

Build VoLTE Services using NFV & Cloud

Reduce complexity and increase RoI

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INDIA 2017 25th & 28th JULY 2017
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Oracle technology



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best of breed technology



3 Messages in This Session

- 1 Moving mobile voice services to VoLTE is inevitable
- 2 Designing, installing, and operating a VoLTE service can appear to be complex, rigid, and expensive
- 3 NFV based solutions are simpler, flexible, reduce costs, can ease your transition to the cloud – but choose carefully

VoLTE and VoWiFi Global Launches

As of May 5th 2017 according to the GSMA



Only **17%** of CSPs who launched LTE offer VoLTE



***“Spectrum Efficiency ...
Stepping stone for more advanced services ViLTE, RCS”***

Orange, launched VoLTE in Romania Sept. 2015 followed by France Jan. 2016



“Network Optimization”

NTT DoCoMo, launched VoLTE in 2014 +19M VoLTE users as of Oct. 2016



“Enriched User Experience”

Rogers, launched VoLTE in March 2015



Verizon, launched VoLTE Sept. 2014, VoWiFi March 2016 15M VoLTE Subscribers as of April 2016



**Why VoLTE and VoWiFi?
In CSPs own words ...**

“Offer differentiated all IP Services”

Swisscom, launched VoLTE and VoWiFi in summer 2015, 30% call volume generated over VoLTE



“NFV Network Transformation”

AT&T, launched VoLTE in 2014, 34M subscribers as of Q1 2016



“Improved indoor connection ... Reduction in Churn”

Three UK, launched VoWiFi May 2014, in 2015 launched VoLTE +2.3M VoLTE users as of Sept. 2016 EE, launched VoWiFi in April 2015, VoLTE in Feb. 2016 ~234K unique VoLTE users/day



findings from discussions with operators at various conferences in 2014-2016

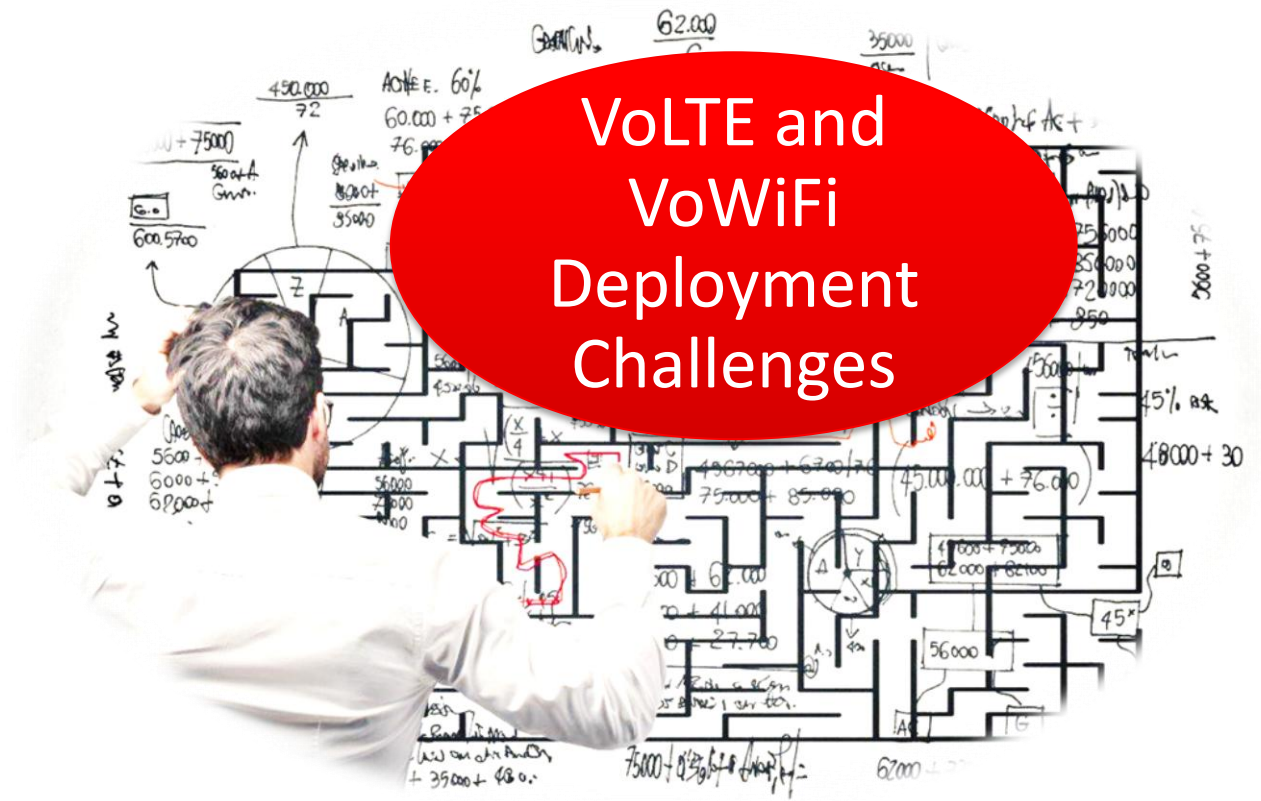
IHS TECHNOLOGY

Service Provider VoIP and IMS Equipment and Subscribers Quarterly Market Tracker: Regional, Q1 2017

“EE learned first-hand that the end-to-end integration from device through to the IMS core was incredibly intensive ... “ EE

“VoLTE specifications are too ambiguous and we needed to collaborate with vendors (networks, chipset, UI) to make it happen ...” NTT DOCOMO

“Turkcell admits to challenges with its VoLTE and VoWiFi deployment, including provisioning and supplementary service data parity between circuit switch and VoLTE; IN service experience continuity; RAN optimization for VoLTE, VoWiFi location information; VoLTE interconnect and complicated network architecture across 2 vendors.”



findings from discussions with operators at various conferences in 2014-2016

IHS TECHNOLOGY

Service Provider VoIP and IMS Equipment and Subscribers
Quarterly Market Tracker: Regional, Q1 2017

Three Strategies for Building VoLTE Network

- **High Performance Purpose-Built Platform Based**
 - Build on your existing network
 - Get predictable, dependable performance
 - Avoid uncertainty and lack of standardization
 - But select your elements wisely so you can reuse them once you move to NFV
- **Virtualized & Cloud Oriented**
 - Be on the cutting edge of innovation
 - Build your next generation network from the ground up
 - However, be ready to accept risks associated with evolving technology
 - Choose a vendor whose experience spans telecom, virtualization, and cloud
- **Managed or Hosted by 3rd Party**
 - Sidestep complexity and embrace a tested and proven solution
 - Lower your CapEx and OpEx
 - linear scaling ensures pay-as-you-go approach
 - However, be ready to cede controls of your network to someone else
 - Choose a reliable vendor with well-tested components

Conclusion: Given the pros and cons for all three approaches, there's no one right answer for everyone.

CSPs see NFV and the cloud as their best bet to improve their competitive position.

Opportunity to maintain or improve competitive position:



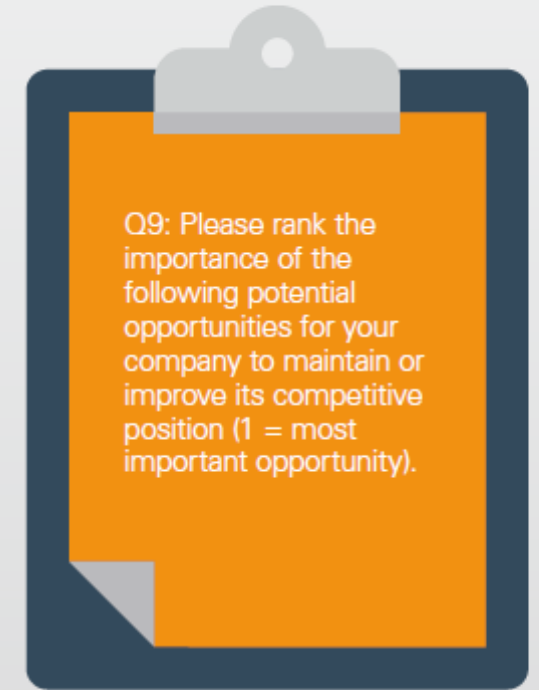
Opportunities

Ranking

Implement an NFV (network function virtualization) architecture	#1
Use a communications cloud service	#2
Use business intelligence and analytics	#3
Invest in omnichannel customer experience	#4
Deploy agile Business Support System platforms	#5



Q9: Please rank the importance of the following potential opportunities for your company to maintain or improve its competitive position (1 = most important opportunity).



Benefits of NFV



Lower CapEx



Lower OpEx



Greater Flexibility



Improved Scalability



Enhanced Security



Better User Experience



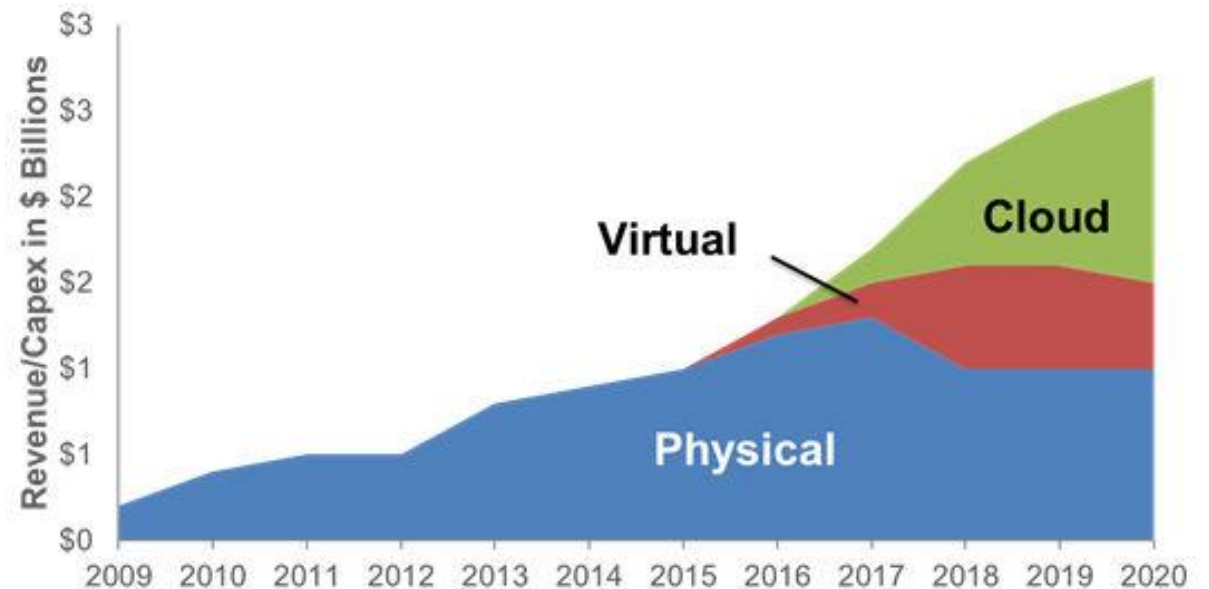
Faster Provisioning



Integration with Infrastructure

How can VoLTE deployments benefit from NFV?

- NFV is fundamental to providing the scale, flexibility, and economics needed to compete in plateauing voice revenues
- NFV enables cloud migration of services and brings more innovation opportunities
- Last remaining challenges to adopting NFV, such as, security, encryption, and media processing, are being solved



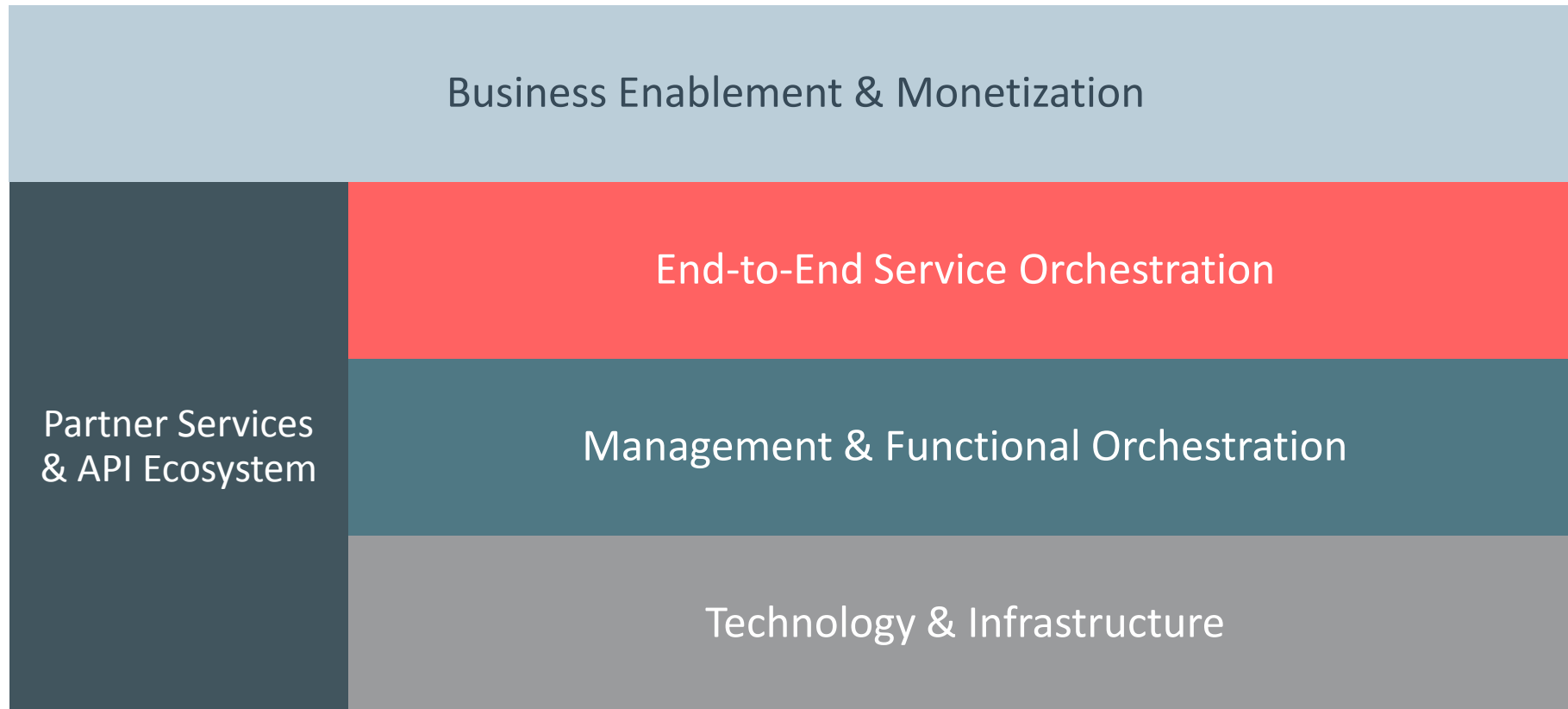
Source: Exact Ventures, June 2016

Importance of VNF selection

- Platform Independence
- Efficient Architecture for Virtualized Platforms
- Carrier-Grade, Feature Parity, and Co-Existence With Physical Counterparts
- Rapid Onboarding
- Contemporary Software Architecture
- Fit Into an Open Orchestration Framework

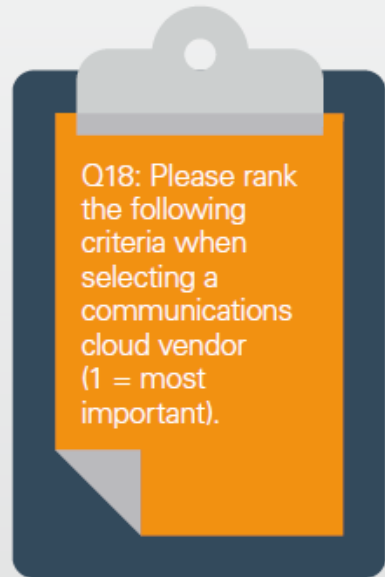


Constructing the Telco Cloud




A complete cloud-centric network architecture consists of several distinct layers that encompass technology to business including support for partner ecosystems.

CSPs see quality and cost as table-stakes but expect much more from their cloud vendors.



#1 Quality

(Capabilities, scalability, performance, reliability)



#2 Reduce Cost

(CapEx, OpEx, TCO)



#3 Reduce Risk

(Security, privacy, regulatory)



#4 Connectivity

(APIs, integration, interoperability, ecosystem)



#5 Simplification

(Saves time, reduces effort, avoids hassles)



#6 Vision

(Roadmap, story, leadership, innovation)



Why Oracle?

- The Oracle Advantage
 - Comprehensive portfolio of PNFs, VNFs, and orchestration functions
 - Deep telecom expertise, cloud leadership, and IT skills
 - Trusted partner in your network's NFV transformation
- To learn how Oracle can be your trusted partner on the path to NFV transformation, visit <https://www.oracle.com/goto/NFV>

Oracle Communications Network Function Virtualization

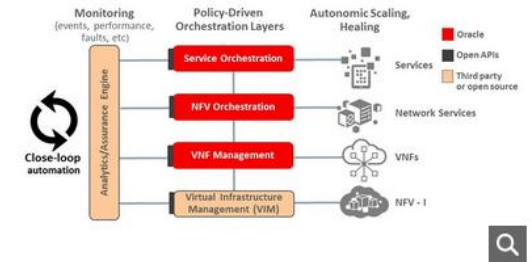
Virtualize, Orchestrate, and Automate

Become more agile as you transform your business and network to deliver cloud-ready communication services.

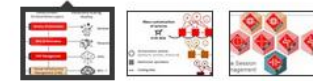
 **Data sheet:** Oracle Communications' Portfolio of VNFs (PDF)

 **Data sheet:** Oracle Communications Service and Network Orchestration Solution (PDF)

 **Article:** Oracle sees big NFV moves



Network Function Virtualization enables autonomic, closed-loop operations.



Become NFV Ready

- Increase agility with an efficiently designed NFV architecture
- Deliver real-time, on-demand service offerings
- Quickly migrate to carrier-grade, feature-parity networks, co-existing with physical counterparts
- Unlock the full potential of network agility investments with end-to-end orchestration
- Increase automation through closed-loop, self-healing, and scaling

→ On-demand webcast: Have CSPs Gotten Virtualization Back on Track?



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Q&A

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Applications & Platform Services

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