



**Network Neutrality – Traffic Management & QoS**  
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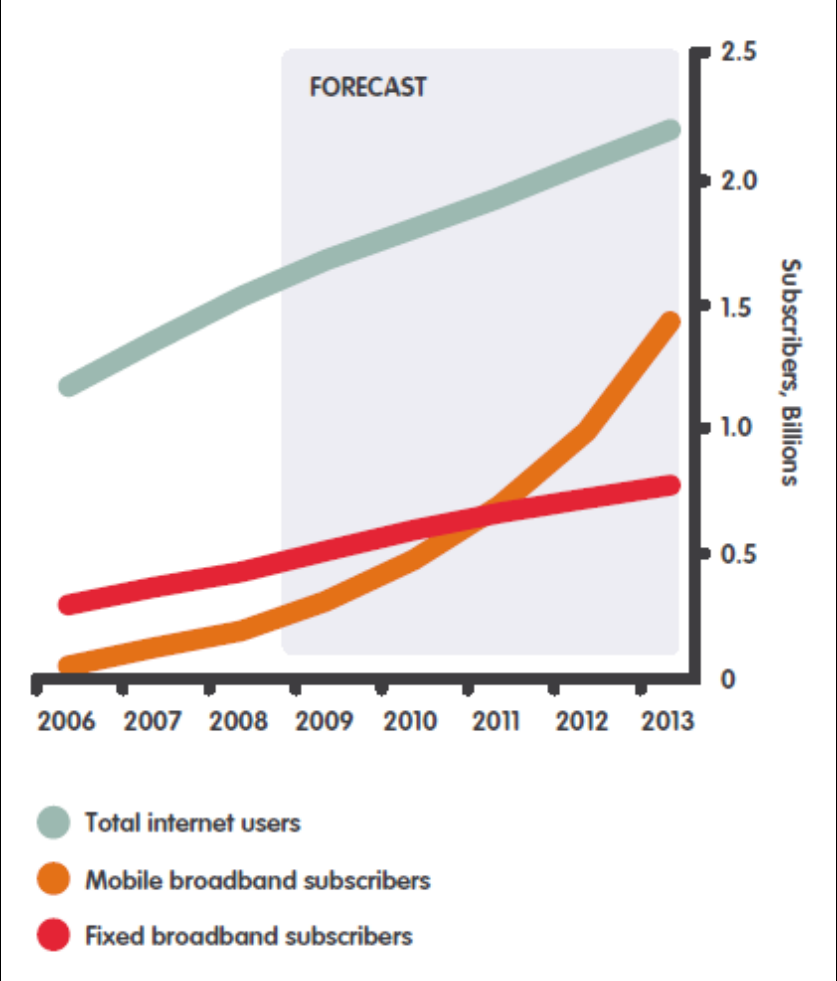
# Network Neutrality – Traffic Management & QoS

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# Traffic Management & QoS - Why?

- **Competition** – Operators build the best network
- **Spectrum** – A finite resource
- **Different Services** – Different offerings to satisfy different customer demands
- **Security** – Securing the networks, delivering trust
- **Quality of Experience**- Delivering the **best** experience to as many customers as possible
- **QoS Levels**- To those consumers, businesses requiring it
- **Changing market** - Software as a Service/Cloud computing

# Consumer Demand for the Mobile Internet

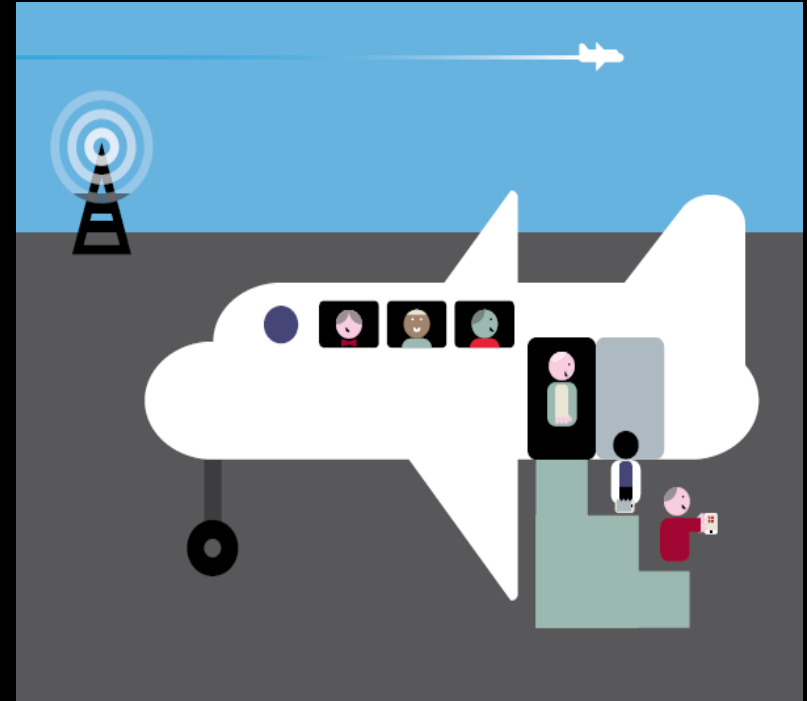


Sources: Informa Telecoms & Media; ITU; Forrester Research

# The Importance of Traffic/Network Management



- ISPs constantly manage the traffic on their networks to provide consumers with the best possible quality of service.
- As mobile ISPs only have access to a finite amount of spectrum, they have to ensure that this scarce resource is shared fairly between customers.
- They also have to balance different types of traffic to give priority to real-time services (such as video calls, which become unusable if packets are delayed too long).



250 passengers disembarking an aircraft may all turn on their mobile devices at the same time to check emails, texts and voicemails. The local operator has to ensure that the network isn't overwhelmed by the surge in demand.

# Network Management Techniques



**MOBILE  
ISPS**

**FIXED  
ISPS**

**CONTENT  
CACHING**

CDNs,  
Akamai,  
abovenet

**CONTENT**

Age related content control  
MAACSA  
Legal Interception

**ACTIVE  
MONITORING**

Network Quality, packet loss, speed  
Protection against abuse: DDoS, Malware, Virus

**CAPACITY  
PLANNING &  
SPECTRUM**

Fair use policy  
Traffic enforcement, traffic shaping  
Throttling techniques, TCP Window size,  
Aggressive FEC  
Scheduler  
Dedicated and non dedicated data channels

**DEVICE  
MANAGEMENT**

UICC based device portability, network access  
and authentication  
Remote (OTA) provisioning, Lock and wipe  
Upgrade and patch through STK  
Preferential roaming rates – PLMN list, preferred  
networks  
Security – Open application architecture

- Against a dynamic environment of always on, increasing demand for mobile connectivity, Businesses & Consumers rely on us to provide resilience and redundancy in our networks.
- Network management is a *vital* tool in delivering that.
- Differentiated services and QoS responding to market demand
- The framework along with competition law provides sufficient guidance to operators and regulators.
- It is all about delivering the optimal end-user experience to as many people as much of the time as possible.