Monetize IPX with Multimedia interconnection

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Strengthen & Broaden your business
--Huawei keynote in 3th i3 forum

Strengthen interconnection business

Interconnection requirements
• Secure legacy voice revenue
• New services interconnection

New model requirements
• More wholesale services, even your own subs
• IT tech., All IP BB infrastructure facilitate hosted service model
• ICT & OTT enable fast innovation
The moving industry bring new business opportunity to IPX

Traditional service over IPX
- Messaging hubbing services
- Voice termination service
- GRX based data roaming
- SS7 and IP signaling routing

Better monetize your IPX asset with:
- Diameter routing for LTE roaming
- HDVC interworking
- RCS/RCSe hubbing
- MBB
- FBB
- joyn
LTE roaming: an immediate need

Important Revenue Resource
- Mobile data roamers to generate over $35bn in 2017, representing 40% of roaming revenues.
- Western Europe will be the highest proportion of the global mobile data roaming revenue.
- LTE data roaming will be the next growth driver.

-- Juniper Research

Users’ Satisfaction
- Ubiquity – anywhere, anytime
- New/more services
- Higher speed

Maturing Ecosystem
- Global wholesaler started LTE signaling exchange business
- Accelerating DRA deployment to fuel the LTE roaming service rollout on Y2013
- Fast increased LTE devices paved the way for global LTE roaming.

GSA confirms 666 LTE user devices launched at Feb 2013
LTE roaming challenges: MESH is a mess!

Needs from MNO

- Minimize the cost of building roaming connections
- Simplified topology
- Provides mediation between diameter implementations
- Facilitate interworking with 2G/3G networks
Made it easy with DRA Hub for LTE signaling exchange

Visibility

1. Signaling Analytics (Intelligent Analysis Engine)

Predictability

2. Signaling traffic forecast
3. Planning, marketing forecast

Manageability

SPS
(DRA is the Initial phase)

Operator A
DA

Operator C
DA

Operator B
DA

Operator D
DA

DA: Diameter Agent
Up-sell to your existing SS7 signaling exchange customers

New offer
- LTE Signaling exchange

Tradition
- GPRS data exchange
- Voice/SMS Signaling exchange

Global wholesalers already started LTE signaling exchange business

Interconnect Shipment Forecast

- SP Interconnect

Comment: From Huawei Business department

LTE roaming requirement is there
Video Conferencing is changing from CLOSE to OPEN

Video conference is undoubtable opportunity

- Wainhouse: Carrier hosting conf revenue: $9.6bn in 2016

![Chart showing survey results]

From intra to inter-enterprise

Which of the following features do you consider important when considering suppliers of HD video conferencing systems?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Very important</th>
<th>Fairly important</th>
<th>Not very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to interwork between different equipment vendors</td>
<td></td>
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<tr>
<td>Ability to hold video conferences between different companies</td>
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<tr>
<td>Operates over private IP connections to deliver very high quality</td>
<td></td>
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<tr>
<td>Ability to use over public Internet connections for lower networking costs</td>
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<tr>
<td>Provision of a turnkey system including all equipment and furniture</td>
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* OVUM’s survey on top 600 companies worldwide
The reality is not that simple: there are lots of fragmentation

Different than just signaling or media or standards

1. IMS/SIP based conference
2. H.323 solution
3. Vendor specific TP solution
4. UC / Web Conference
5. 3G video call

Voice algorithms

<table>
<thead>
<tr>
<th>Codec</th>
<th>Spectrum</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.722</td>
<td>7 KHz</td>
<td>Best suited for H.323 and SIP, Better for interoperability</td>
</tr>
<tr>
<td>AAC-LD</td>
<td>8-96 KHz</td>
<td>Used for most high-end H.323 video conferencing</td>
</tr>
<tr>
<td>SILK</td>
<td>8-24 KHz</td>
<td>Skype. Most of the rest of the pack skipped this one</td>
</tr>
<tr>
<td>iSAC</td>
<td>16 or 32 kHz</td>
<td>GIPS in origin. Got open source by Google recently</td>
</tr>
<tr>
<td>AMR-WB</td>
<td>16KHz</td>
<td>The wideband voice codec of choice for VoLTE</td>
</tr>
</tbody>
</table>

Video algorithms

- Video Codec: H.261, H.263, H.264, MPEG4 ...
- Video Resolution: QCIF, CIF, 4CIF, 720P, 1080P
- Standard Organizations: 3GPP, ITU-T, IETF, GSMA/HDVC, CCSA
Introduce a HDVC hub to bridge all the fragmentation
PCCW Global’s global HDVC center practice

**Challenges:** PCCW global has mature and worldwide MPLS network, an seek new products with proportional usage based revenue

**Solution:** Deploy HD Video Conference network to connect different customers and partners, and finally establish a global HD video exchange ecosystem, retail conference and video calls services to small carriers, enterprises and interconnect with large carriers

**Benefits:** Develop usage based revenues over the global MPLS network and seize the global video market opportunity
Global interoperability is RCS/RCSe success factor

Telecom communication world
- Call
- Chat
- File Share
- Video Share

• ID continuity
• highly interoperable
• QoS (real-time services)

Internet-based (OTT) communication world

RCS/RCSe subscriber expected to reach 15m in 2013
Keep accelerate deployment along with LTE/VoLTE

Require IOT in a given country today to have IOT across all nations tomorrow
Build up RCS hub to support all RCS features interworking

SP sign one contact with RCS hub and solve all the interoperability issues with other SPs

- **IMS interconnect** (subscribe, capability discovery, routing policy, http interface should be supported)
- **Instant message, File Transfer & Pic Sharing** must support **MSRP** protocol in signal plane and media plane
- **RCS Services** billing may be different with traditional voice call and SMS service
Global interoperability is an RCS/RCSe success factor

Lesson for RCS - interoperability is the key reason for the success of their IMS-based IM services in South Korea.

Source: South Korean Case Study

---source from GMSA

IPX plays important role in RCS/RCSe industry chain for global interoperability
Thank you

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