



Aalto University
School of Electrical
Engineering

ELEC-E7830 Value Network Design for Internet Services

Case Cumucore – Scenario Planning

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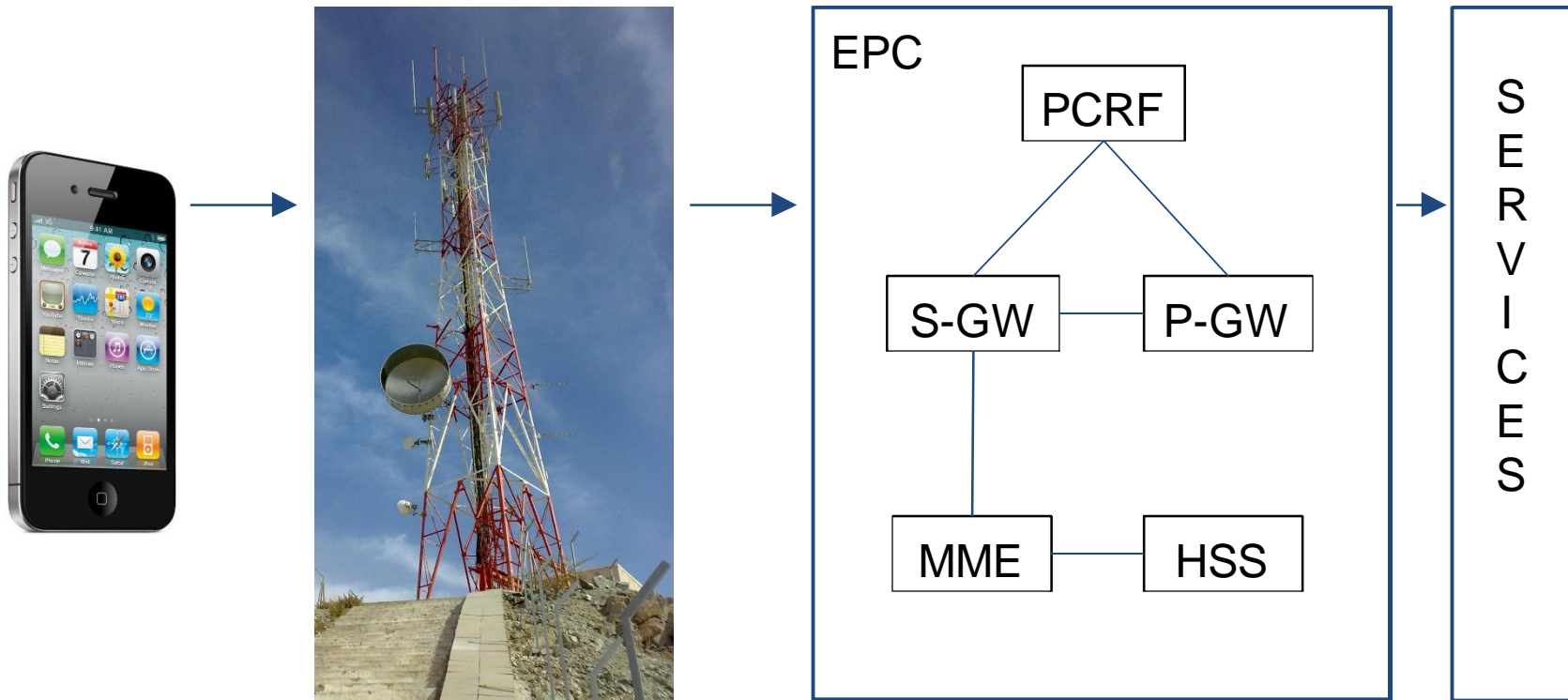
Niko Perera

Company Case Description

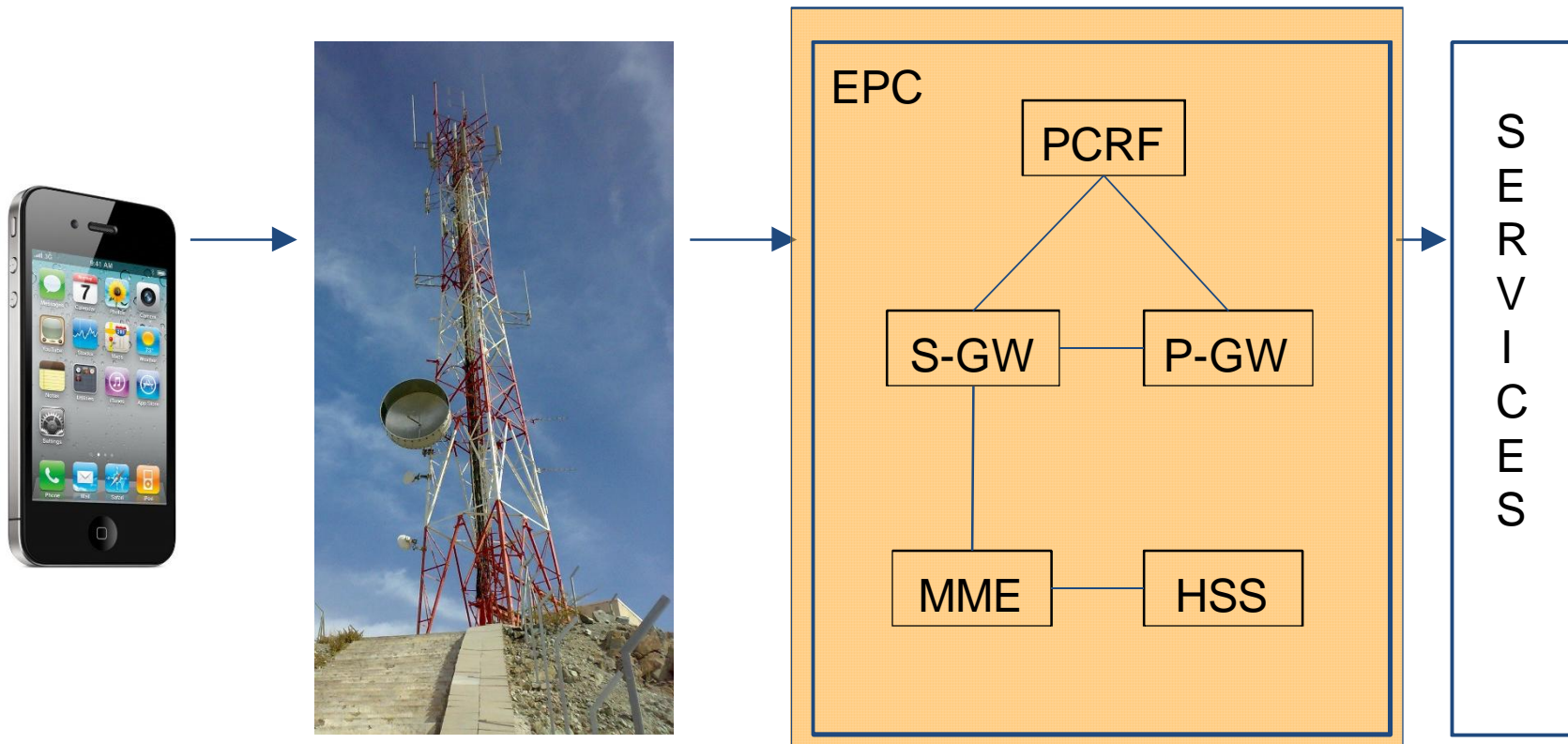
Cumucore

- Originated from SIGMONA project
- Aalto startup
- Cumucore is selling vEPC
- How to bring a light-weight cloud-based EPC on the market?

Technical description

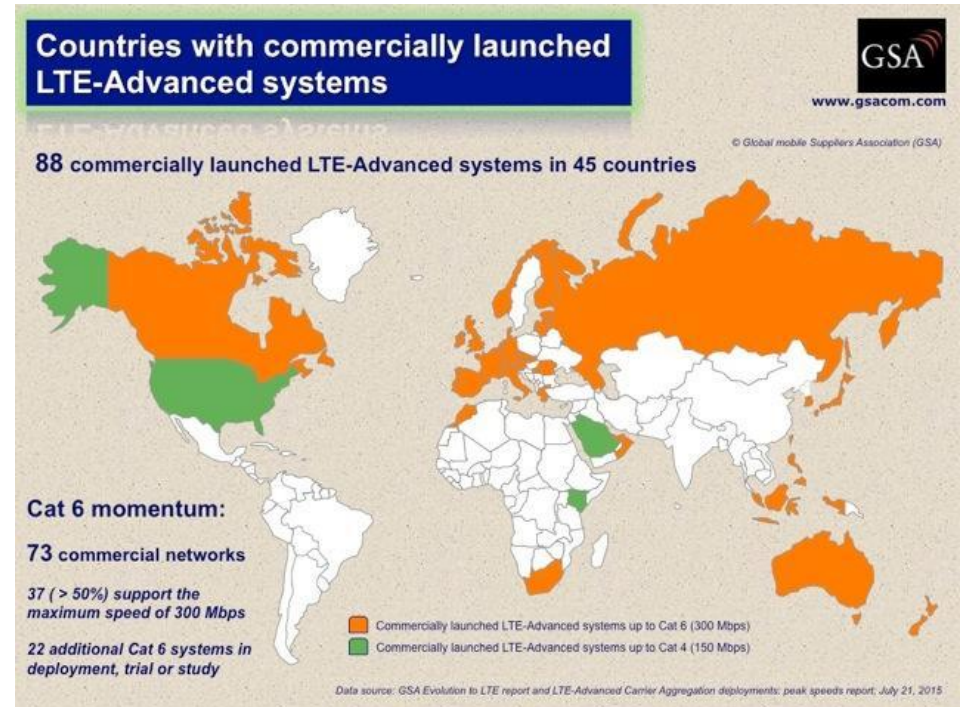


Technical description



Scope Definition

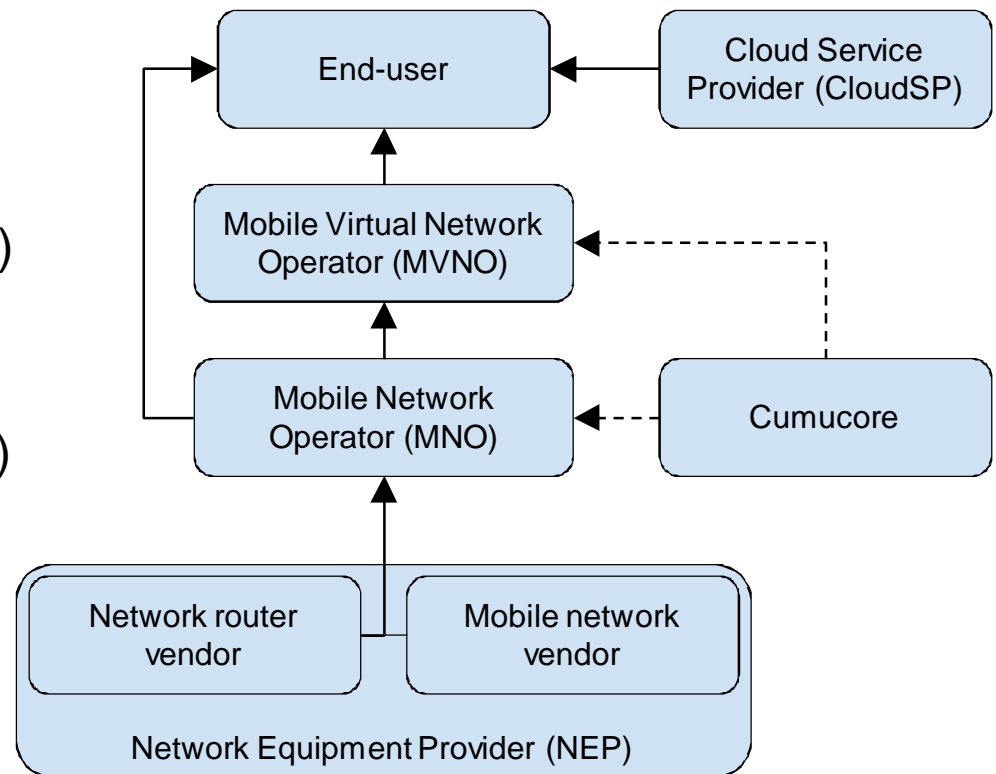
- Scope
 - Virtualized Packet Core
- Time frame
 - 2020; until 5G standard
- Markets
 - Developing countries (i.e. LATA)



(GSA Evolution to LTE report and LTE-Advanced Carrier Aggregation deployments: peak speeds report; July 21, 2015)

Major Stakeholders

- Customers
- MNOs without LTE capability, New entrant MVNOs, One time operators (e.g. large scale events)
- Competitors
- Alcatel, Cisco, Ericsson, OpenEPC, Comptel (Hitachi EPC)



(Modified from: Bai, X. (2013). *Scenario Analysis on LTE mobile network virtualization* (Master's thesis))

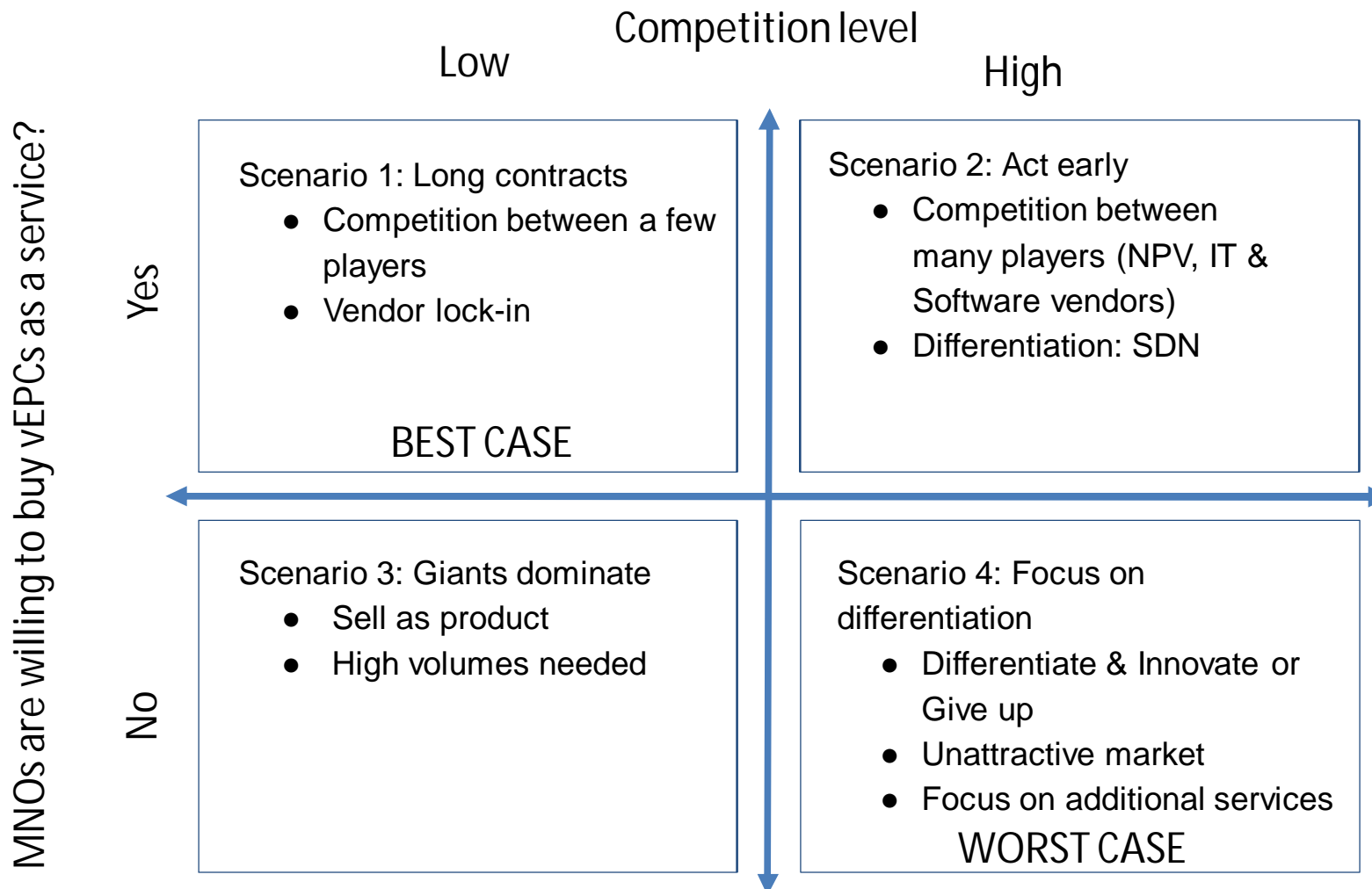
Key trends

- People expect good connection everywhere (QoS)
- Operators are looking for ways to increase capacity, coverage and at the same time reduce operating costs
- Number of devices is increasing rapidly (IoT)
- Content consumption has been increasing (streaming)
- New hidden players, such as NEPs, which the end-users cannot see are becoming stronger

Key market uncertainties

- **What will be the competition level of the EPC market?**
- **Will MNOs buy vEPC as a service or as a product?**
- Will virtualization of LTE lower the costs significantly?
- Will few NEPs, IT vendors or software vendors provide mobile infrastructure and technical support in the future?
- Will the MNOs expand to the partly in-house Internet service or stay in providing mobile services?

Possible Scenarios



Conclusion

- Key uncertainties:
 - What will be the competition level of the EPC market?
 - Will MNOs buy vEPC as a service or as a product?
- Key to success: Enter market early and secure position with the big players
- Best Scenario: Low competition, vEPC as a service
- Worst Scenario: High competition, focus on additional services and vEPC as a product

Thanks!

Q & A