ATCA for Next Generation Voice/Packet Networks in a Hyperconnected Environment

www.huawei.com

Staffan Skogby
Senior Product Manager
ATCA Summit, San Jose November 1st , 2011

HUAWEI TECHNOLOGIES CO., LTD.

HUAWEI

Content

- **Business Drivers and Trends**
- **Huawei ATCA Introduction**
- **Conclusions and Outlook**

Market Drivers:
Colorful Services and Devices

- **Colorful Services and Devices drive Mobile broadband traffic**
- **In the full-service operation era, excellent experience is the most important factor to win**

Core Network Trends – Convergence Becoming a Reality


Unified Communication


Navigate

Multi and converged services with same experience crossing the networks

Entertainment


Virtual lifestyle


Education


Information


Multi-Media


Personal assist

Any time &
Any where & Any Terminal


On The Trip


On Move


At Home


WiFi Hotspot

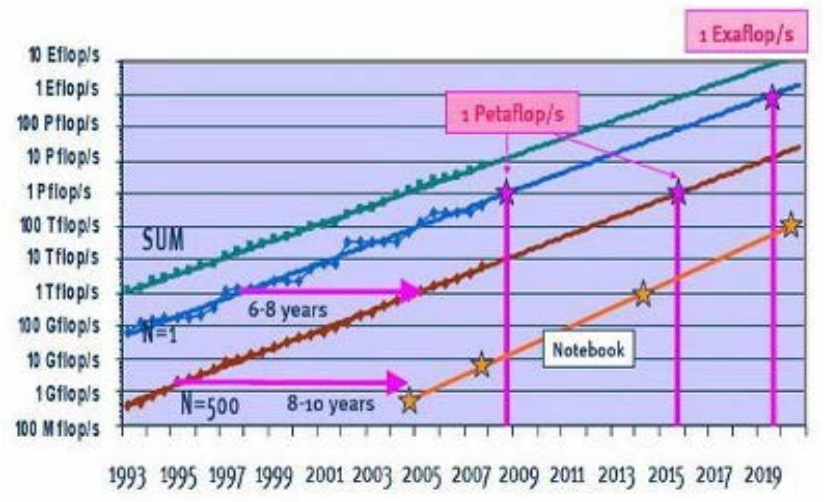

At Office

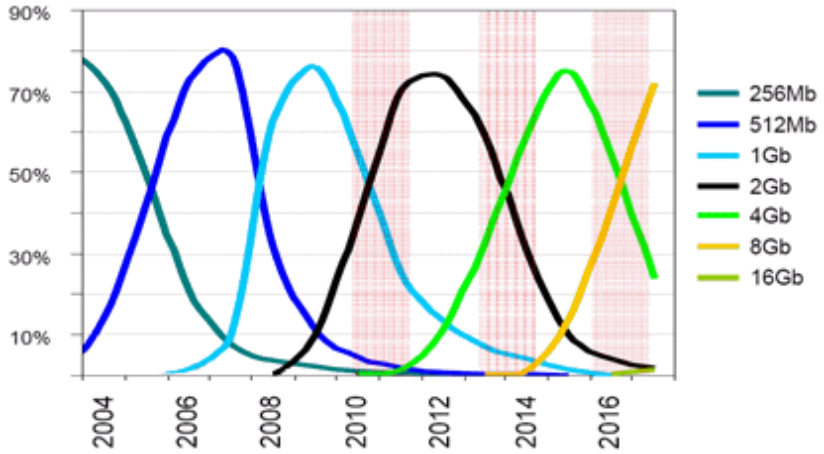
Drivers for Hardware Platform Evolution

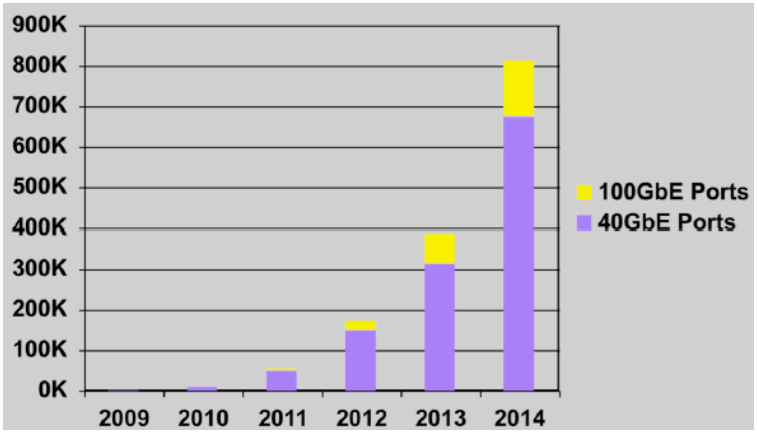
Drivers:

- **The MBB evolution will require more powerful HW platforms**
- **Convergence to common hardware platform components**
- **Network Operator need for improved cost efficiency**
- **Competition in the ICT industry**
- **Technology advances**
  - Moore's law on processor technology
  - Many core processors
  - Hardware virtualization support

Technology for Hardware Platform Evolution







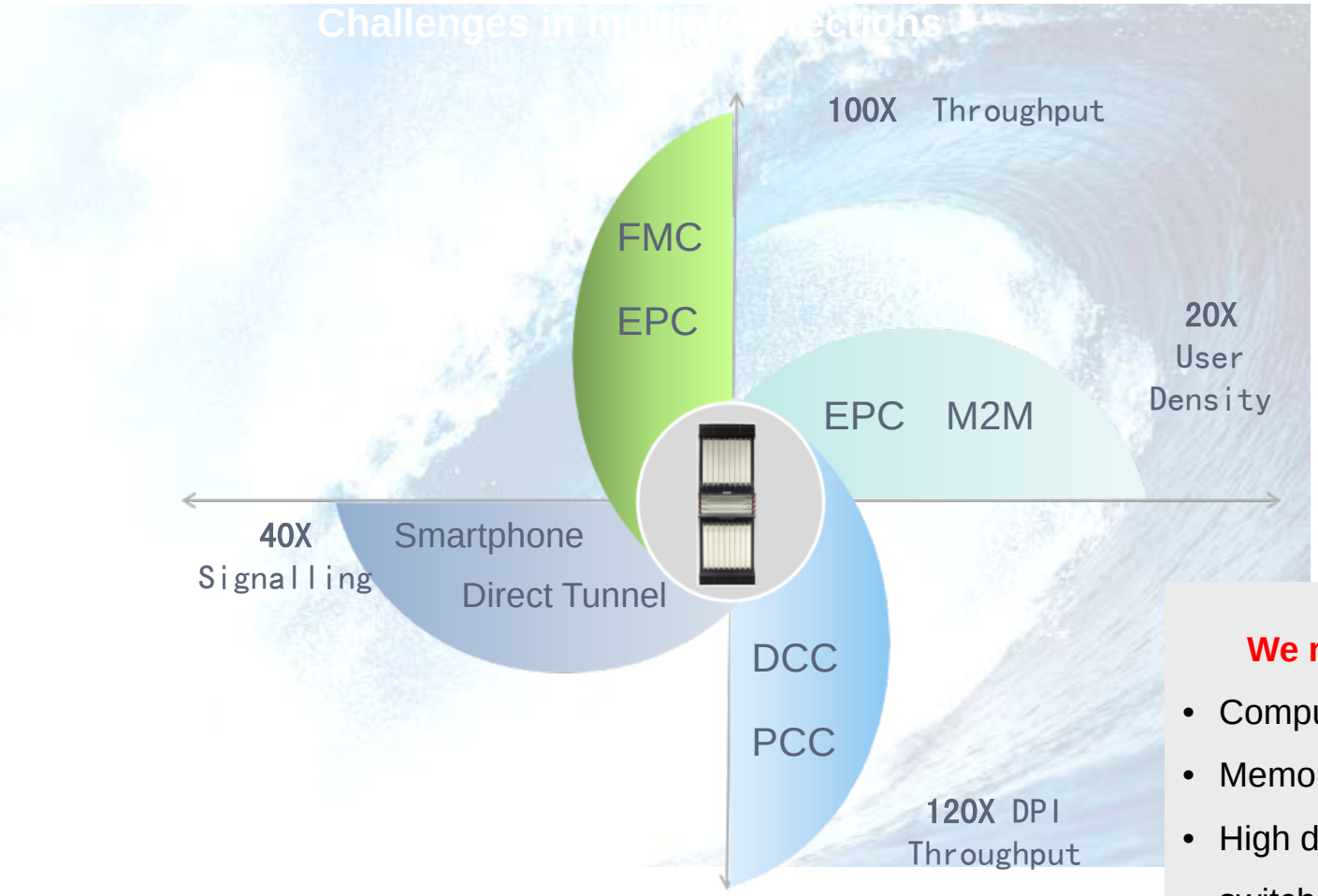
Source: The Liney Group December,2010

Challenges for Hardware Evolution

Challenges:

- **How to change the HW to support more power & cooling?**
- **How will it impact central office site?**
- **How to meet the life-cycle challenges of Telecom?**
- **How to improve the outlook for TCO (Total Cost of Ownership)**
- **How to manage cost-effectively the diversity of requirements with a reduced number of platforms**

Summary of HW Platform Challenges



We need more power for:

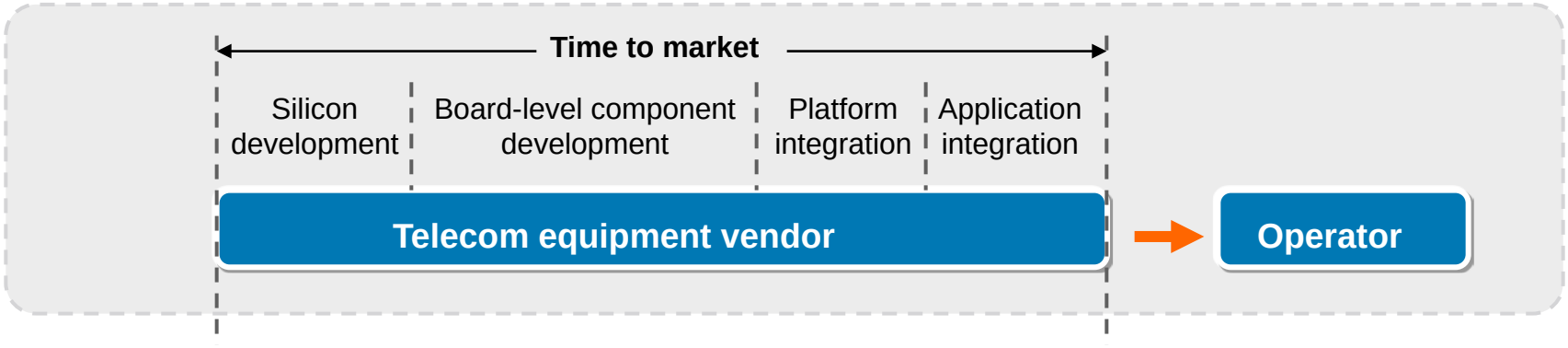
- Computing performance
- Memory capacity
- High density interface and switching network

Content

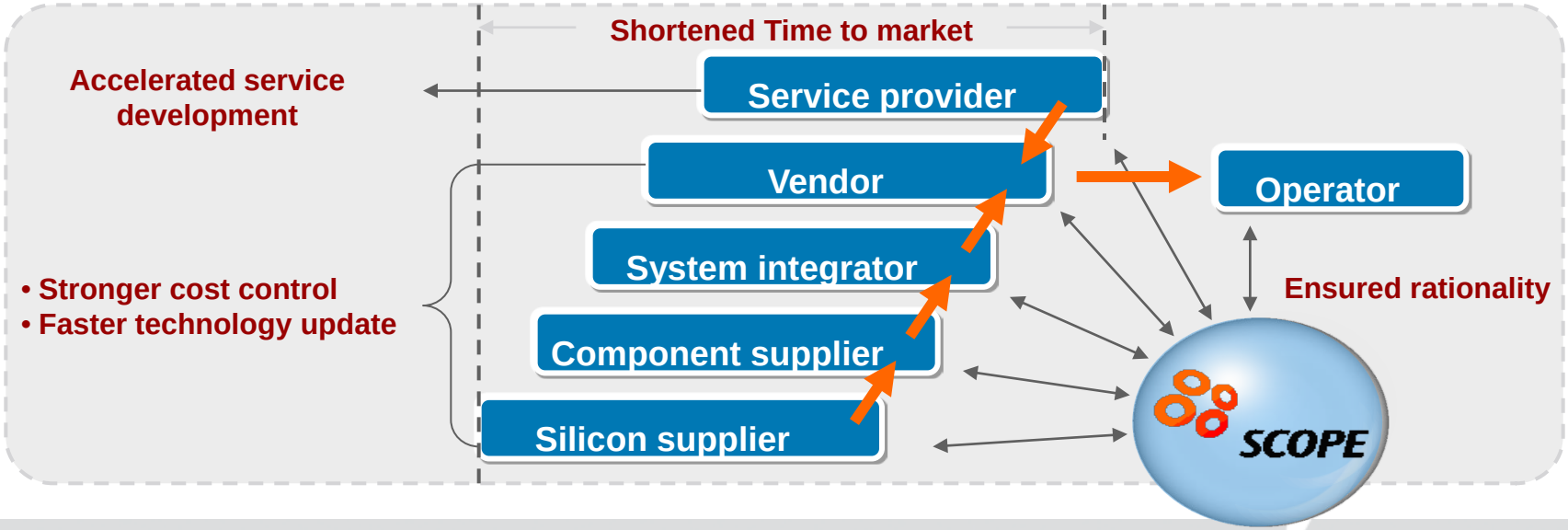
- Business Drivers and Trend
- Huawei ATCA Introduction
- Conclusions and Outlook

In Summary: ATCA Provides Mature Ecosystem, Lower Cost with Higher Quality

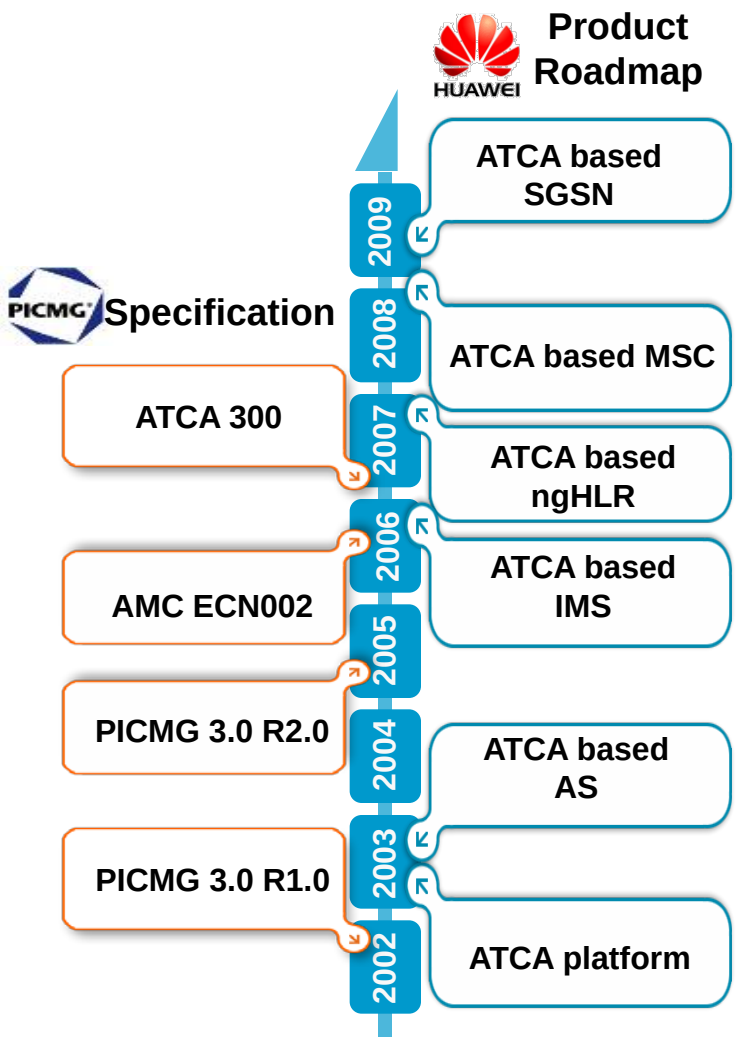
Traditional product development mode



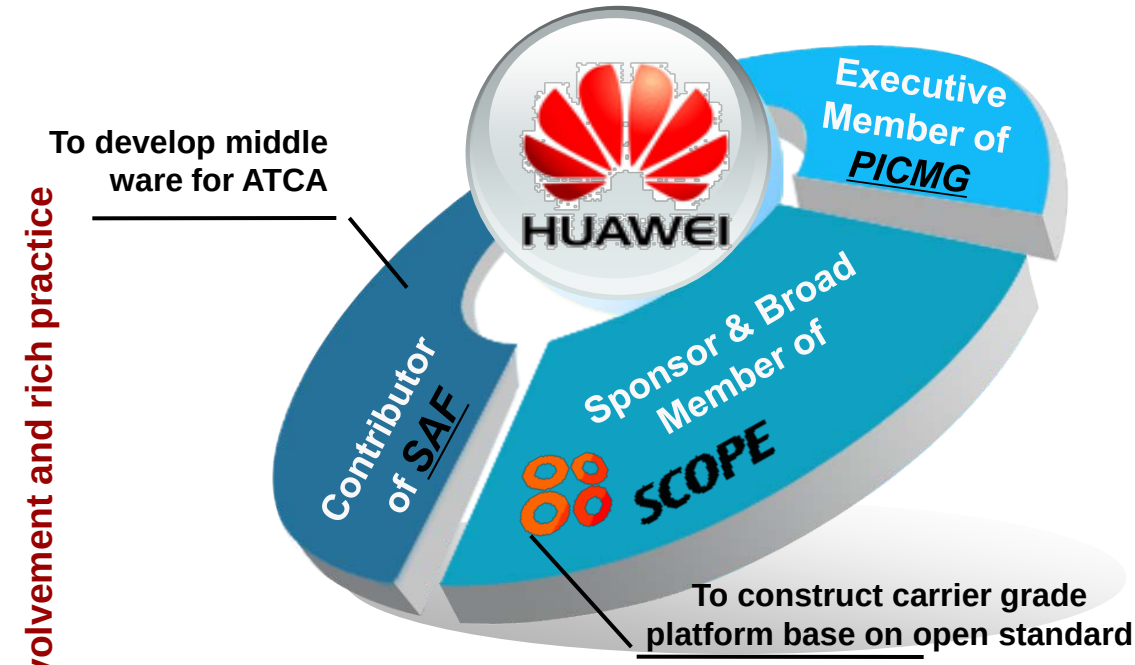
ATCA based product development mode



Huawei is one of the contributors in ATCA standardization



Early involvement and rich practice

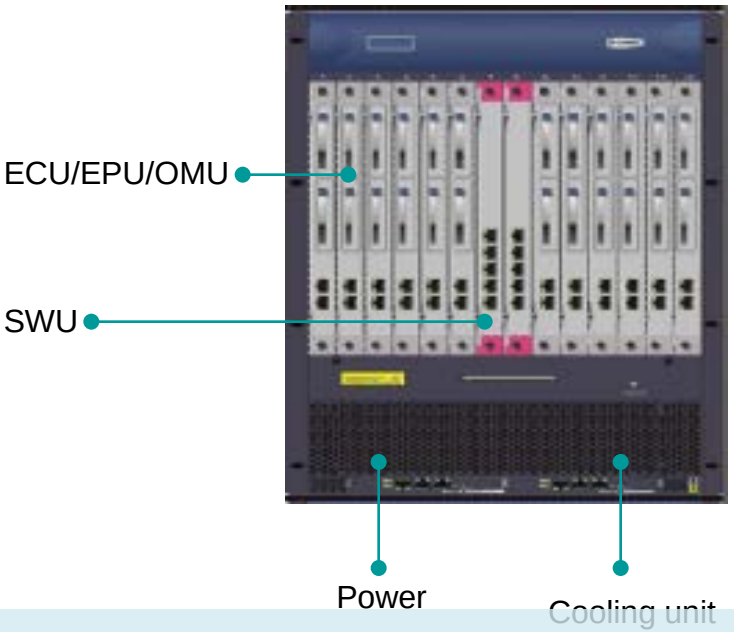


- Huawei is a promoter of ATCA
- Dedicated in the standardization of ATCA Specs
- Making it more suitable for telecom application

Universal Boards of Hardware Platform

Four types of boards

- **ECU: Enhanced Control Plane Unit**
  - Processing control plane and charging function
  - 500k SAU,1MPDP
- **EPU: Enhanced Packet forward Unit**
  - Packet forwarding
  - User plane service processing
  - 1MPDP, 2Gbps forwarding capacity
- **OMU: Operation & Maintenance Unit**
  - OM center for the node
  - Shelf Management and environment temperature and condition inspection
- **SWU: Switch Unit**
  - Data exchange inter or intra chassis



Value for customer:

- High performance & capacity
- Footprint saving
- Low power consumption
- High density
- High Reliability
- Compatibility and future-oriented

Content

- Core Network Trends and Business Drivers
- Huawei ATCA Introduction
- Conclusions and Outlook

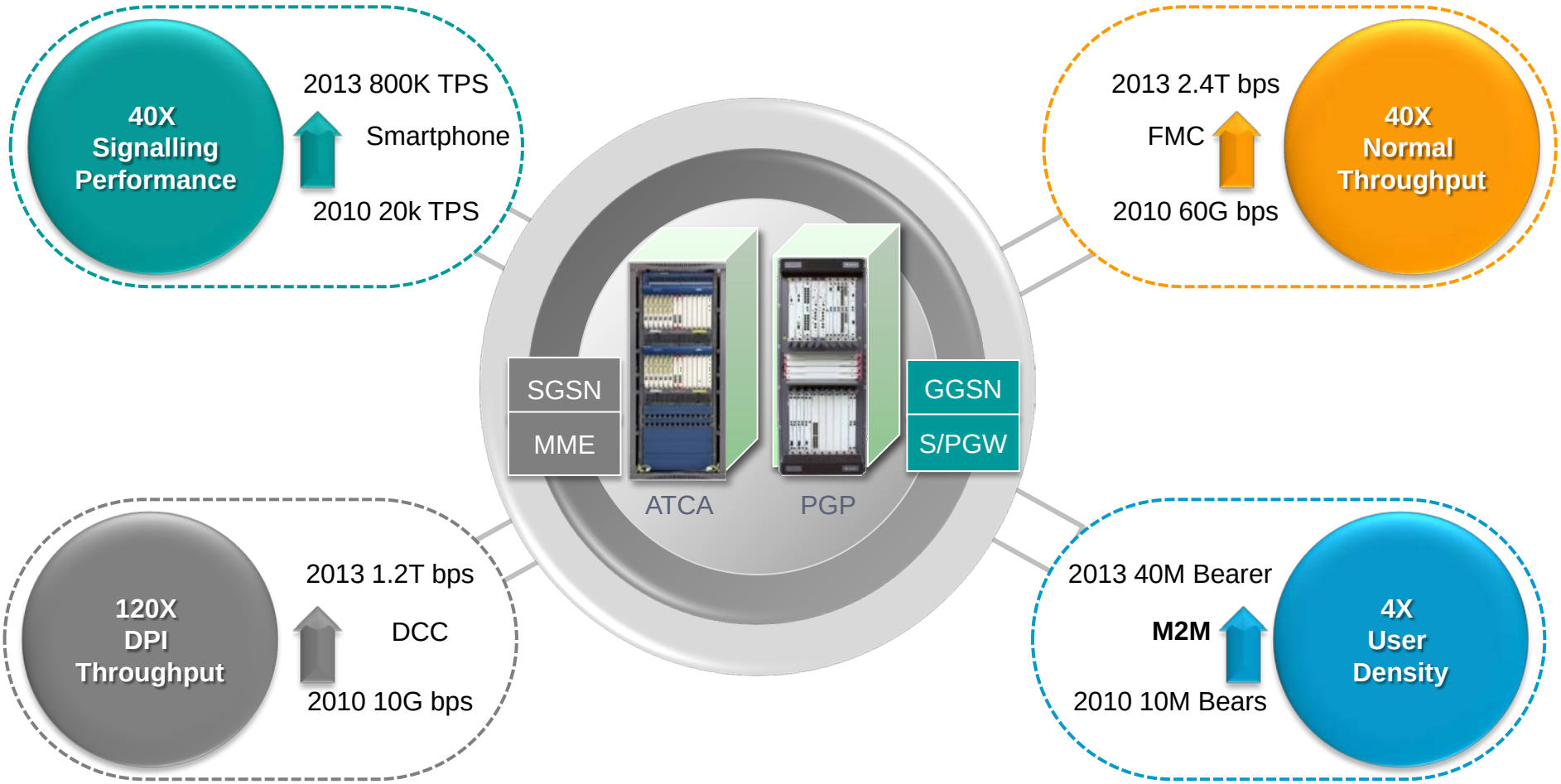
Strategies to meet the requirements

- **Challenges for selecting HW platforms for MBB**
  - Many vendors select router platforms for large scale MBB
  - The chip-sets for handling user plane and control are different
  - The difference is in how to meet the bandwidth needs and the support from switch fabric
- **Cloud computing will impact the telecom network at every layer over long-term**

Control plane and media plane

- **How to meet variety of requirements in terms of throughput and processing?**
  - The HW evolution of common components will gain momentum with many cores and support for virtualization
  - Is ATCA becoming outdated?
    - How to introduce many cores ?
    - Do we need a new HW platform?
    - How to meet life cycle issues with platform changes?
    - Extension of ATCA ?
- **Is only one HW platform needed for both media plane and control plane?**
  - What would be the benefit for the operator?
  - Common platform for all?

SingleEPC – Platform Strategy



Conclusion of future needs

- More interface bandwidth above 100 Gbps
- Board area 1.5 – 2 x board size
- More power per board in the range of 500W – 1000W
- Liquid cooling options
- Time frame to market in 2015