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Network Functions on the Move

What LTE Policy Control Features can Operators execute to differentiate themselves from OTT Players?

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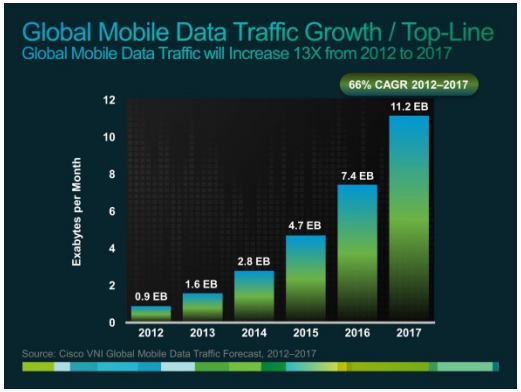
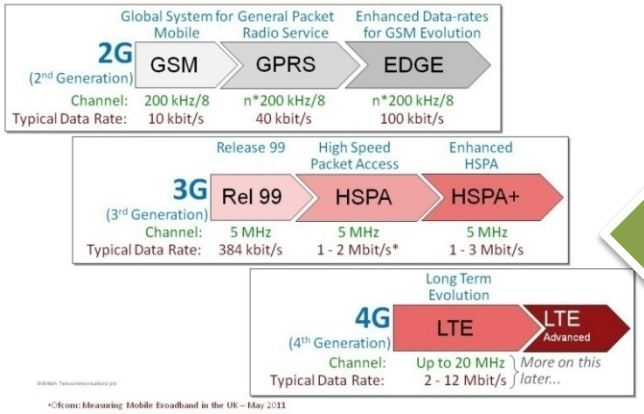
LTE - industry background

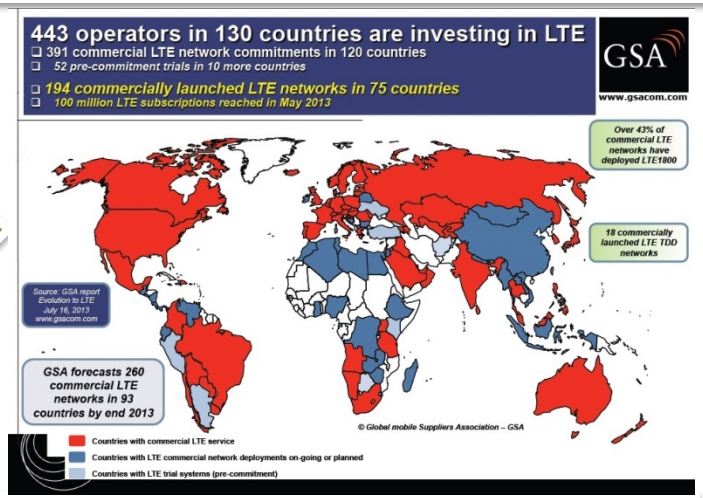
Global Mobile Data Traffic expected to increase 13 x by 2017
Radio technologies evolving to provide higher speeds and capacity
– Average global mobile network speed 3.9Mbps by 2017





LTE provides higher spectral efficiency and new spectrum available
Aggregate bandwidth of 150Mbps per cell

"GSA confirms 200 LTE networks are commercially launched in 76 countries" – GSA August 2013

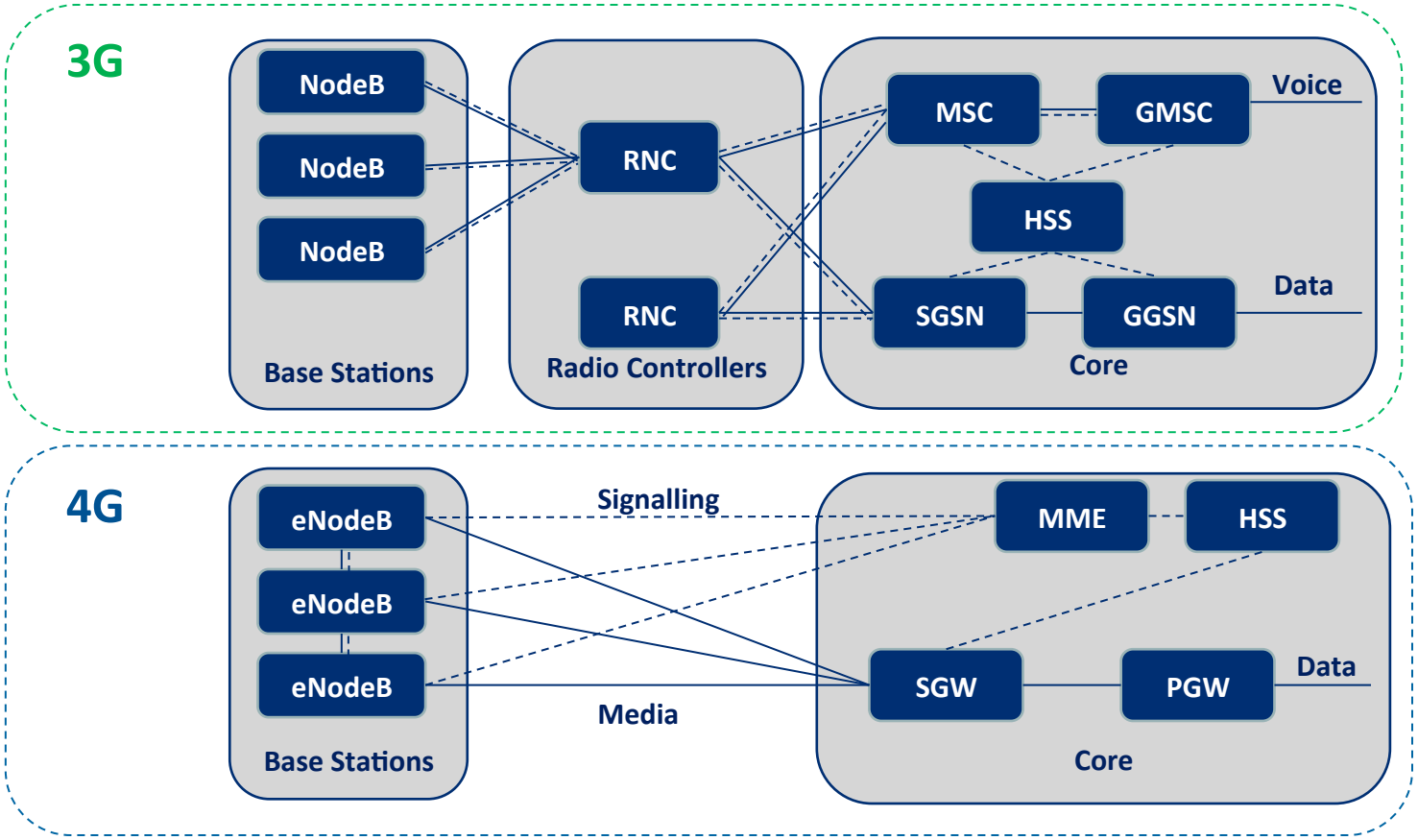


Ofcom granted preliminary approval for EE to reuse their 1800 MHz launching 30th October 2012

O2 and Vodafone launched in the UK on 29th August 2013

Mobile Core Network Evolution

- Core mobile networks are evolving to a new architecture – the Evolved Packet Core (EPC)
- EPC - flat all-IP architecture providing better support for large amounts of data traffic



Evolution & Key Drivers for Policy Control

2/3G networks	4G networks
Limited mobile data traffic demand	"Mobile Data Tsunami"
Key revenue sources under full MNO control	Increasing pressure from OTT providers on MNOs
2/3G data access latency & delay	Latency and delay improvements on LTE
Limited device capability	Device capabilities rapidly evolving
Real-time traffic handled separately end-to-end	All traffic carried over the data (shared) access
Limited need for Policy Control in 2/3G (mostly charging)	Gradually increasing need for Policy Control in 4G

Policy Control Enabled Services

Consumer

- Fair Usage
- Bill Shock Prevention
- Turbo Boost
- Time of Day
- Bundling of Popular Services
- QoS Enabled Gaming

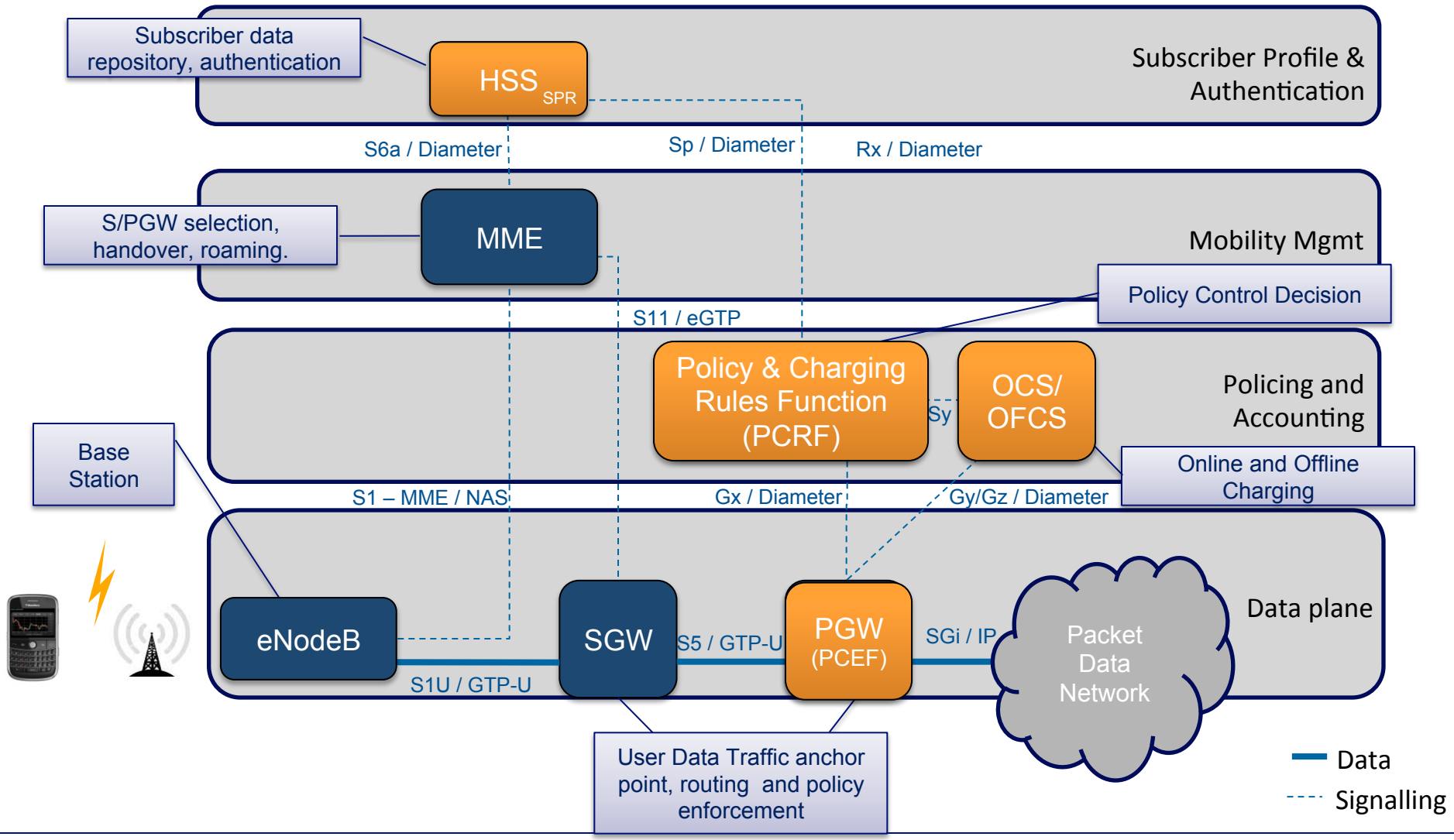
Family

- Family Data Plans
- Parental Controls
- Parental Notification of Usage
- QoS Enabled IPTV

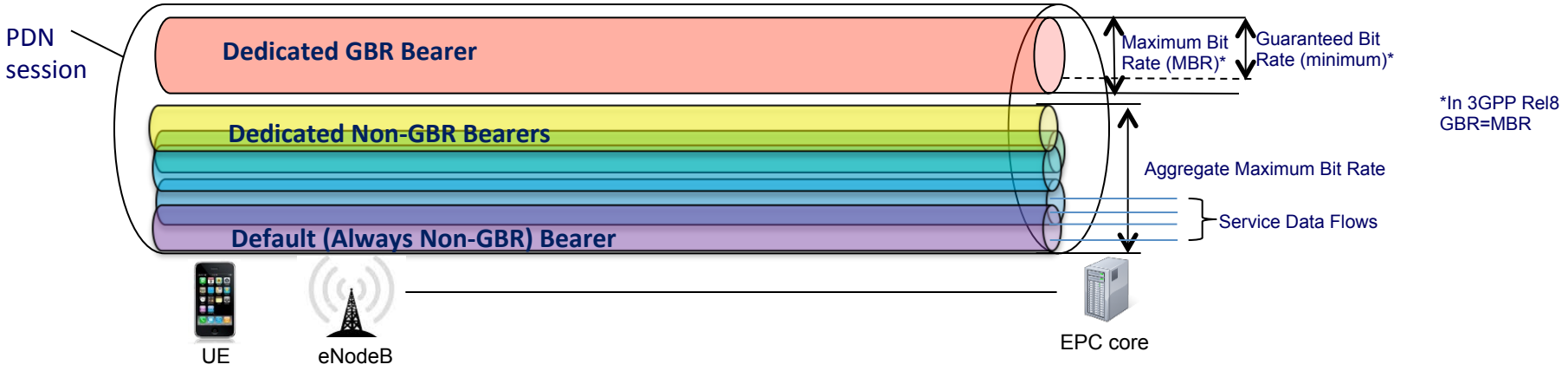
Business

- Employee Data Plans
- Bring Your Own Device To Work
- QoS Enabled HD Voice/ Video Conferencing

Evolved Packet Core Architecture – functional elements



Key LTE QoS parameters



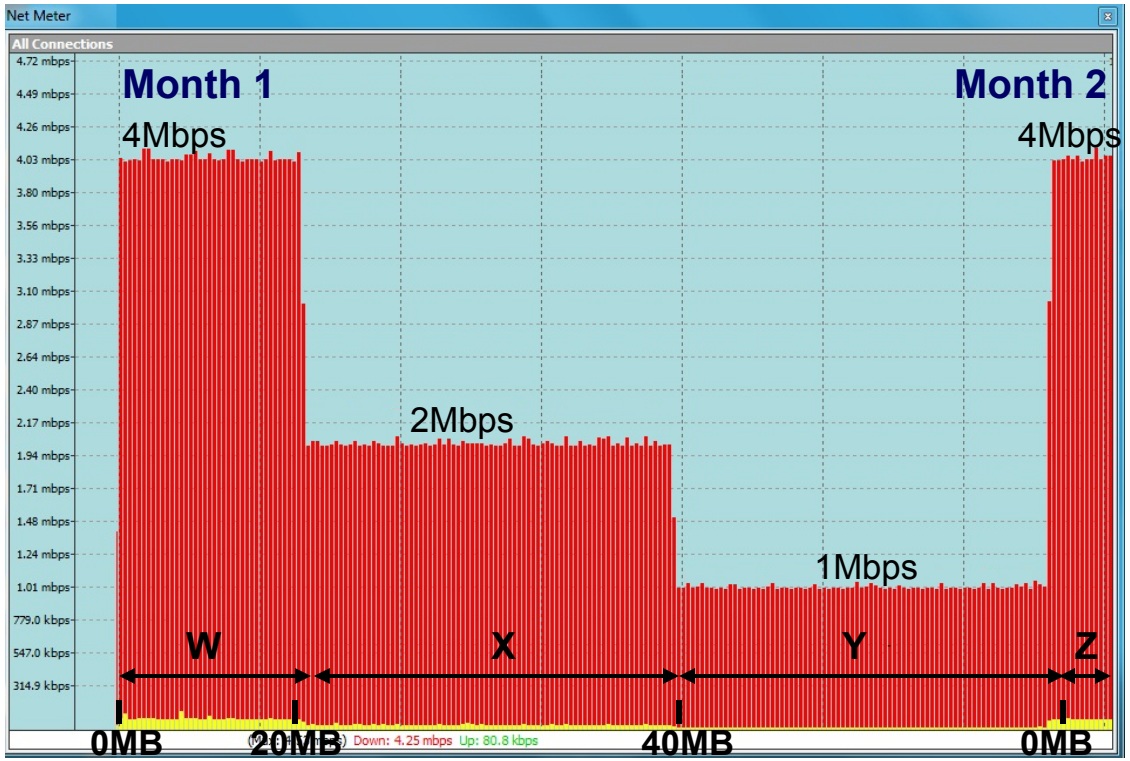
- Bearers QoS parameters:
  - **Quality of Service Class Indicator (QCI)**
  - **Allocation and Retention Priority (ARP)**

- **Service Data Flow Filters**
  - Uplink (UL), Downlink (DL) or both.
  - Match on IP address, port number, protocols e.g. UDP, HTTP, etc.

Excessive Usage Example

- A user who has a contract specifying a data allowance of 40 Mbytes per month.
- Defining how a user can consume their data allowance with a fine level of granularity & control.

Technology evaluation work at BT Adastral Park



(Bandwidth used)

Future of Policy Control/ Opportunities for Operators

Quality of Experience

Focused Quality of Experience as a key service differentiator

Event Driven Policy

Service Upsell

Targeting Services to the Individual

Consistency of Policy across different access mechanisms

Multi-Access

Sophisticated charging by LTE Operator

Policy Events triggered by a User's Location

Location Based Policy

The End

Ruth Brown