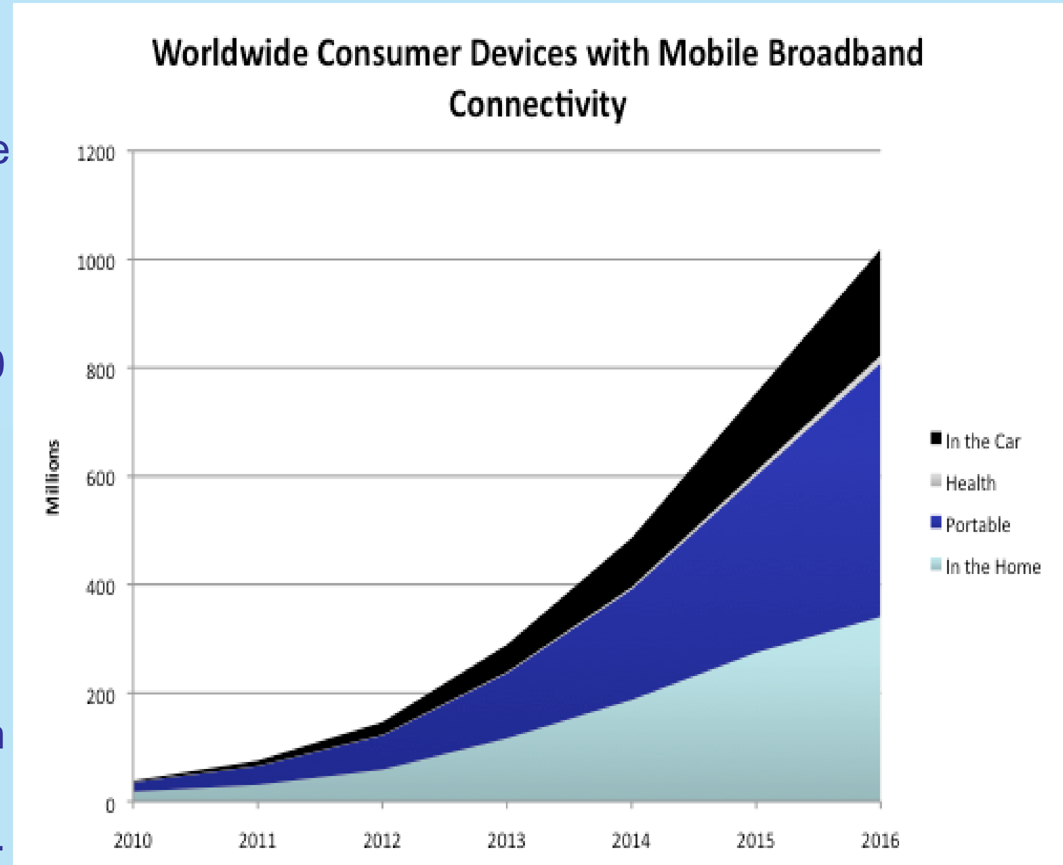


- **Four major categories, with some applications overlap**
  - Portable devices may be used in the home or in the car
  - Healthcare devices may be used anywhere
  - Automotive devices are dedicated to the car

New classes of CE devices connect wirelessly

There will be at least a billion consumer electronics devices directly connected to GSM-family mobile broadband networks by 2016, with good upside potential

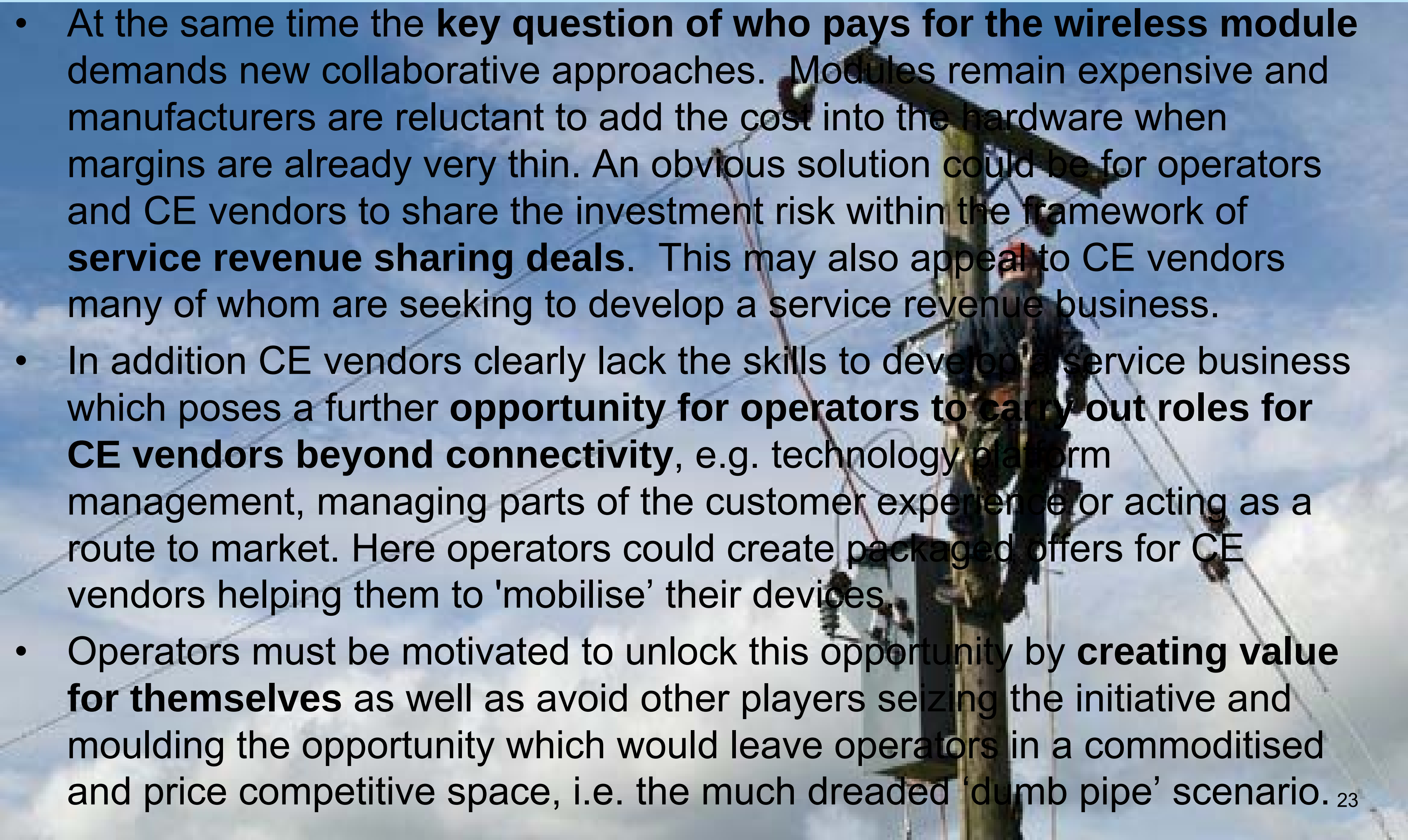
- Though **portable devices** will represent the lion's share of these billion devices, more than a third will be designed primarily for **in-home use**, such as home robots, security, or multimedia.
- The promise of in-car entertainment and telematics will finally be fulfilled by new generation networks, with more than **200 million cars connected to mobile broadband networks by 2016**
- The connected CE device market will be much more fragmented into vertical specialties than has been the handset market, with **mobile broadband enabling new classes of devices**, such as connected tablets, augmented reality games, robots or tele-presence systems.



Call for Action: Operators (1)

- This research and particularly the interviews carried out across a wide range of players very much affirmed the notion that operators need to stimulate the development of mobile enabled CE, rather than expect much drive from CE vendors. Hence **operators need to regain their pivotal role in the ecosystem** or otherwise the ecosystem may never thrive.
- Though clearly traffic is linked to the existence of compelling content and applications, at the same time the single biggest **critical investment is in the network**, without which the content and applications would remain inaccessible.
- Clearly, operator “walled garden” approaches have failed to muster consumer enthusiasm, and so if operators wish to regain the initiative, it is probably by following exactly the opposite tack that they may succeed: **becoming agents of openness**, or in other words enabling the federation of devices and content from many different sources.
- This approach does not exclude **wholesaling of traffic to specialised MVNOs**, on the contrary: being the easiest operator to work with, armed with the best customer management systems, for a range of MVNOs can bring a synergistic range of services to the operator’s portfolio.

Call for Action: Operators (2)



- At the same time the **key question of who pays for the wireless module** demands new collaborative approaches. Modules remain expensive and manufacturers are reluctant to add the cost into the hardware when margins are already very thin. An obvious solution could be for operators and CE vendors to share the investment risk within the framework of **service revenue sharing deals**. This may also appeal to CE vendors many of whom are seeking to develop a service revenue business.
- In addition CE vendors clearly lack the skills to develop a service business which poses a further **opportunity for operators to carry out roles for CE vendors beyond connectivity**, e.g. technology platform management, managing parts of the customer experience or acting as a route to market. Here operators could create packaged offers for CE vendors helping them to 'mobilise' their devices.
- Operators must be motivated to unlock this opportunity by **creating value for themselves** as well as avoid other players seizing the initiative and moulding the opportunity which would leave operators in a commoditised and price competitive space, i.e. the much dreaded 'dumb pipe' scenario.

Mobile Traffic forecasts: Main trends (1)

► **Mobile voice overtaken by mobile data at 2009, in terms of traffic generated on mobile networks.** Mobile voice traffic growth is expected to remain limited compared to the explosive growth in data traffic from 2010 to 2020.

► Currently **mobile data traffic generated by mobile broadband [1] subscribers is taking off.** In Nov 2010, one Scandinavian operator indicated that average:

- ► 3G smart phone user: 375 MB/month → 12 MB/day
- ► 3G broadband user (e.g. via HSPA data card): 5 GB/month →167 MB/day
- ► LTE consumer (data card usage only) : 15 GB/month → 500 MB/day

► In the US, one mobile operator announced an average data of 7 GB per month for a base of 2 million subscribers in July 2010.

► **Growing number of mobile devices** such as tablets, dongles, smartphones and connected devices

(1) By "Mobile Broadband", the UMTS Forum refers to subscriptions and devices using technologies that can offer 3G bitrates (or higher, such as HSPA, HSPA+ and LTE). In this context, GSM and GPRS are not considered as Mobile Broadband technologies

Mobile Traffic forecasts: Main trends (2)

► The LTE ecosystem is developing rapidly as LTE took off in year 2010 and LTE-Advanced is planned for 2015 according to time to market expectations.

► In 2010, the machine-to-machine (M2M) market already represents 53 million modules. M2M will continue to grow significantly. However in the future, the main contribution for mobile traffic will come from other devices.

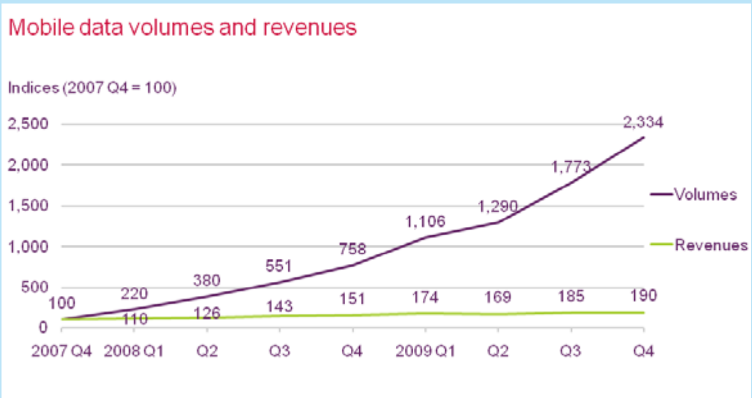
► **Small cells and Femtocells are becoming the solutions** of choice for increasing network capacity.

► **Social networking** has become very important for mobile users and now represents new consumption patterns and generates significant traffic.

► **Video has become increasingly important and is the No.1 source of data traffic.** TV content provision by Internet also generates data traffic on mobile networks.

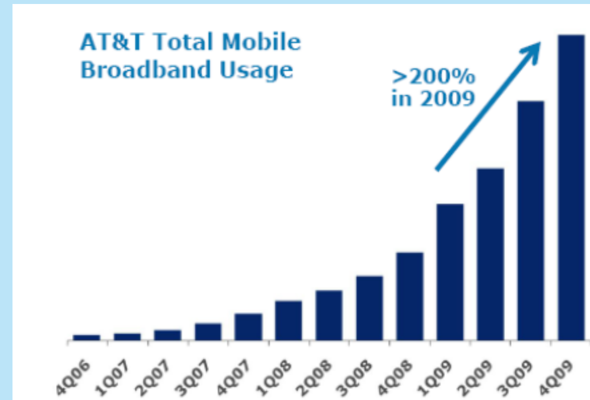
The dramatic growth of data traffic

UK mobile data traffic growth



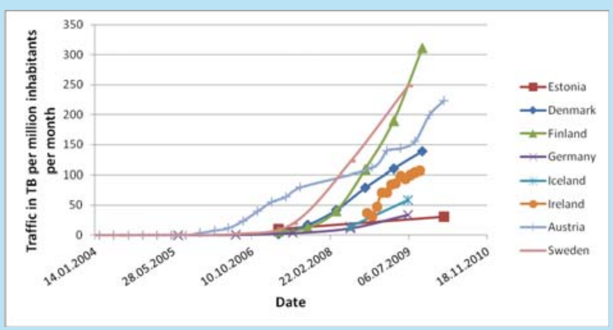
Source: Ofcom

AT&T traffic evolution



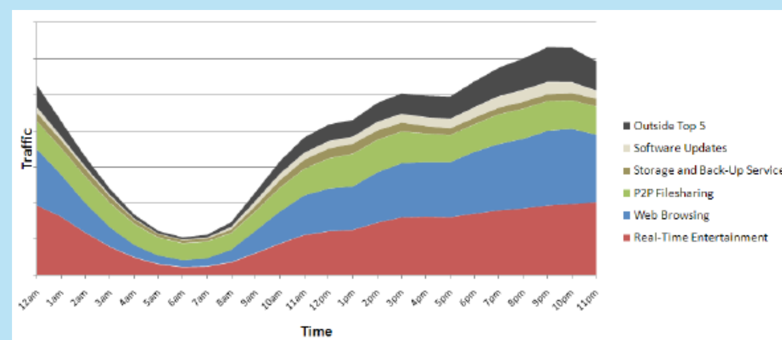
Source: AT&T

Mobile data traffic evolution (TB per million inhabitants per month) in some European countries



Source: ECC PT1

Daily traffic consumption in Europe

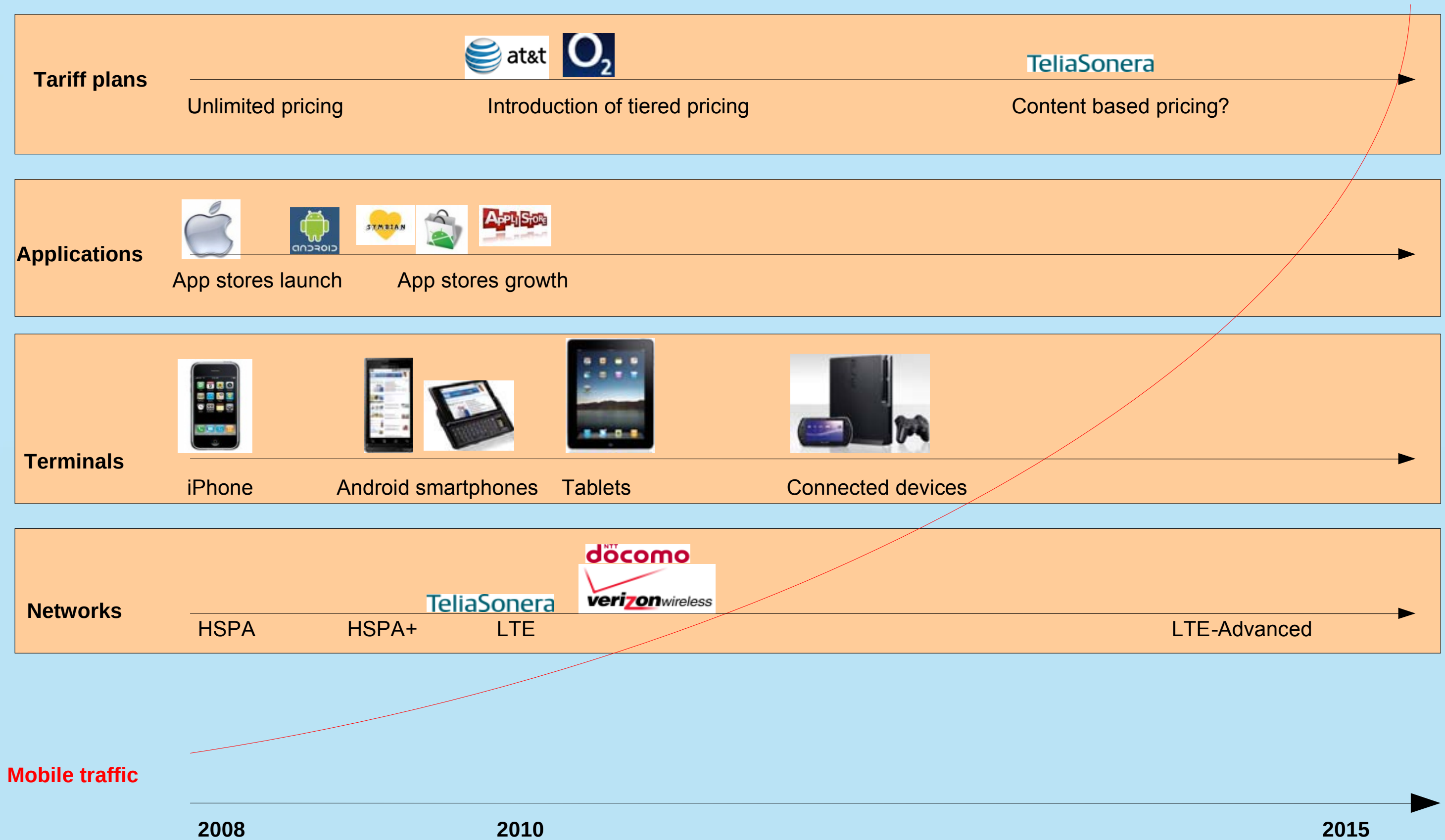


Source: Sandvine

Drivers (1/2)

Main changes compared to 2005 findings:

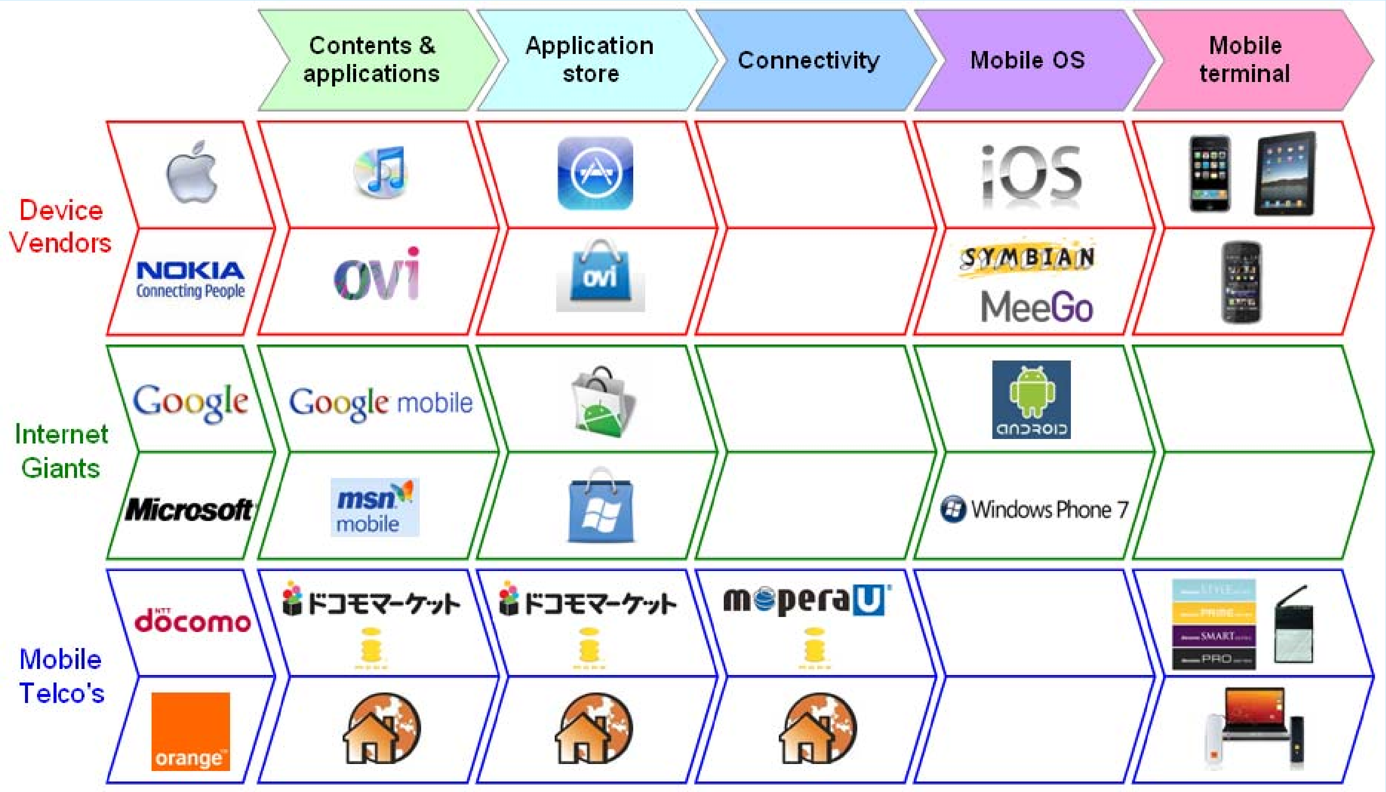
- ►New devices: tablets & other connected devices
- ►Evolutions of the mobile value chain



Enablers of mobile Internet

Drivers (2/2)

Evolution of the mobile value chain



Source: IDATE / UMTS Forum

The arrival of Internet and PC actors in the mobile sector

- Apple with the iPhone and the AppStore concept
- Google launching the Android Operating System

Mobile traffic forecasts 2010-2020 (1)

Main hypothesis

In this report, mobile traffic forecasts represent:

►The uplink and downlink traffic for voice and data transported on using licensed spectrum
►Traffic forecasts include the traffic managed by Femtocells
►Wi-Fi offloading is not taken into account* nor RFID traffic or any other traffic on unlicensed frequency bands

* Wi-Fi or any type of traffic offloading on unlicensed spectrum relates, by essence, to stationary wireless broadband access. It implies some usage restrictions/limitations on the quality, mobility and security of the service. As such, Wi-Fi is a ‘second choice’ solution to a primary mobile broadband access. The two access methods (mobile broadband and stationary wireless broadband) are complementary, not competing. There will always be applications that work reasonably well in best effort, while many others will need QoS. This Report clearly focuses on mobile broadband - that is, not stationary wireless broadband - and therefore Wi-Fi traffic was excluded from this Report.

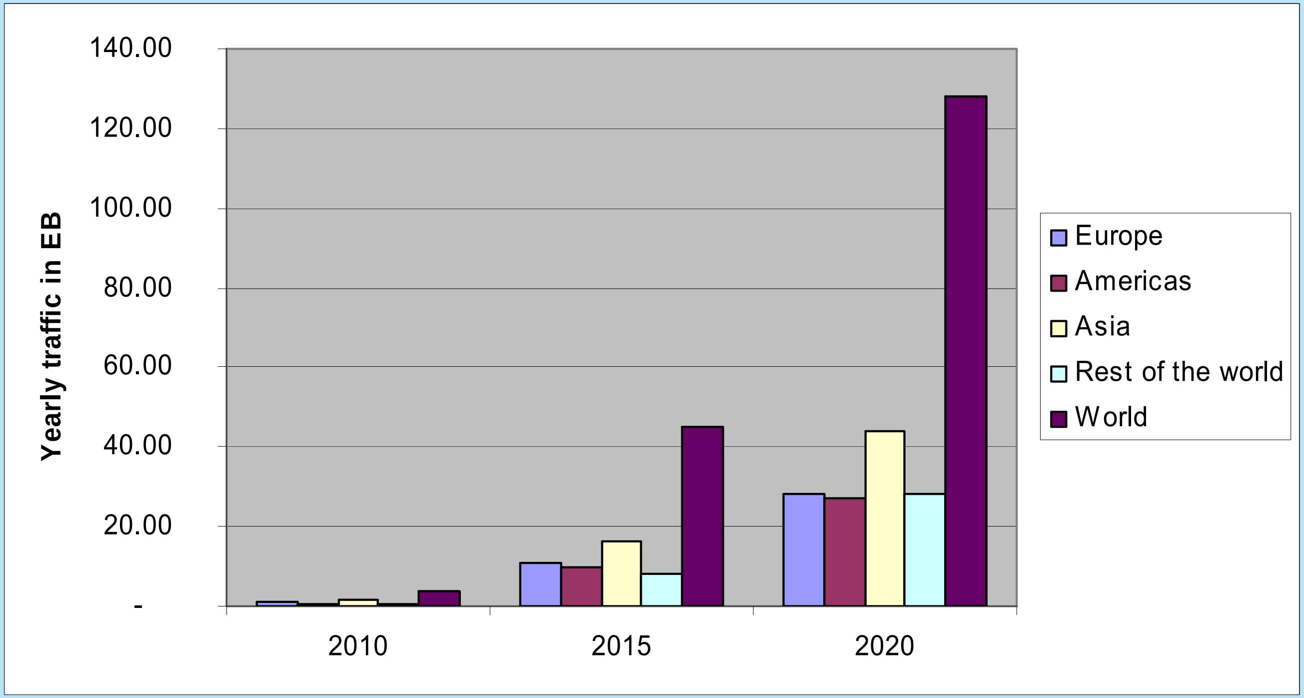
Global mobile subscriptions forecasts (including M2M):

Global Base (million)	2010	2015	2020
Europe	1 033	1 222	1 427
Americas	915	1 166	1 437
Asia	2 579	3 825	4 957
Rest of the world	801	1 276	1 863
World	5 328	7 490	9 684

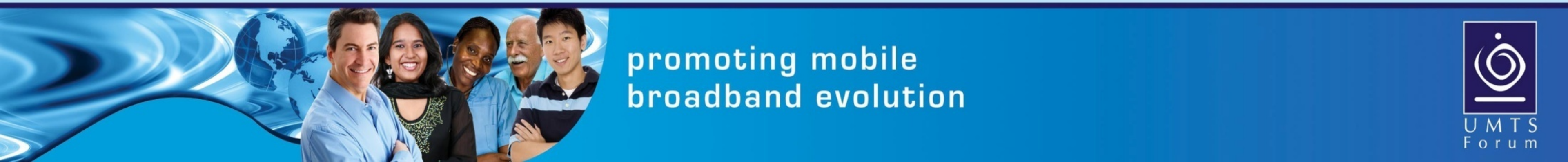
Mobile traffic forecasts 2010-2020 (2)

Total worldwide mobile traffic will reach more than 127 EB in 2020, representing a 33 times increase compared with 2010 figure.

Total mobile traffic (EB per year)



Source: IDATE



Mobile traffic forecasts 2010-2020 (3)

In 2020, daily traffic per Mobile Broadband subscription [1] in the representative Western European country will stand at 294 MB as an average and at 503 MB for dongles only.
Finally, we anticipate total worldwide mobile traffic of 351 EB in 2025 representing a 174% increase compared to 2020.

Daily mobile traffic per subscription	2010	2015	2020
Mobile Broadband (MB per day)	**10**	**155**	**294**
Dongles (MB per day)	**26.7**	**265**	**503**

[1] According to the model used in this report, users of Mobile Broadband (MBB) subscriptions with high-end smartphones and dongles will represent 31% of the subscriptions in 2020 and 63% of the mobile traffic

Mobile traffic forecasts 2010-2020 (4)

From 2010 to 2020, **total daily mobile traffic** in a representative Western European country will grow **67 times** from 186 TB to 12540 TB.

Total daily mobile traffic	2010	2015	2020
Representative Western European Country (TB per day)	**186**	**5,098**	**12,540**

► Significantly, at least 80% of the traffic volume remains generated by users, leading to large variations of the total mobile traffic both in terms of time and space variations of traffic.

► **Future mobile networks must be designed to cope with such variation of traffic and uneven traffic distribution, while at the same time maintaining a permanent and extensive geographical coverage in order to provide continuity of service to customers. *LTE is seen as a solution to congestion and saturation network issues in dense areas.***

► These opposite constraints are some of the most significant future challenges for operators.

Source: UMTS Forum

UMTS Forum key Messages

- The UMTS Forum believes strongly that **all identified IMT spectrum should be made available as soon as possible for mobile broadband usage in all countries**
- At the forthcoming World Radiocommunication Conference **(WRC-12), the UMTS Forum will be supporting the adoption of an Agenda Item (AI) for the next WRC in 2016**. In particular, we are arguing on behalf of the cellular industry – and related industries – that WRC-12 should open **a 4-year study** cycle to examine in detail the **future spectrum requirements for mobile broadband**. This in turn should lead to the adoption of an **appropriate decision at WRC-16.**
- In the UMTS Forum we don't want to prejudge the outcome of this study cycle. As such, we cannot be specific about the position it will defend for WRC-16. In any case the UMTS Forum supports not only the **timely availability of spectrum but also harmonisation in general, when possible on a global basis.**

Spectrum contributions to ITU, EC & CEPT

- **Digital Dividend/700MHz band plan in Asia:** UMTS Forum has successfully contributed to the definition by the APT/AWF of a band plan for the Digital Dividend in Asia (ITU Region 3). We promote the importance of harmonization for the availability of terminals as well as compatibility between regional band plans.
- **Preparation of WRC-12:** with its Mobile Traffic Report 2010-2020, UMTSF is a main contributor to the ITU-R IMT-UPDATE report which details the mobile broadband current and expected traffic growth around the world. The Traffic Report was also an input to CEPT/ECC, as well as to EC Spectrum Policy Unit.
- **C-band/3400-3800MHz Harmonization:** the C-band study has been submitted to several international regulatory groups, including EC and CEPT/ECC, and is also relevant in the context of the WRC 12.
- **900MHz band:** UMTSF engaged discussions with the MIC in Japan in order to try to achieve harmonization of the Japanese 900 MHz band with the international 900MHz band.
- **L-band/1452-1492MHz:** new CEPT/ECC work group on potential opportunity for mobile broadband in the L-band. UMTSF will examine how this opportunity is linked to 3GPP, and especially if the definition of specific band aggregation is required in standards.

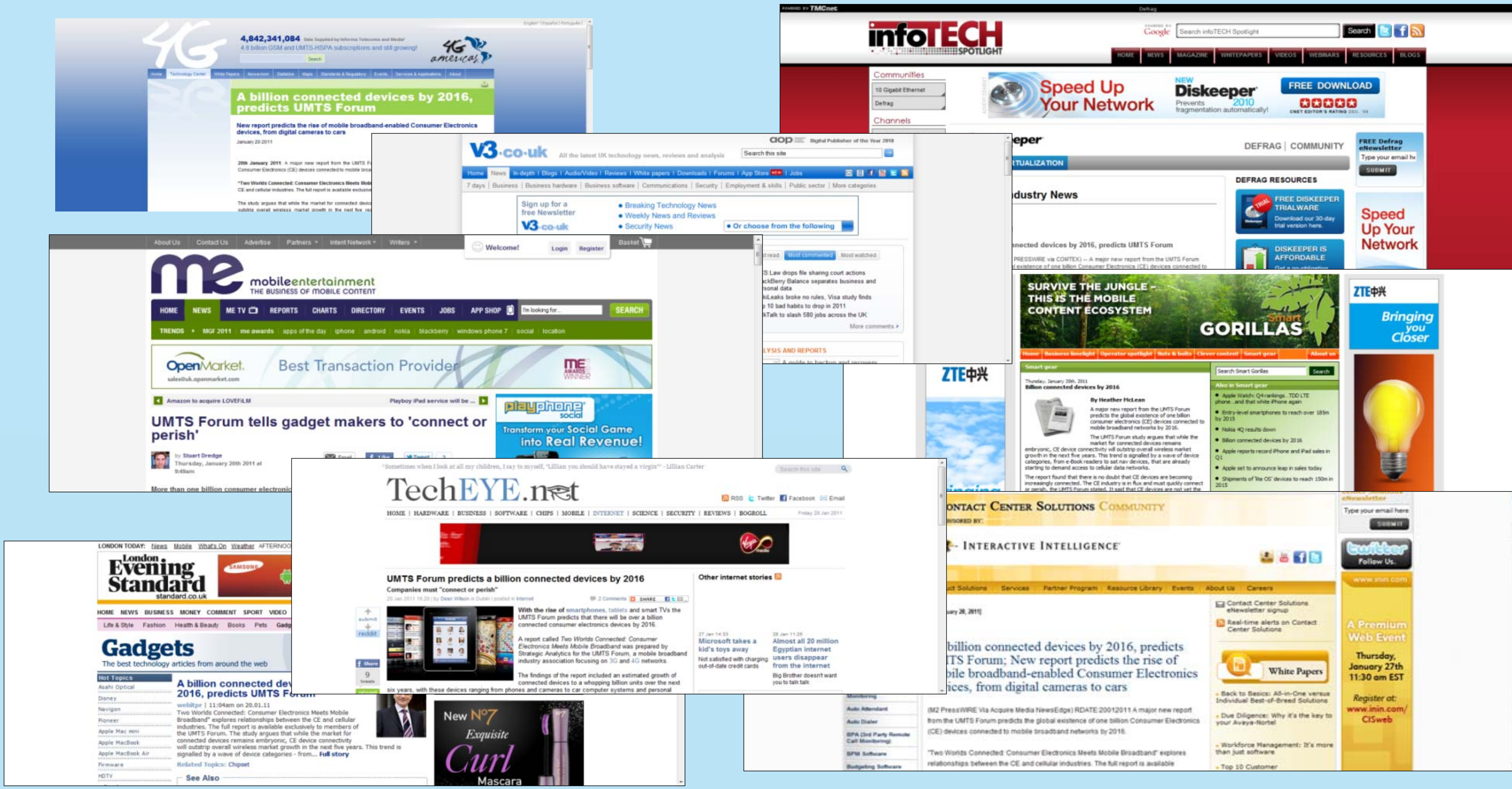
PR/external communications

The UMTS Forum continues to stimulate and react to the news agenda with regular press releases and media briefings.

Recent topics have included:

- ***3G/UMTS family welcomes its 500 millionth customer***
- ***Anatel opens up 2.6GHz for mobile broadband in Brazil***
- ***ITU decision marks 4G milestone***
- ***A billion connected devices by 2016, predicts UMTS Forum***
- ***33x growth in mobile traffic over next decade, predicts UMTS Forum***

One Billion Connected Devices by 2016 - Coverage



promoting mobile
broadband evolution

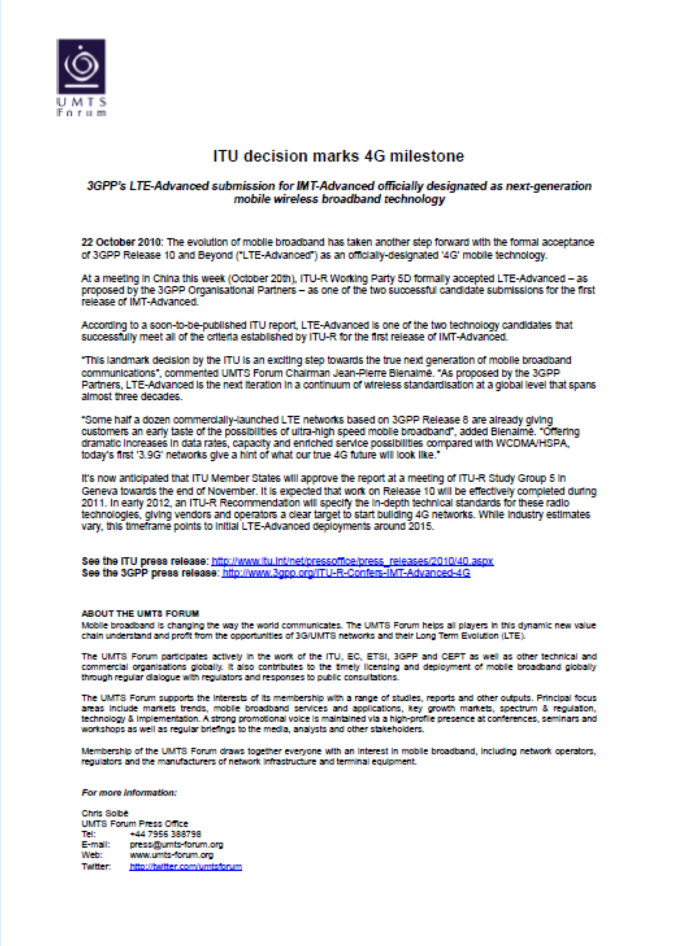
UMTS Forum

PR statement on LTE-Advanced designation as 4G mobile wireless broadband technology

Supports 3GPP contribution to IMT-Advanced process

"As proposed by the 3GPP Partners, LTE-Advanced is the next iteration in a continuum of wireless standardisation at a global level that spans almost three decades."

- **Press release issued 22 October 2010 at the ITU-R WP5D China meeting**



UMTS Forum

ITU decision marks 4G milestone

3GPP's LTE-Advanced submission for IMT-Advanced officially designated as next-generation mobile wireless broadband technology

22 October 2010: The evolution of mobile broadband has taken another step forward with the formal acceptance of 3GPP Release 10 and Beyond ("LTE-Advanced") as an officially-designated '4G' mobile technology.

At a meeting in China this week (October 20th), ITU-R Working Party 5D formally accepted LTE-Advanced – as proposed by the 3GPP Organisational Partners – as one of the two successful candidate submissions for the first release of IMT-Advanced.

According to a soon-to-be-published ITU report, LTE-Advanced is one of the two technology candidates that successfully meet all of the criteria established by ITU-R for the first release of IMT-Advanced.

"This landmark decision by the ITU is an exciting step towards the true next generation of mobile broadband communications", commented UMTS Forum Chairman Jean-Pierre Bienaimé. "As proposed by the 3GPP Partners, LTE-Advanced is the next iteration in a continuum of wireless standardisation at a global level that spans almost three decades.

"Some half a dozen commercially-launched LTE networks based on 3GPP Release 8 are already giving customers an early taste of the possibilities of ultra-high speed mobile broadband", added Bienaimé. "Offering dramatic increases in data rates, capacity and enriched service possibilities compared with WCDMA/HSPA, today's first '3.9G' networks give a hint of what our true 4G future will look like."

It's now anticipated that ITU Member States will approve the report at a meeting of ITU-R Study Group 5 in Geneva towards the end of November. It is expected that work on Release 10 will be effectively completed during 2011. In early 2012, an ITU-R Recommendation will specify the in-depth technical standards for these radio technologies, giving vendors and operators a clear target to start building 4G networks. While industry estimates vary, this timeframe points to initial LTE-Advanced deployments around 2015.

See the ITU press release: http://www.itu.int/net/pressoffice/press_releases/2010/40.aspx
See the 3GPP press release: http://www.3gpp.org/ITU-R-Confers-IMT-Advanced-4G

ABOUT THE UMTS FORUM
Mobile broadband is changing the way the world communicates. The UMTS Forum helps all players in this dynamic new value chain understand and profit from the opportunities of 3G/UMTS networks and their Long Term Evolution (LTE).

The UMTS Forum participates actively in the work of the ITU, EC, ETSI, 3GPP and CEPT as well as other technical and commercial organisations globally. It also contributes to the timely licensing and deployment of mobile broadband globally through regular dialogue with regulators and responses to public consultations.

The UMTS Forum supports the interests of its membership with a range of studies, reports and other outputs. Principal focus areas include markets trends, mobile broadband services and applications, key growth markets, spectrum & regulation, technology & implementation. A strong promotional voice is maintained via a high-profile presence at conferences, seminars and workshops as well as regular briefings to the media, analysts and other stakeholders.

Membership of the UMTS Forum draws together everyone with an interest in mobile broadband, including network operators, regulators and the manufacturers of network infrastructure and terminal equipment.

For more information:

Chris Solbé
UMTS Forum Press Office
Tel: +44 7956 388798
E-mail: press@umts-forum.org
Web: www.umts-forum.org
Twitter: http://twitter.com/umtsforum

UMTS Forum

For more information

www.umts-forum.org

twitter.com/umtsforum