Connections are limitless, the network is not

A living network thinks ahead and continuously transforms
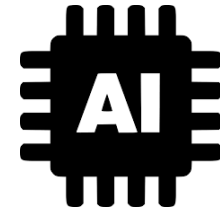
Telcos are desperately searching for business cases

IoT **5G** **SDN + NFV** **EDGE COMPUTING** **AI**

- IoT, 5G, SDN/NFV and Edge Computing are maturing technologies

- But at the moment, it is difficult to see how these technologies are making money for telcos

- The business cases for AI are easier, evolving and more diverse

Struggle to find a winning IoT strategy

Four potential roles for telcos,

- *Connectivity* provider
- *Platform* provider (PaaS capabilities, API's)
- *IoT solutions* provider (vertical or horizontal applications)
- *E2E IoT operator* (with SLAs)

but yet to pin down the strategy

- 78% of telcos see IoT as the 2nd non-traditional revenue generator (IBM survey, 736 CxOs)
- 70% of telcos lack a well defined strategy for taking on the IoT opportunity (Ericsson survey)

5G: Vendors enthusiastic, Market muted 5G

5G: Patchy to start,

- *US market* has talked itself into a 5G war
- *South Korea* and *Japan* seem determined to head off on the 5G path
- *Elsewhere* though, the enthusiasm for 5G is a little more muted

and many telcos are still skeptical

- *BT chief* warns on 5G business models
- *Vodafone CTO:* 5G industry needs realism
- *Orange Dep CEO:* 5G business case still up for grabs
- *Telenor CEO:* 5G use cases must come first
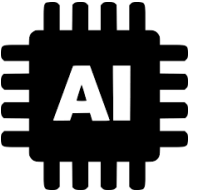
NFV & Cloudification: Essential for 5G

SDN + NFV

Designing networks for the cloud,

- Network virtualization is key to enable the 5G future
- Virtualization at scale requires *cloudification*
- *Automation* is a must
- It is all about increased *agility*

but network virtualization is not easy

- *Need to make significant organizational changes*
- *Need to attract the right skills and retain employees*
- *Need to make cultural changes*
- *Need to integrate IT/NW divisions*

Intelligent Cloud or Intelligent Edge?

The edge too important to ignore,

- *Edge* Computing reduces volume of *movable data*
- Reduces *latency*
- Improves *security* and protects *privacy*
- Copes with intermittent connectivity

but the key questions for telcos are

- *Where is the business case for the telco edge?*
- *How much demand for low-latency?*
- *What edge services to offer?*
- *How to compete with the big cloud players?*

AI: Creating a living network

Network automation is a must,

- Easier network *scaling*
- Better *SLA* management
- Speed up *TTM* of new and innovative services
- Better *agility*/ability to react to change
- Better operational *efficiency*

and many telcos plan to use AI for:

- *Predictive maintenance* (80%)
- *Self-diagnostics*, automatic (76%) problem detection
- Improving *traffic management* (67%)
- *Self-healing* of networks (57%)
- Intelligent *network operations* (49%)(IBM research)

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