

WELCOME



# Mobile market and traffic growth for the future

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Seminar on IMT towards 2020 and beyond

11 February 2014, Ho Chi Minh City, VIETNAM

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# Outline of the Presentation

## 1. Mobile broadband (MBB) global issues

- Mobile data traffic growth and the main drivers,
- Bell Labs Traffic Index Outcomes, 2012,
- Numerous Reports Show the Demand for Fast Data is Growing.

## 2. Existing studies containing market and traffic forecasts

- Report ITU-R M.2243,
- Report ITU-R M.2290.

## 3. Some indications for traffic around 2020 and beyond

## 4. The Supply-Side Elements to Address the Demand

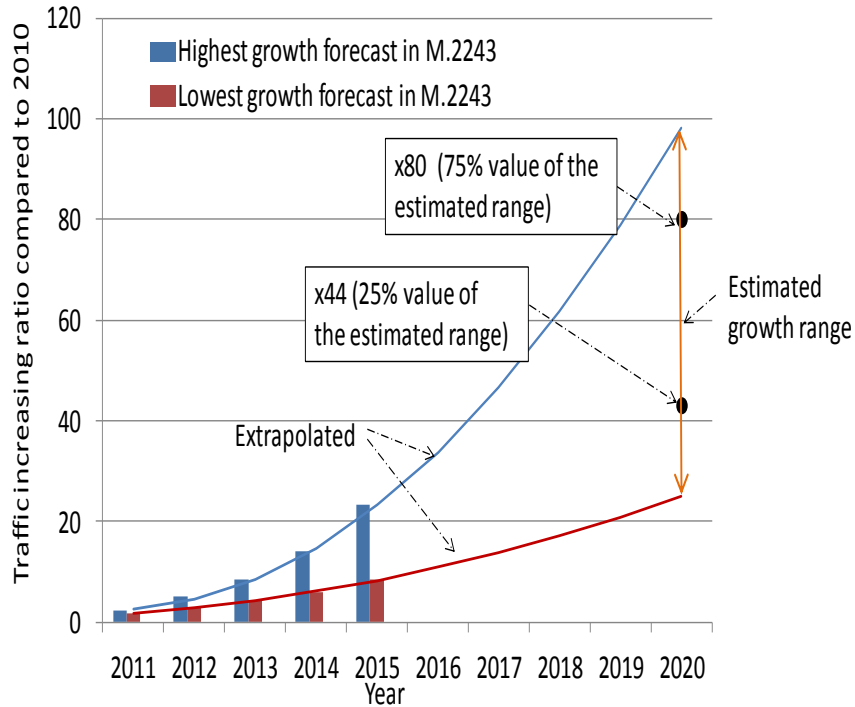
## 5. Conclusions

# Mobile Broadband (MBB) Growth

- “*Mobile broadband*” refers to mobile services using IMT technologies.
- Mobile communications has played a very positive role in the economic and social development of both developed and developing countries as shown in studies by the Broadband Commission\*.
- Mobile broadband has made it possible for innovative services and applications to be rapidly developed.
- Mobile broadband is an enabling technology that can support many applications on the same, always-on, access line; from voice to data, from sound to video, from wireline to wireless, and from location-based to global communication services.
- Today, rapid uptake of smart phones, tablets and innovative mobile broadband applications has increased the volume of mobile data traffic to an extent that was not taken into account in 2007 traffic forecasts.

\* <http://www.broadbandcommission.org>

# Mobile Data Traffic Growth



**37%** of Internet traffic during prime time is online video



<b>Video</b> ~ 70% of internet traffic by 2014	<b>Smartphones</b> 2.5 billion devices by 2015 32x increase per km <sup>2</sup>	<b>Mobile Internet</b> ~ 70% of mobile traffic by 2014	<b>Machine-to-Machine</b> 3x growth in the next five years
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**Mobile broadband networks are at the heart of this trend ...**

# The Main Drivers of Traffic Growth

- **Video** – The Bell Labs Traffic Index study of 2012 estimates that by 2016 video streaming and communications will account for almost 66% of all mobile traffic. This would represent a 5-year Compound Annual Growth Rate (CAGR) of 95%.
- **Device proliferation** – In 2011, shipments of tablets reached 66.9M with a 1-year CAGR of 260%. In 2012 estimates indicated that 67M LTE phones and 131M tablets were sold. Market forecasts predict that approximately 1 in 7 people will purchase a new smart phone in 2016.

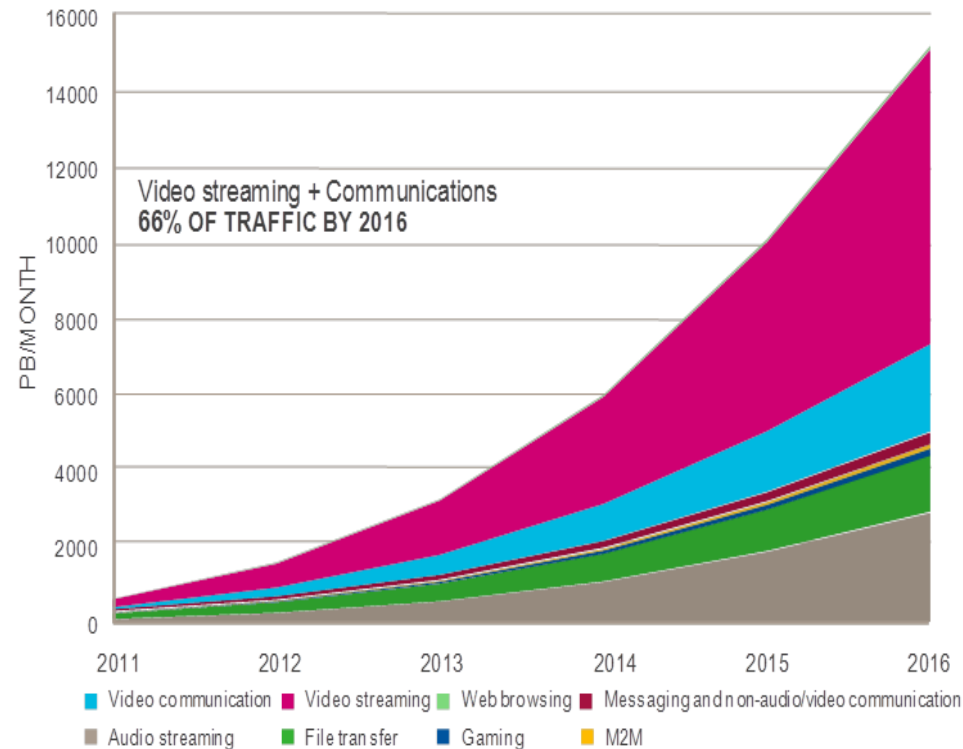
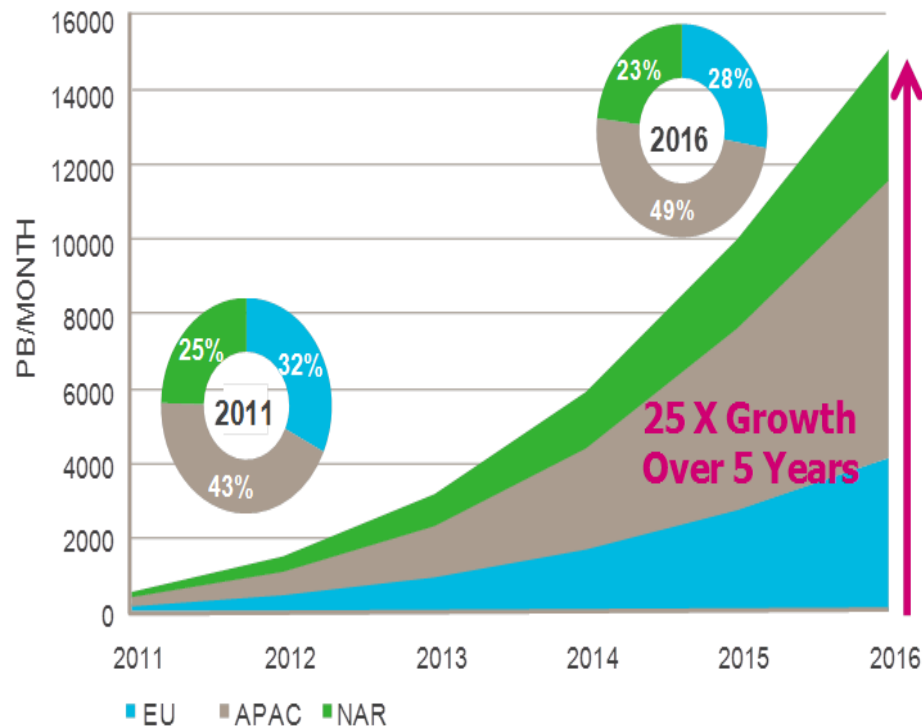
It is expected that in the 2013-2017 period the global shipments of tablets and other portable smart devices will reach 1.4 billion units, making this the fastest-growing category of consumer electronics ever seen.

Taking these factors into account, 2012 Bell Labs Traffic index study shows the Regional differences.

# Bell Labs Traffic Index Outcomes, 2012

Mobile data forecast 2011 - 2016  
Europe, North America, and Asia Pacific

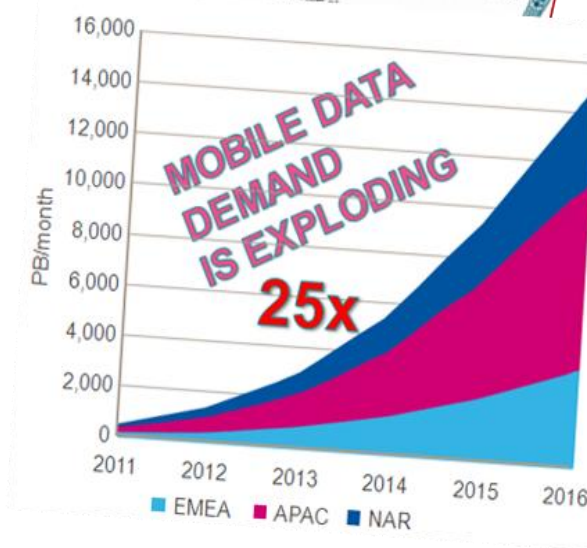
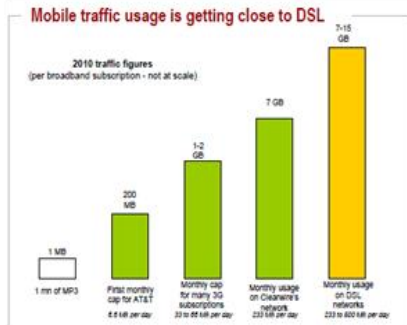
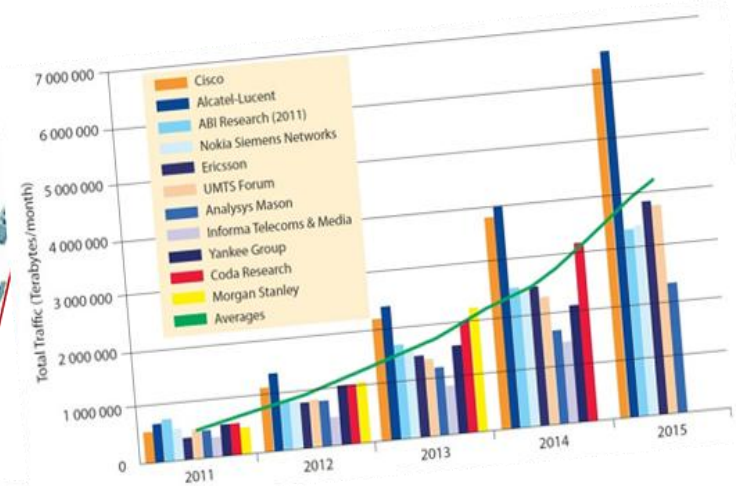
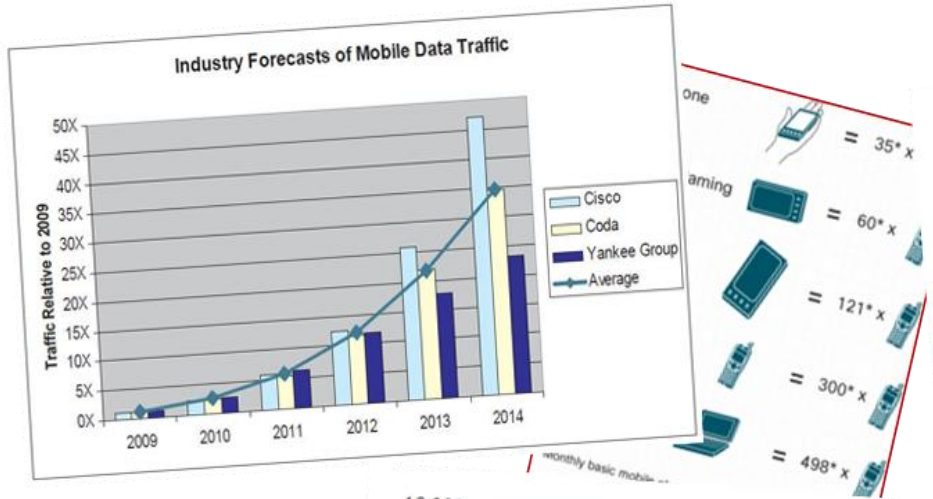
Cumulative traffic distribution 2011 - 2016  
Europe, North America, and Asia Pacific



**Traffic Growth is a Global Phenomenon**

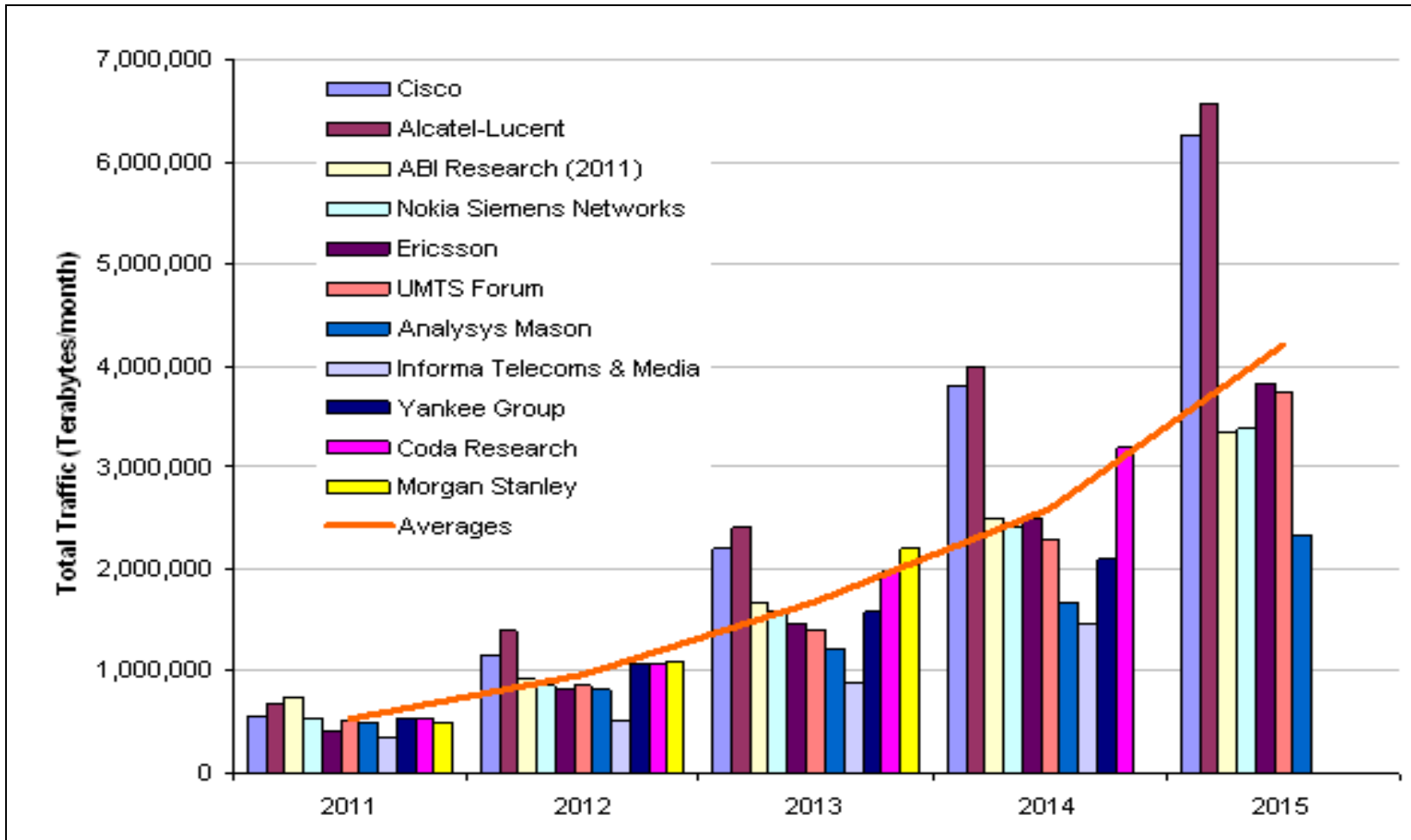
Source: Bell Labs research, 2012

# Numerous Reports Show the Demand for Mobile Data is Growing





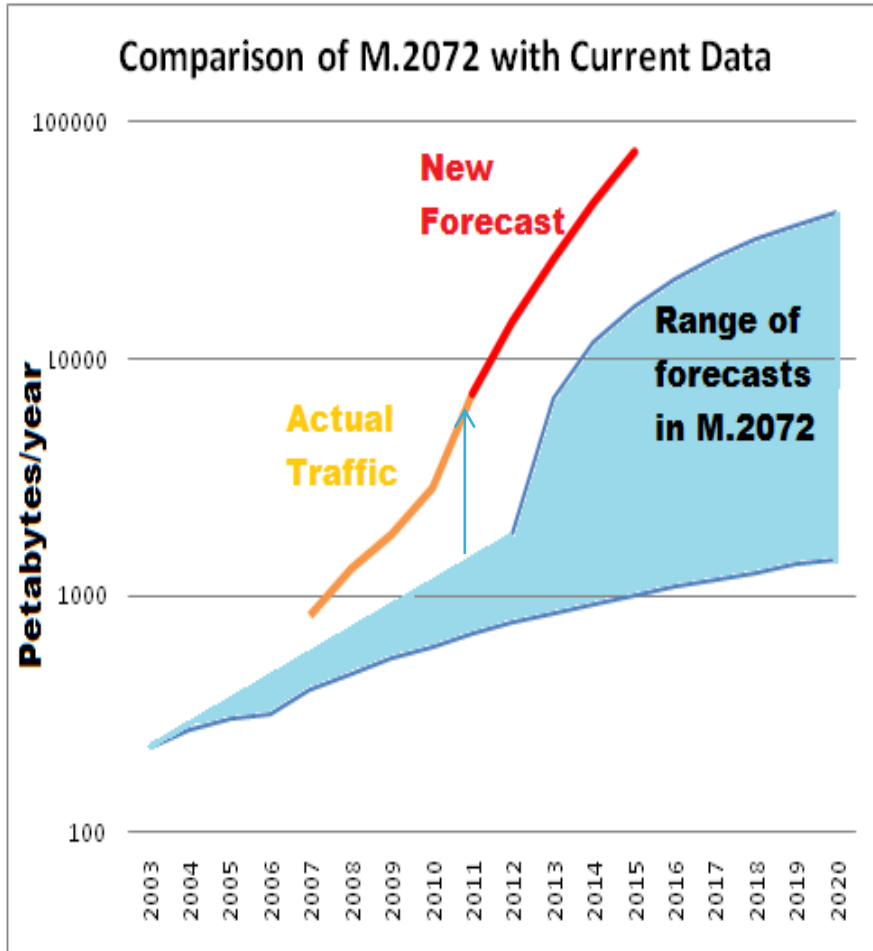
# Other Industry Study Results from Report ITU-R M.2243



**Global mobile data traffic estimation from 2011 to 2015 based on multiple sources**

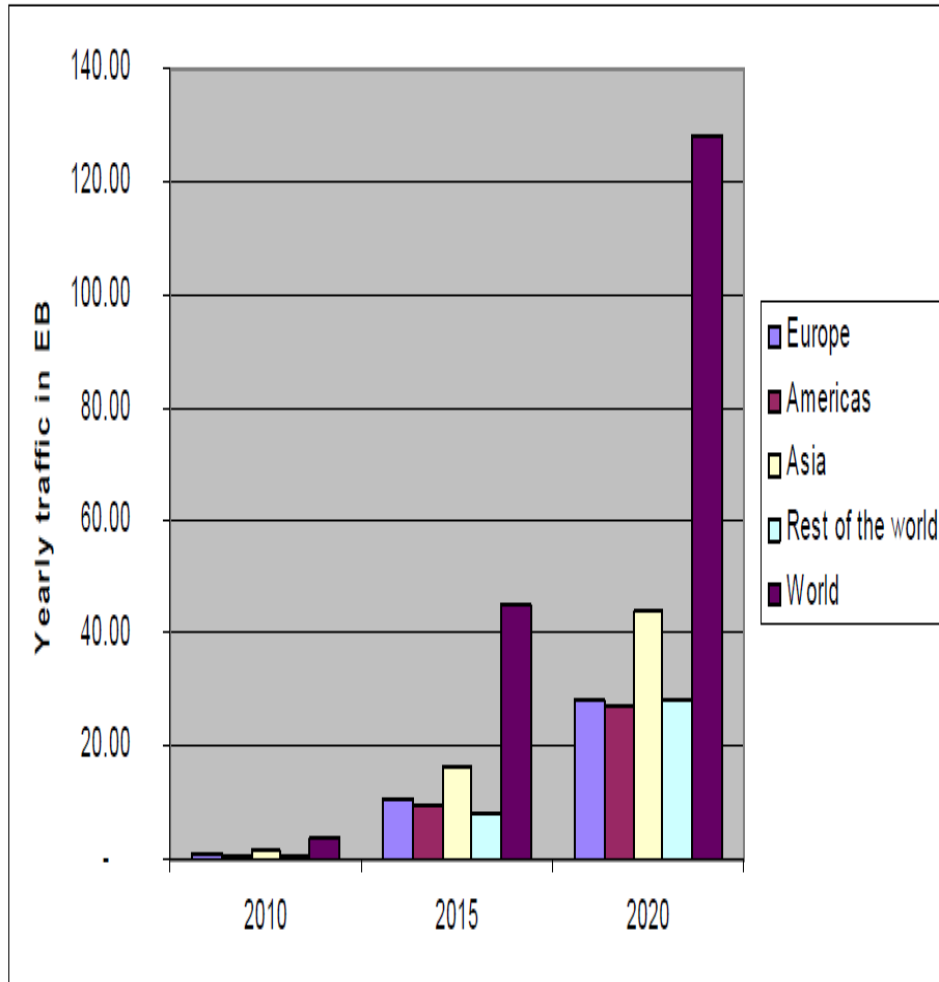
*It can be seen from this figure that there are some similarities in short-term estimates, but variations in the long-term forecasts. Some discrepancies are related to different assumptions in the various studies.*

# Further Projections towards 2020 from Report ITU-R M.2243 (1)



- In 2011, ITU-R updated the MBB traffic forecasts from 2007.
- It was found that the data traffic volume reported for 2010 was more than 5 times greater than some of the ITU-R estimates from 2007.
- In addition, the actual traffic experienced by some operators in 2011 was even greater than some of the ITU-R's projections for 2020.

# Further Projections towards 2020 from Report ITU-R M.2243 (2)



- In Report ITU-R M.2243, UMTS Forum estimation\* anticipates total mobile traffic of more than 127 Exabytes (EB) in 2020 that represents a 33 times increase compared with 2010 figures.

- According to the same source, Asia will represent 34.3% of total world mobile traffic while Europe and the Americas (including North, Central and South America) represent 22% and 21.4%, respectively.

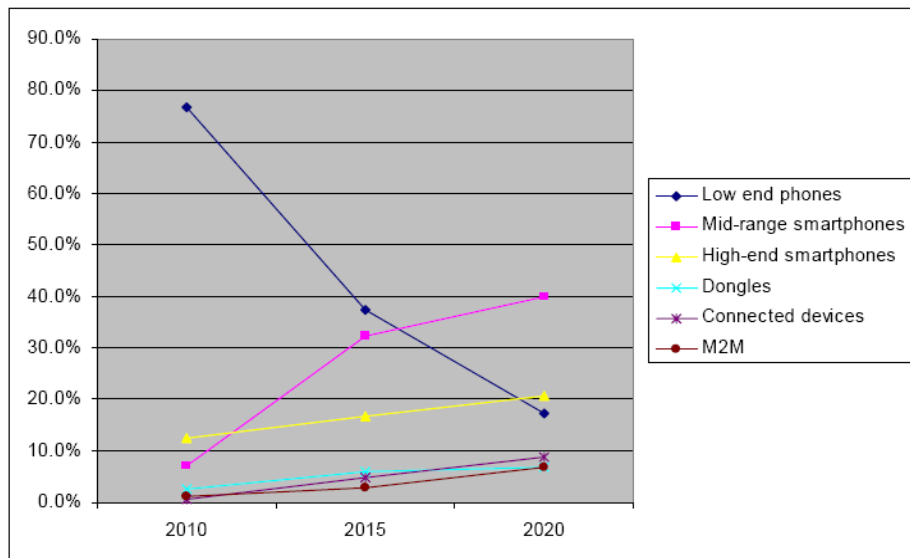
\* UMTS Forum Report: Mobile Traffic forecasts: 2010-2020, Report 44, January 2011.

# Further Projections towards 2020 from Report ITU-R M.2243 (3) “on device proliferations towards 2020” provided by UMTS Forum

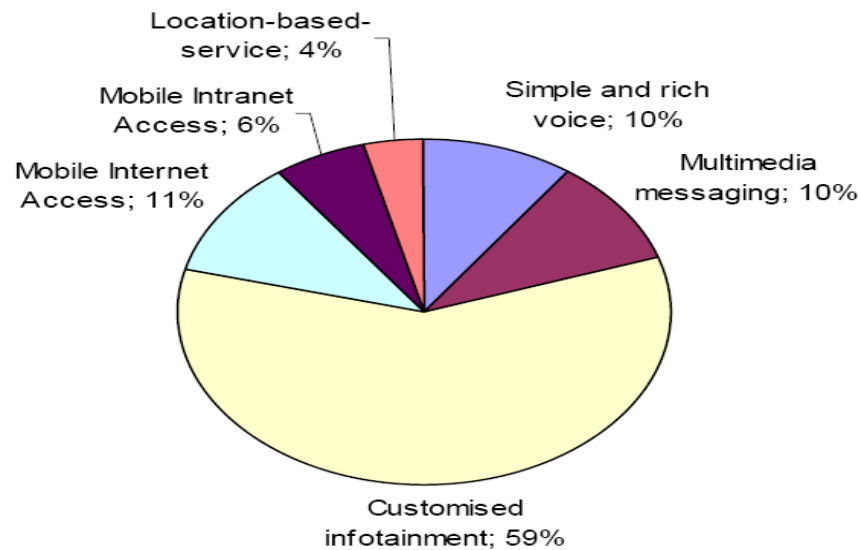
## Global Mobile Device Market

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

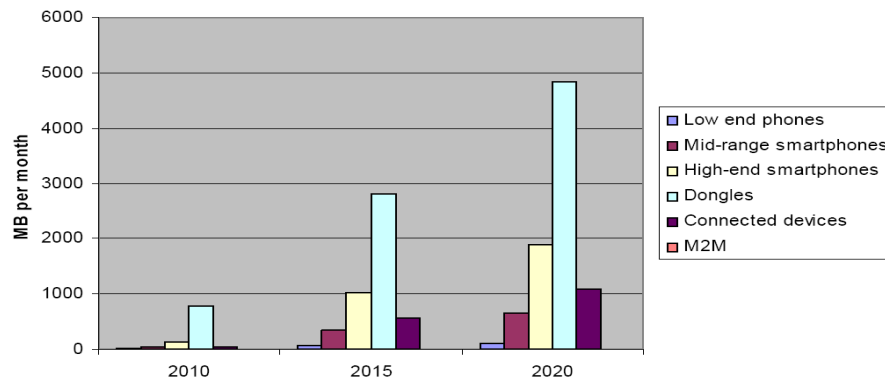
## Device mix— Worldwide



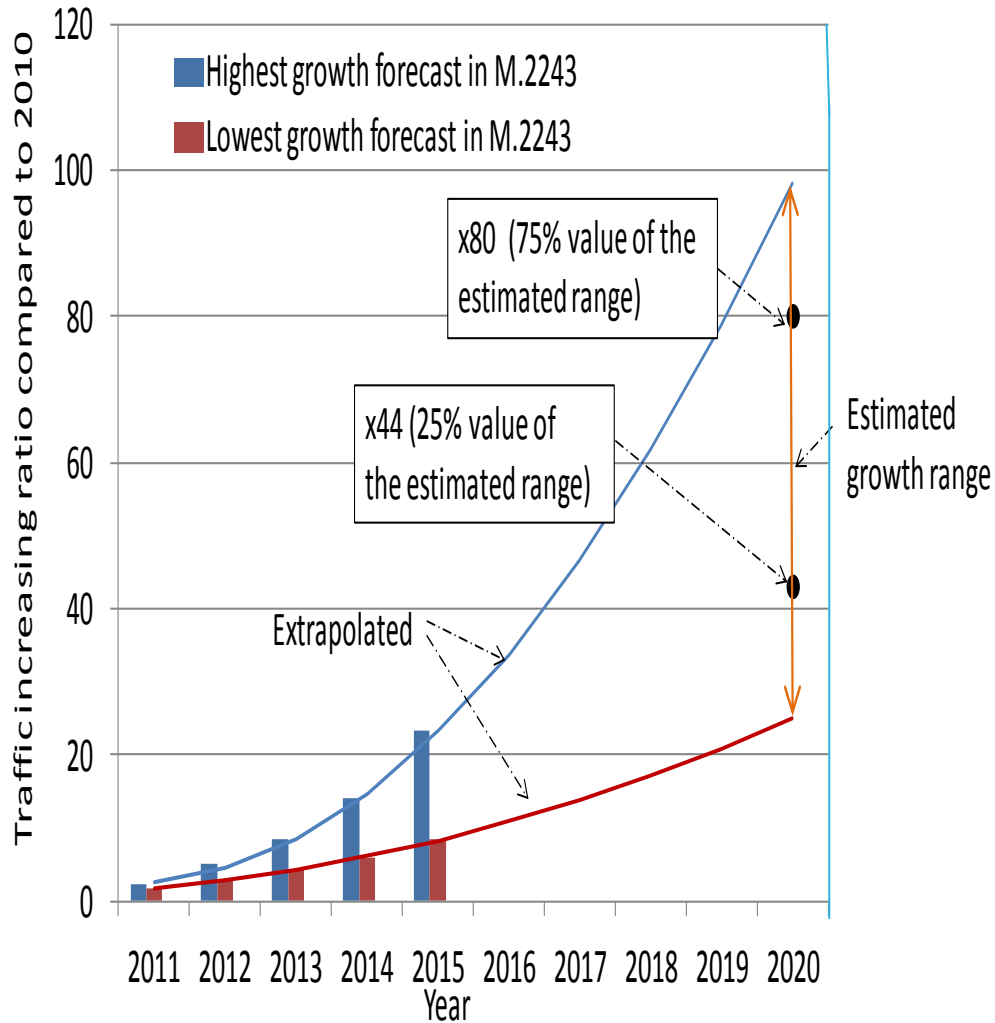
## Traffic distribution by service-2020



## Monthly traffic per device (World Average)



# Latest ITU-R Traffic Estimates from Report ITU-R M.2290

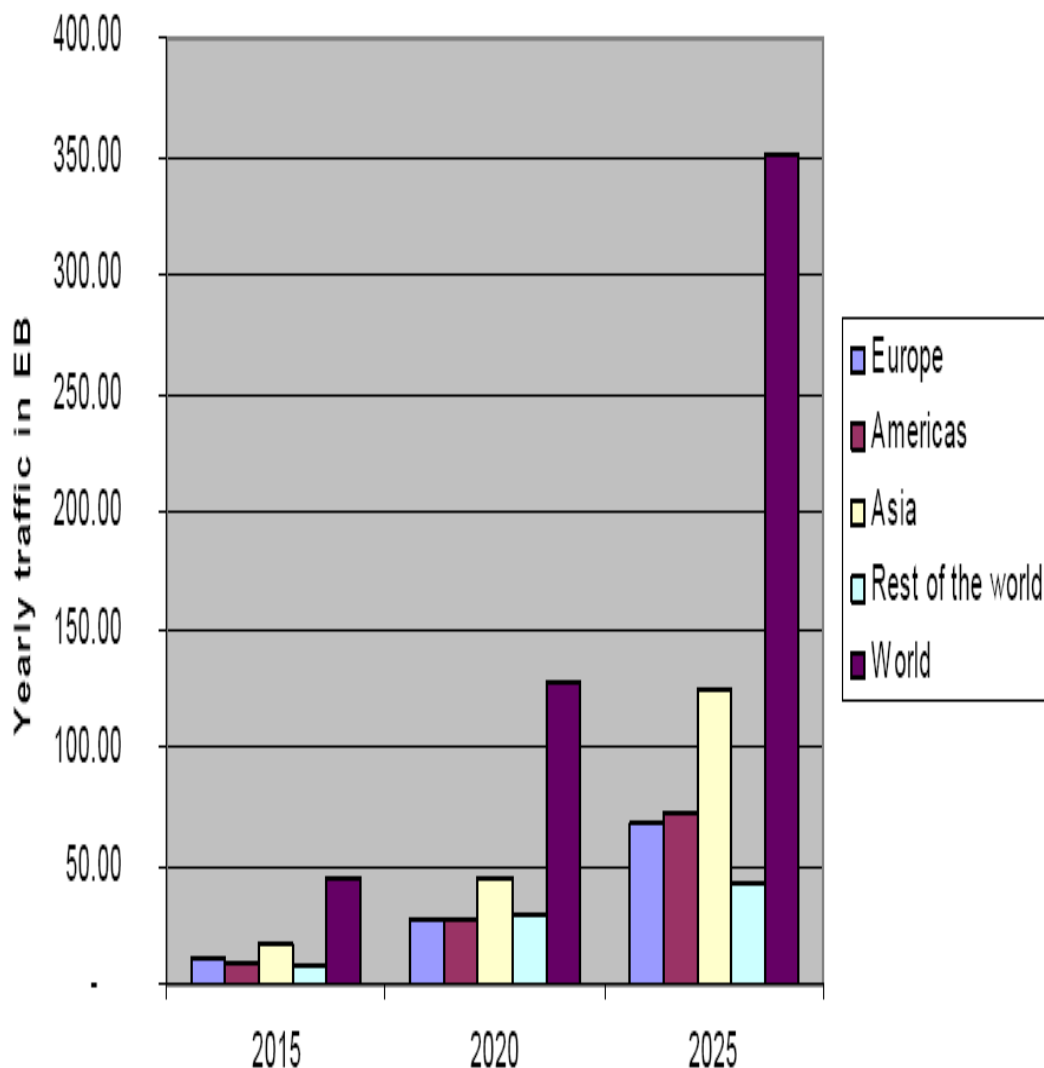


- **Report ITU-R M.2290, (IMT.ESTIMATE), published in 2013, found the min/max increase between years 2011-2020.**
- **There are other sources that project a thousand fold increase in traffic in the decade leading up to 2020.**
- **Note that the use of two market settings permits modeling of the differences in markets between different countries.**
- **Different market settings with different session arrival rate per user, mean service bit rate are expected to possess similar characteristics in the different deployments.**

# What is the Estimate of Traffic Demand for 2020-2025?

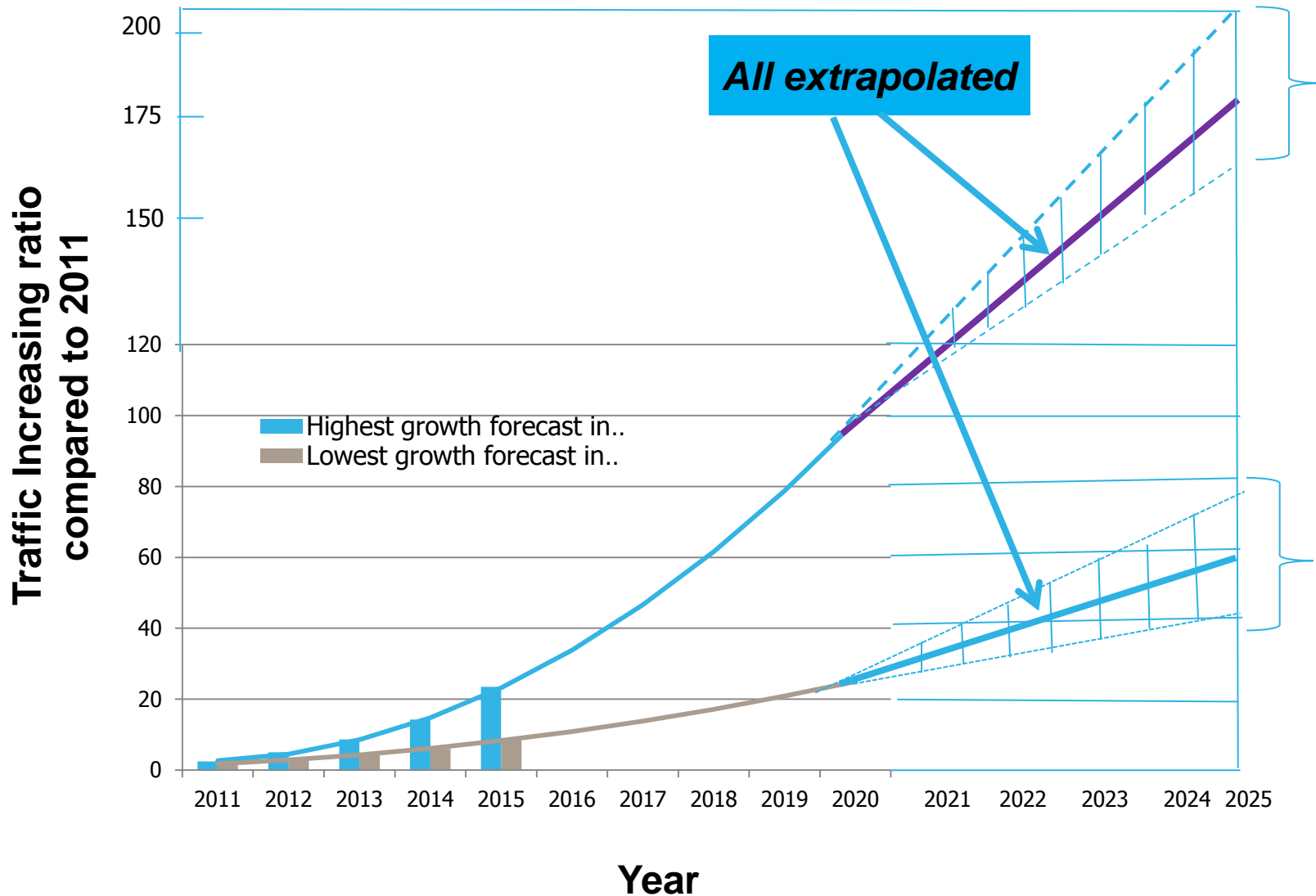


# Traffic Estimation for 2020-2025



- When looking into the future beyond 2020, the UMTS Forum's input provided to ITU-R anticipates global mobile traffic of 350 EB in 2025 (worldwide) representing a 174% increase compared to 2020.
- However, it should be noted that the 2025 forecasts here are given in order to show mobile traffic trends, but that the model used was designed for 2010-2020.
- It should be noted that, these depend on market developments, including:
  - *new type of devices,*
  - *increased mobile internet usage,*
  - *more mobile software application offerings,*
  - *growth of video traffic,*
  - *increased M2M traffic.*

# Some Predictions for the Future

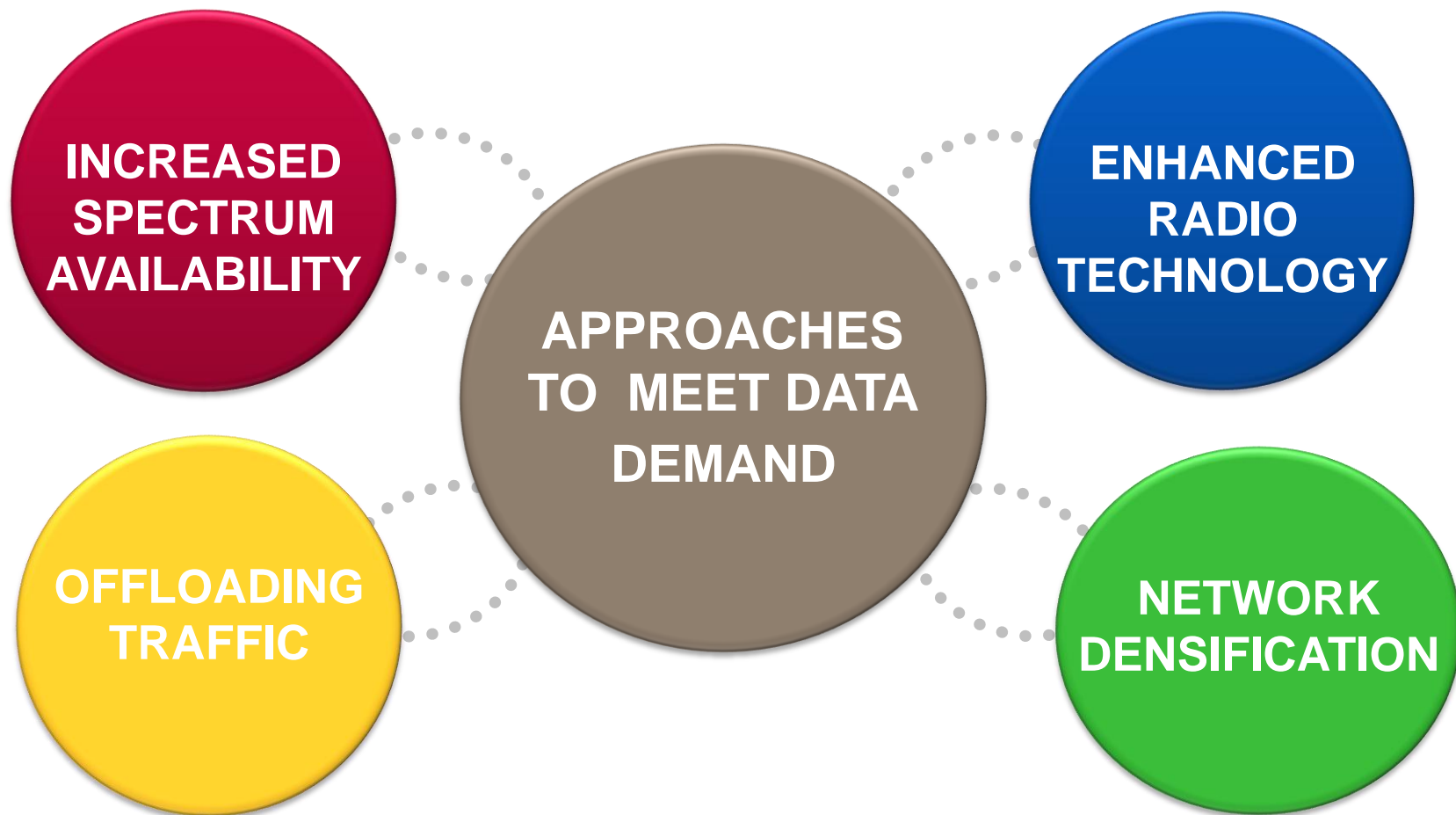


*With the tolerance of 10% increase or decrease*

*With the tolerance of 10% increase or decrease*



# The Supply-Side Elements to Address the Demand



To meet the increasing traffic demand, the most appropriate approach is a combination of the four elements as they are not mutually exclusive, but complementary.

# Conclusions

- Mobile broadband traffic has grown dramatically in recent years.
- This is due to the emergence and proliferation of new type of MBB devices such as smart phones, tablets, innovative mobile applications, etc..
- The ITU-R has been working on this subject since 2006; and two significant reports, M.2243 and M.2290, offer traffic forecast to 2020 taking into account new market trends and market drivers.
- If the same trends were to continue, it can be estimated that traffic would increase by as much as 175 times from 2011-2025.
- Enhanced radio technologies, network densification, traffic offloading, and additional spectrum, in a complementary manner, are expected to help meet this traffic data growth.
- The ITU-R and other organizations are working on this issue, and an ITU-R WP5D Report is expected to be produced by the end of 2014.

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