Role of IPX Carrier in VoLTE and WiFi Roaming

Ashish Jain
Director Solutions Marketing, GENBAND
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GENBAND

• Serving over 700 of the world’s largest service providers, IPX Carriers and hundreds of large enterprises
• Operating in nearly 80 Countries
• Approximately 1,600 Employees
• 5 R&D Centers of Excellence

Network Modernization

Mobility & OTTaaS

UC As a Service

Embedded Communications

298 Million
IP Sessions Shipped

18 Million
UC Ports Shipped

50 Million
Cloud Users

Over 41 Million
Lines Migrated to IP

VoIP

Messaging

Conferencing

Mobility

Video

Collaboration

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GENBAND Confidential and Proprietary
Discussion Today

5 Major Mobile Trends Impacting IPX

Opportunities For IPX Carriers

Role of IPX in VoLTE Roaming

Role of IPX in Carrier Wi-Fi Roaming
5 Major Mobile Trends Relevant For IPX
4G LTE Is Becoming Mainstream….5G In Works

A Lot of Growth Potential In LTE Roaming

Key 5G Principals

- NFV & SDN
- HetNet
- Low Power Low Through Networks
- > 1Gbps Downlink

More Mobile Data Exchange
VoLTE – Gaining Momentum

2014
19 Operators Invested in VoLTE

2015
90+ Operators Plans to Invest in VoLTE

(Source: GSA, GSMA VoLTE Map)
Carrier OTT On The Rise

Worldwide Mobile VoIP Subscribers

“Those not embarking on carrier OTT plays may find themselves challenged by the new communications industry paradigm.”

Juniper Research – Future Voice Strategies, Jan 2014
VoWi-Fi Adoption To Exceed VoLTE

- VoWiFi: 53% in 2019
- VoLTE: 41% in 2019
- VoIP: 6% in 2019

Minimum of Use (Billions) per Year

Source: ACG, Cisco VNI Global Mobile Data Traffic Forecast, 2014–2019

# of Cellular Capable Devices: 542 Million
# of Wi-Fi Capable Devices: 1.9 Billion

- Tablets
- PCs

Wi-Fi calling
FREEWHEEL
Sprint
Wi-Fi First™
republic
Carrier Wi-Fi – A New Trend Across The Industry

Carrier-grade Wi-Fi hotspots 14% today, 72% by 2018

50m Wi-Fi hotspots today, 340m by 2018

85% of MNO’s to invest in carrier Wi-Fi by 2016

Sources: (1) Infonetics (2) iPass/MaravedisRethink (3) Real Wireless
Opportunity: Enabling New Peering, Roaming & Federation

1. LTE (600+ Networks)
2. VoLTE (6B+ Minutes)
3. OTT (2B+ Subscribers)
4. VoWi-Fi (8B + Minutes)
5. Carrier Wi-Fi (340M Hotspots)

Solve New Challenges:
- Network Security
- Service Interworking
- Service Scalability
- Peering & Roaming
- Cost Efficiencies
VoLTE Roaming Use Cases
VoLTE Interconnect & Roaming With Home Routed Media

IPX Value Add:
1. QoS Transit
2. Interworking – IMS, Media
3. Bilateral and Multilateral
4. Reachability
VoLTE Interconnect & Roaming With RAVEL Local Breakout

IPX Value Add:
1. QoS Transit
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Operator C performs transit and routing function (TRF) and locally anchors Media
IPX Hosted RAVEL Loopback For Visited Network

IPX Value Add:
1. QoS
2. Interworking - IMS
3. Bilateral and Multilateral
4. Reachability
5. Hosted Transit & Roaming Functions
Carrier Wi-Fi Roaming
Use Cases

1. Mobile Subscriber Roaming In Wi-Fi Network Provided by MNO

2. Mobile Subscriber Roaming In Partner Wi-Fi Network

3. Wi-Fi Subscriber Roaming In Another Wi-Fi Network

Using SIM Based Device or Non-SIM based
Legacy Wi-Fi Hotspot or NG Hotspot 2.0
Mobile Subscriber Roaming In Wi-Fi Hotspot Provided By MNO

- Enables roaming onto Wi-Fi network – the same way a cell phone roams between cellular networks,
- Handset detects a Hotspot 2.0 enabled Access Point and authenticates to this using credentials stored in the subscriber’s home MNO,
- Wi-Fi connection is made automatically, no interaction needed with the subscriber,
- Data is then offloaded from the Wi-Fi network, or tunnelled to the MNO to their managed interconnection.
Mobile Subscriber Roam In Partner Wi-Fi

- MNO customer attaches to trusted Wi-Fi Access Point
  - Manually, for APs not compliant to Hotspot 2.0 (IPSec tunnel required to SAMOG GW)
  - Automatically, for APs compliant to hotspot 2.0 (No IPSec tunnel required)
- Customer sends SIM authentication credentials and GRX/IPX proxies them to the appropriate MNO
- Upon successful authentication, customer data traffic is sent via GTP to the home MNO network
Wi-Fi Roaming and Interconnect provided by MNO or MSO using WRIX Hub

- Direct routing between Wi-Fi operators network with Roaming support
- Local Internet Breakout
- EAP-SIM authentication if WRIX hub provided by MNO
Lots of New Opportunities For IPX Carriers

- Quality VoIP Interconnect
- HD Voice Interconnect
- Video Interconnect
- Interworking as a Service
- RCS Interconnect
- HD Voice Interconnect
- Video Interconnect
- Interworking as a Service
- RCS Interconnect
- LTE Roaming
- VoLTE Roaming
- Wi-Fi Roaming
- VoWi-Fi Roaming
- Hosted Applications
- Hosted SBC
- OTT Apps & Federation
- Wholesale Enterprise SIP Trunks

Enhance
Extend
Overlay

GENBAND Can Enable