5th Annual i3Forum Conference

The Future is All IP

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Chicago

What will the Industry face in the "near" future ?

presented by

Alessandro Forcina
(i3 Forum WS "Technical Aspects" Chairman)
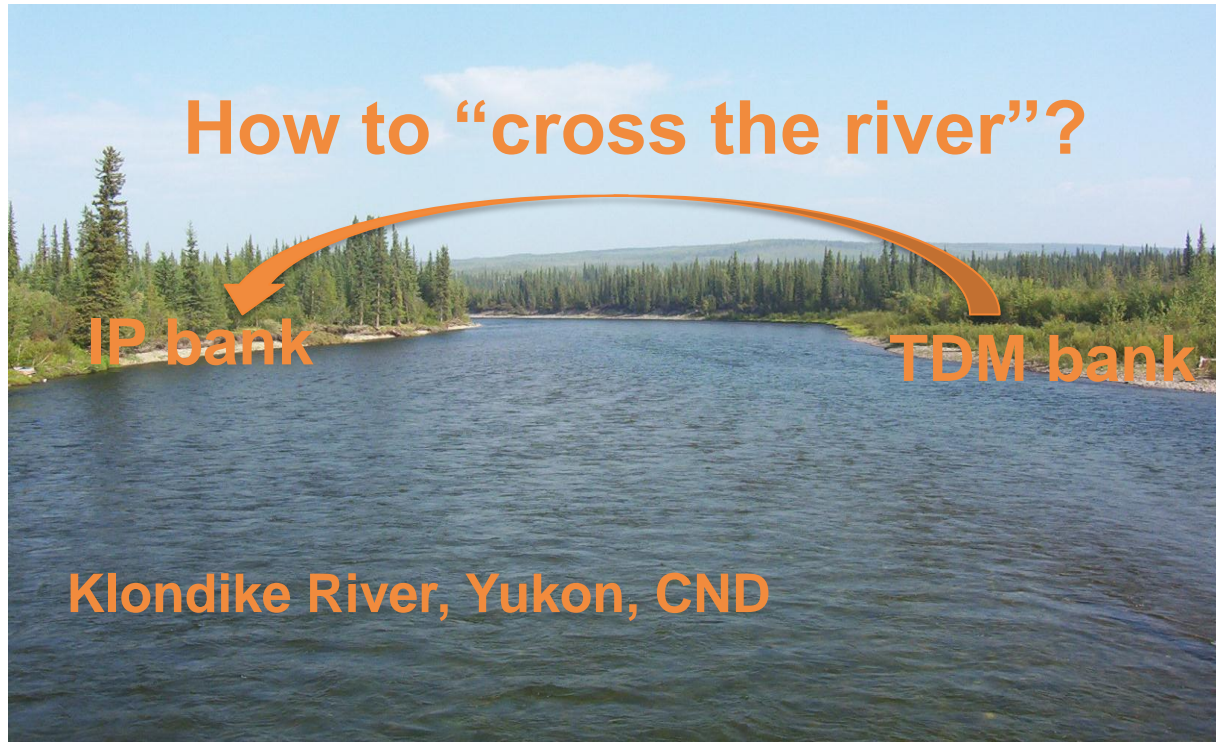**TELECOM ITALIA SPARKLE**

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Agenda

❑ **Where is the wholesale industry in 2014?**

❑ **How to migrate to IP?**

    ❑ **IPX (Y/N)**

❑ **What's next?**

    ❑ **the "*institutional*" answer**

    ❑ **the "*alternative*" answer**

❑ **….and the World Wide Web?**

Scope

❑ All session based services, such as voice and video

❑ Messaging service including RCS

❑ Data roaming services

❑ Data services such as IP Transit are out-of scope

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Where is the Wholesale industry in '14?

…in the middle of a transition

How to "cross the river"?

IP bank

TDM bank

Klondike River, Yukon, CND

- How fast are we moving? **SLOWLY than expected**
- Carriers are ahead of MNOs/FNOs
- Has the IP migration generated a sort of "Gold Rush"? **NO**

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How to migrate to IP?

…in different ways


Via Public Internet

- QoS is not guaranteed

- Security could be an issue

- In most of the cases, 1 contract for 1 service via 1 port

Via Private NNI / IPX

- QoS is guaranteed

- Security is guaranteed (separated by Public Internet)

- Multiservice agreement via 1 port with established business model(s)

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IP Packet eXchange from GSMA i³ forum
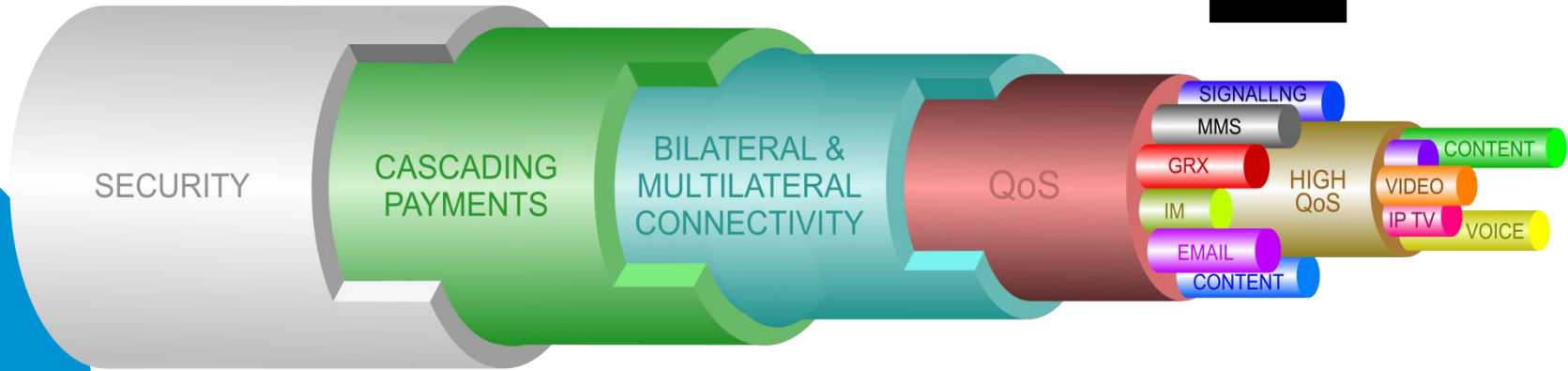
Multiservice / Efficiency

- Ubiquitous Service via single Gateway
- Multilateral commercial (new) agreements
- Flexibility & scalability

Quality

- Guaranteed QoS (E2E SLA, Reliability)
- Security (accountability, spam reduction)
- Separation from Public Internet

Cascading payments

- Cascading of revenues from End to End
- Payment by whoever perceives the value

Openness

- Open to everyone
- Ubiquitous access (MNO, FNO, ISP, ASP)

Industry implication

*IPX is **NOT** a new technology/protocol/service*
It is an innovative model for existing services

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The Industry Answer to IPX

- Multiple announcements proposing different models, offering different services with different capabilities → **Lack of clarity on what IPX is**

MNOs/FNOs (i.e. Service Providers)
- Weak demand from mobile industry delaying investments for IP migration
- Weak demand for some capabilities requested from GSMA
- Push expected from LTE/IMS deployment

OTTs (i.e. Service Providers)
- Theoretical interest?

Carriers (i.e. IPX Providers)
- Many IPX offers in the market: voice, mobile data, transport
- In general, high quality and trusted services are offered
- NOT all GSMA requirements fully met (e.g. QoS end-2-end control)
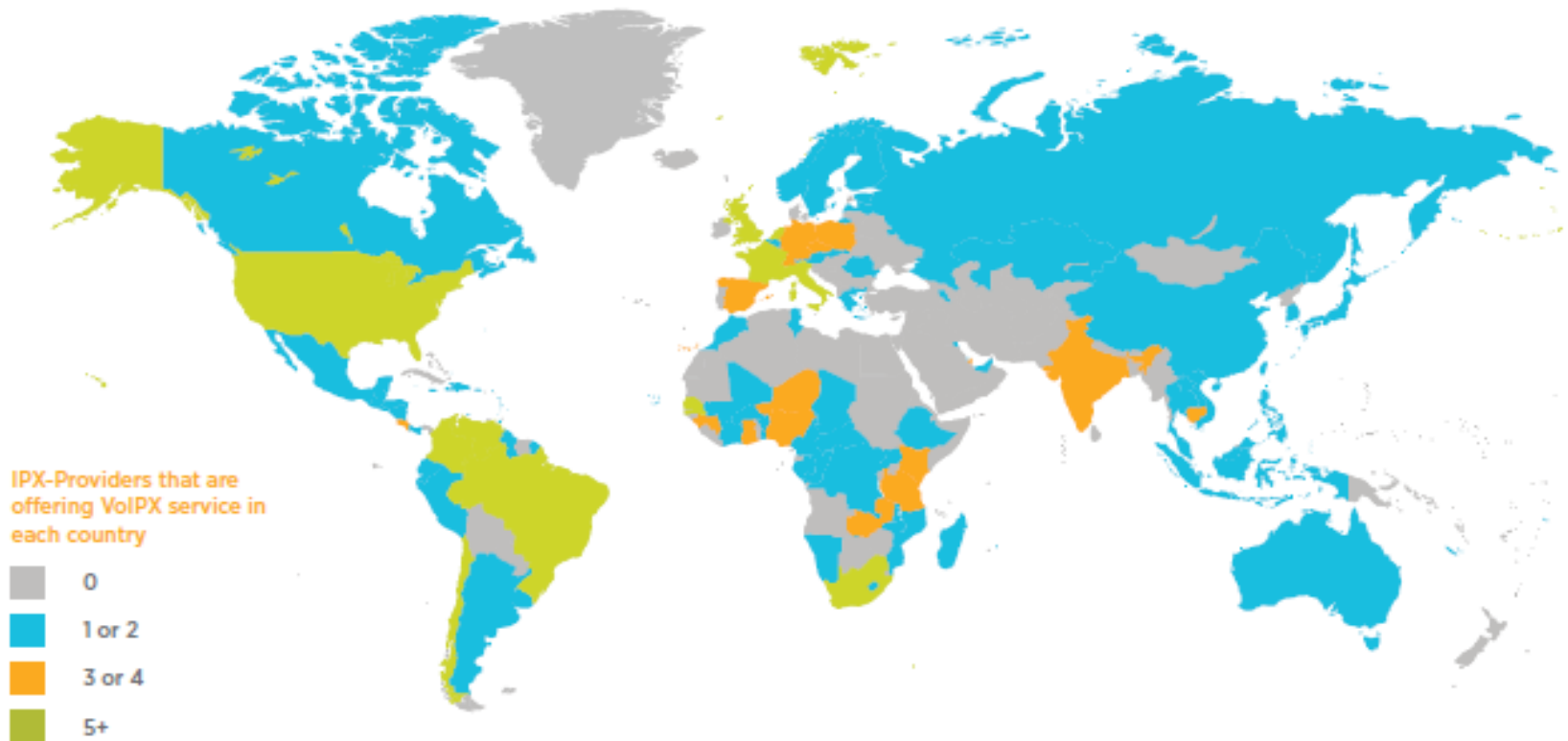- Different business models adopted

Industry implication

IPX is one way for implementing the IP migration but it is the only one based on a standardized framework (see i3f definition released in 2013)

VoIPX Direct & Indirect Map
Consolidating the growth of VoIPX with an 80% coverage increase...

IPX-Providers that are offering VoIPX service in each country
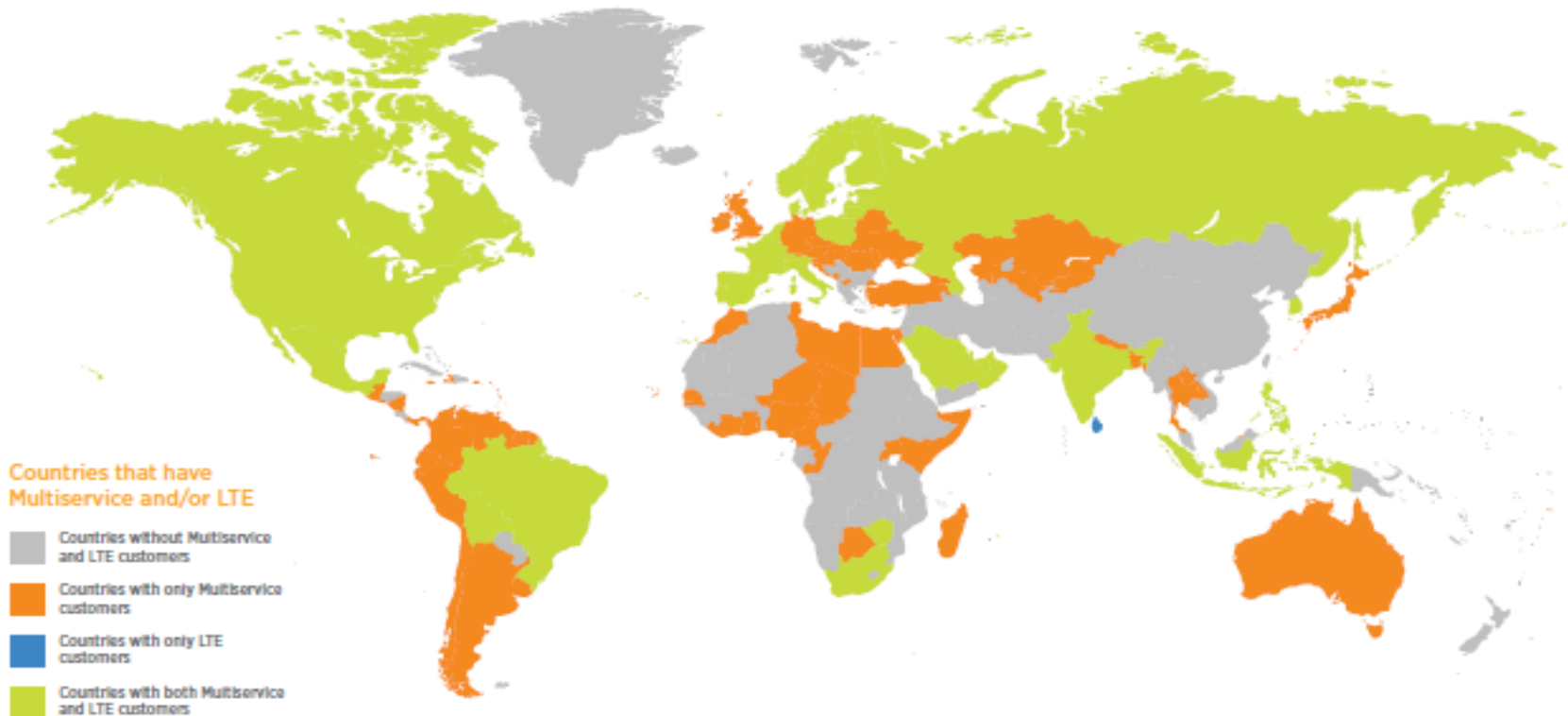
- 0
- 1 or 2
- 3 or 4
- 5+

This map was built from the 2013 and 2014 input of the following members: Aicent, BICS, Deutsche Telekom, Etisalat, iBasis, KDDI, Orange, PCCW Global, PLDT, SFR, Tata Communications, Telefonica Global Solutions, Telus, TI Sparkle, Telia Sonera International Carrier, Voxbone

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Multiservice and LTE Map

... and continuing the expansion with LTE as the new driver

Countries that have Multiservice and/or LTE

- Countries without Multiservice and LTE customers
- Countries with only Multiservice customers
- Countries with only LTE customers
- Countries with both Multiservice and LTE customers

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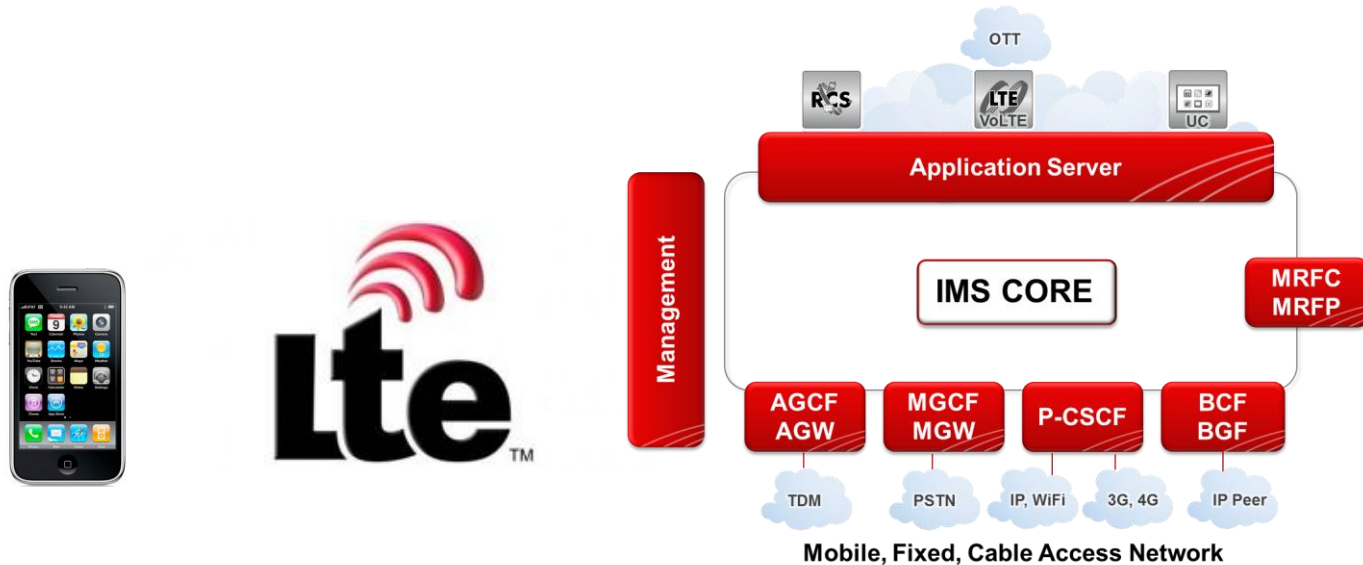# What's next? The "*Institutional*" answer
(in the Service Provider domain)

Evolved Packet Core (EPC)

It allows the offering, based on international standards, of:

- Voice/Video over LTE (SD/HD, with related supplementary and **roaming** services)

- RCS / messaging services

- Unified Communication services (for corporates)

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What's next? The "*Institutional*" answer

….. a short analysis

GSMA (forecasts by 2017):

- Networks: from 270 to 500 networks across 128 countries
- Coverage: from 20 % to 50% of the global population.
- LTE Connections from 176M (nearly 3% of total mobile connections) to 1B (nearly 13% of total mobile connections)
- **MNOs requests Carriers/IPX Providers interconnect to provide LTE Data Roaming service to final customers**

- Different versions: Joyn, Blackbird, Crane?
- Some tens (20-25?) of RCS-based services launched in Asia, Europe, Far East, Americas
- Commercial achievements: better in Asia than in other regions; **No real take-off**
- **Impressive growth of OTTs Apps**: at Dec. 2013, the average daily OTT messaging traffic has doubled that of the P2P SMS traffic (*source: Informa*)
- **Request for RCS Hubbing?: possible in the future**

RCS

joyn

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What's next? The "*Institutional*" answer
..... a short analysis

- Via Circuit Switch fall Back (CSFB) or Single Radio Voice Call Continuity (SRVCC)

- Few MNOs are committed to VoLTE SRVCC: Korea, HK, Japan, China, USA

- VoLTE SRVCC: very complex technology: CS + PS in 3G and LTE radio environments

- **Which are the thresholds (in terms of LTE network coverage and LTE customer population) that push a MNO to implement SRVCC?**

- No service and no market request for the time being (apart from corporate videoconferencing)

- The service availability will come, almost for free, when IMS/VoLTE is a market reality

- **Interoperability issue with OTT video services**
  - transcoding ITU-T H.264 codec vs.VP8 codec
  - addressing and related routing issues

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What's next? The "*Institutional*" answer
..... Industry implications

- **LTE Data Roaming is taking off….and it is a business opportunity for Carriers**

- **IMS-based services will arrive. When? ….it is not an easy answer**

- **VoLTE SRVCC is complex….but it is the only official standard for voice in a LTE environment**

- **RCS has not yet taken off. Video over LTE will follow VoLTE …. as addendums at marginal costs**

- **IPX is the "ideal" model for the full IP world …. it is neither unique, nor perfect but is standardised**

Interconnecting Networks

What's next? The "*Alternative*" answer (in the Service Provider domain)

2G / 3G

IP Platform

It allows the offering, based on proprietary codec / signalling protocol / addressing schemes of :

- Voice/Video (SD/HD, with **NO supplementary and roaming services**)

- RCS / messaging services

- Unified Communication services (for corporates)

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What's next? The "*Alternative*" answer
…from two perspectives

from OTTs e.g.

- Hundreds of million of customers;
- Very successful for videocommunication
- ARPU < US$10/year in 2012 *(source: Infonetics Research);*
- Consolidation in progress
- **Very harmful for Service Providers (MNOs and FNOs)**
- **"Traffic eater" but also a business opportunity for Carriers**

from TelCos (SPs and Carriers)

- **Attempt to provide OTT-like services offered in a bundle commercial offer exploiting Telco assets (e.g. numbering scheme, quality)**
- **Net API exploitation in order to enlarge the set of services/applications to be provided**
- Directly from major players, indirectly buying the service in outsourcing from a 3rd party provider
- Some failures, some positive results, no "big" success

What's next? The "*Alternative*" answer
..... Industry implications

Cheaper and simpler than the "institutional" approach

Walled garden, interoperability and quality issues

For Telcos and Carriers: a multiservice approach gets more interest from final customers

Partnerships between Carriers and OTTs are ...unavoidable

Do OTTs interest IPX? Little Interest, so far.

Interconnecting Networks

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…and the World Wide Web?

Audio and Video Communication in the browser

- Based on new language: **HTML5 and Java-based APIs**
- Standardisation very advanced (W3C, IETF, ETSI, 3GPP) with interoperability between some browsers available
- WebRTC -> public network gateway (almost) available from vendors
- Applications over the top: **For a number of B2C services (travel, housing, gov. agencies…) services**
- Applications towards public network:
  - **B2C services (e.g. contact centres) starting from 2015?**
  - **C2C communication starting from 2016?**

| Industry implication | *WebRTC is another technology that moves traffic away from Telco networks but it is also an opportunity for Carriers* |

There is _not_ a unique path

- The scenario towards a full IP network involves very different technologies for different market segments
- It calls for different commercial answers

- Carriers should carefully select their own business positioning and act accordingly leveraging

their role of enabler for multiple services at the international scale

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What we did

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Voice

HD Voice

(HD) Video conferencing

Voice over IPX

IPX Transport

Video over IMS

VoLTE

SIP Services (over IMS)

LTE Data Roaming

Inter IMS Signalling Interface

Global Signalling

SMS/MMS

....and what we plan (for 2014-'15)

IMS VoLTE	*IMS Signalling Rel. 3 with Supplementary Service*

IMS VoLTE	*Technical and Commercial analysis of Roaming services*

WebRTC	*Commercial and Technical analysis of interworking with Public Network*

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Thank You

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