Architecture evolution – some observations on recent developments

ICIN 2013
Ulf Olsson, Ericsson AB
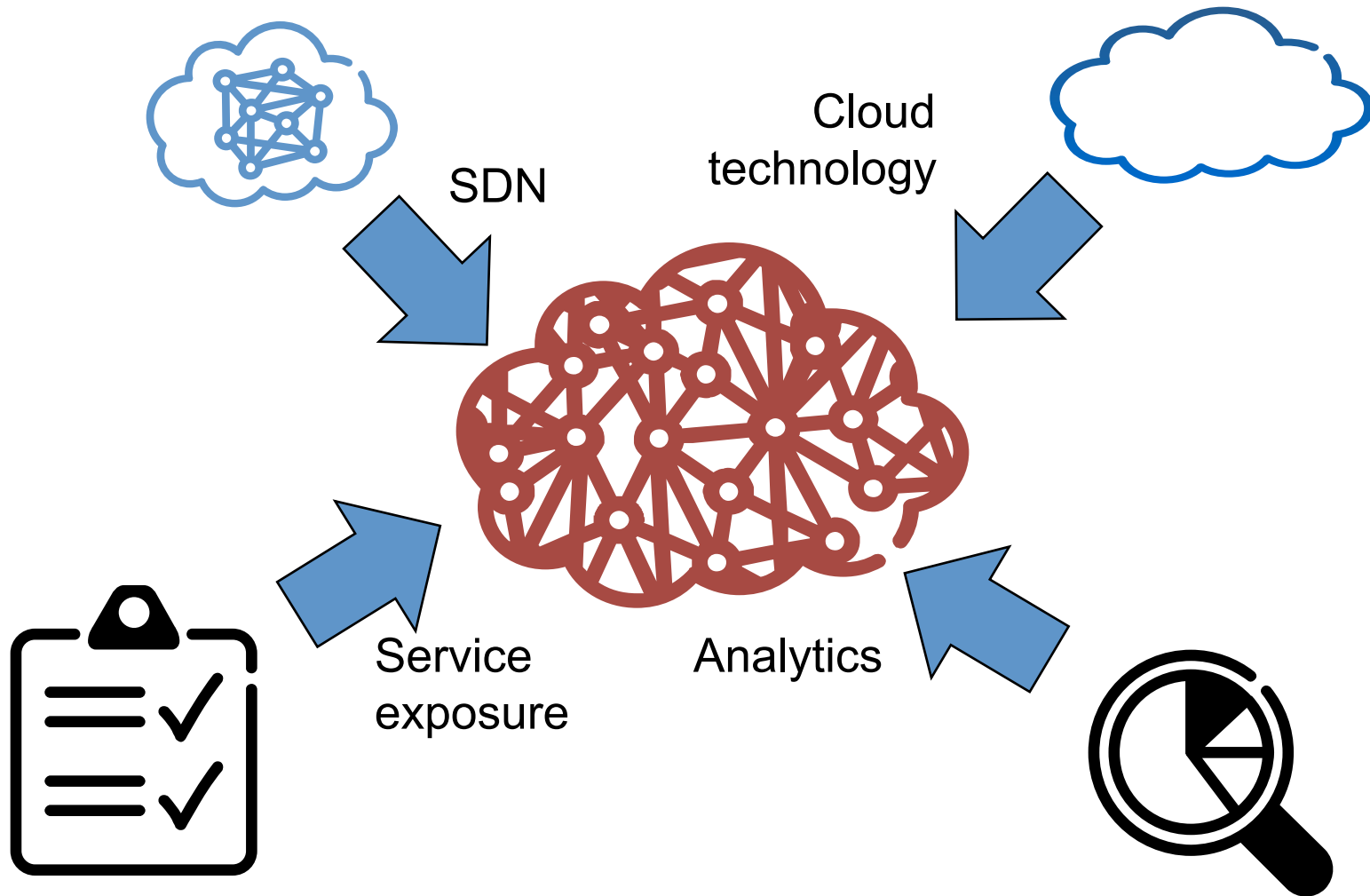
ERICSSON

Or:

Architecture evolution – convergence or buzzword bingo?

(but maybe not…)

The network evolves

SDN

Cloud technology
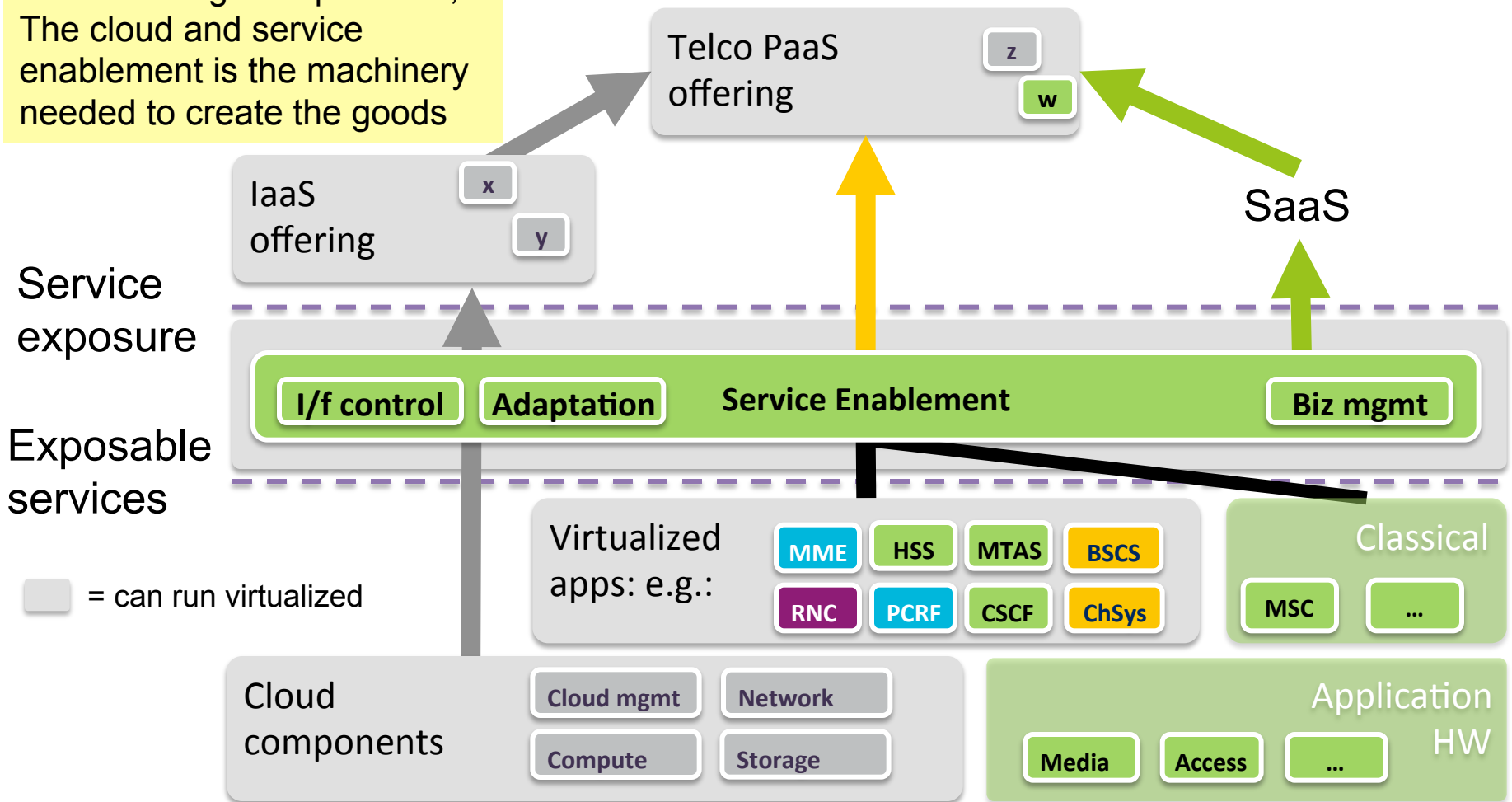
Service exposure

Analytics

Independent trends, or related?

XaaS and the cloud
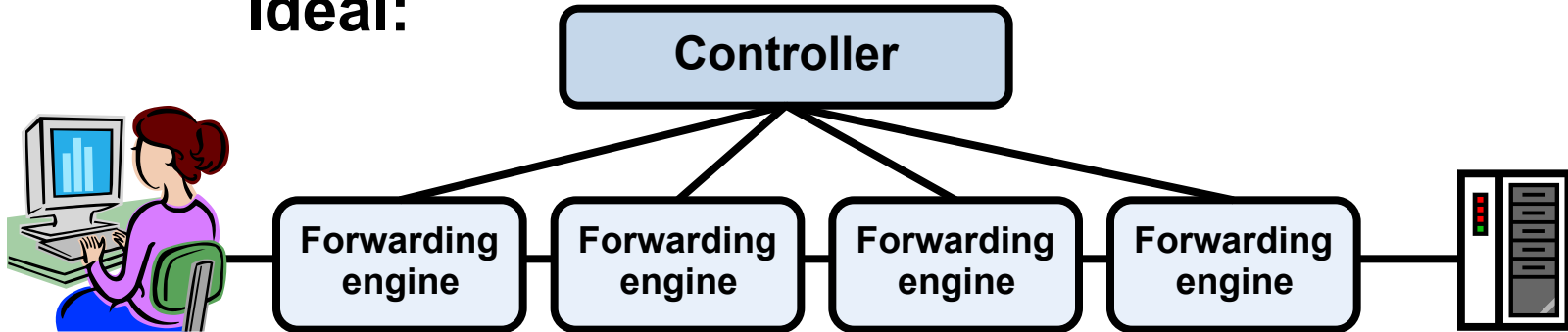
XaaS is the goods provided, The cloud and service enablement is the machinery needed to create the goods
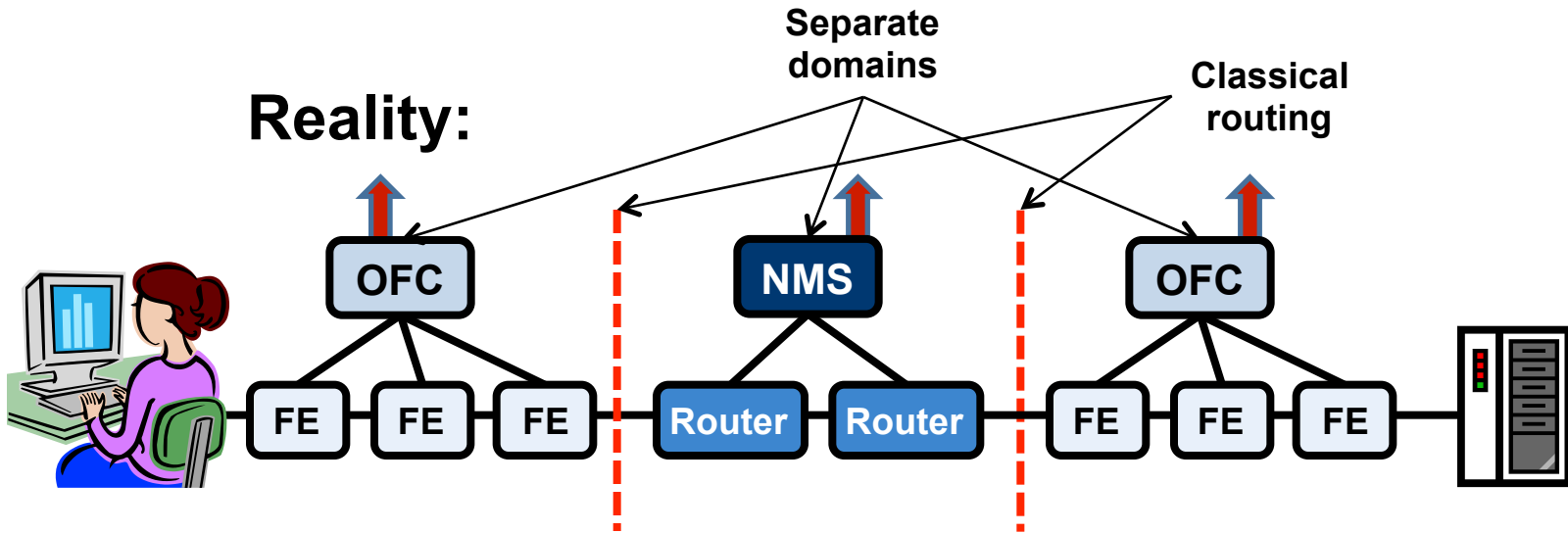
Telco PaaS offering `z` `w`

IaaS offering `x` `y`

SaaS

Service exposure

Exposable services

| I/f control | Adaptation | Service Enablement | Biz mgmt |

= can run virtualized

Virtualized apps: e.g.: MME HSS MTAS BSCS RNC PCRF CSCF ChSys

Classical MSC ...

Cloud components Cloud mgmt Network Compute Storage

Application HW Media Access ...

Service capabilities are easy to expose in and by the cloud, but cloud and exposure are (almost) orthogonal

SDN – ideal vs reality?

Ideal:

Controller

Forwarding engine · Forwarding engine · Forwarding engine · Forwarding engine

Separate domains

Reality:

Classical routing

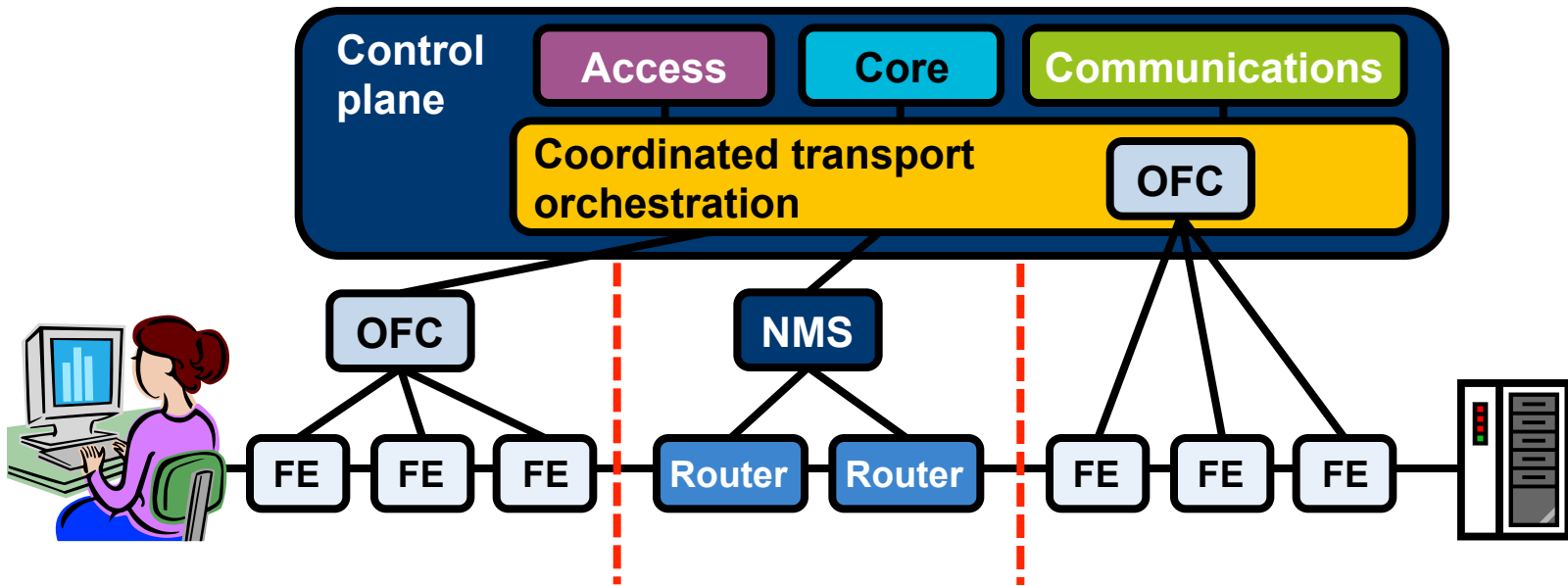OFC · NMS · OFC

FE · FE · FE · Router · Router · FE · FE · FE

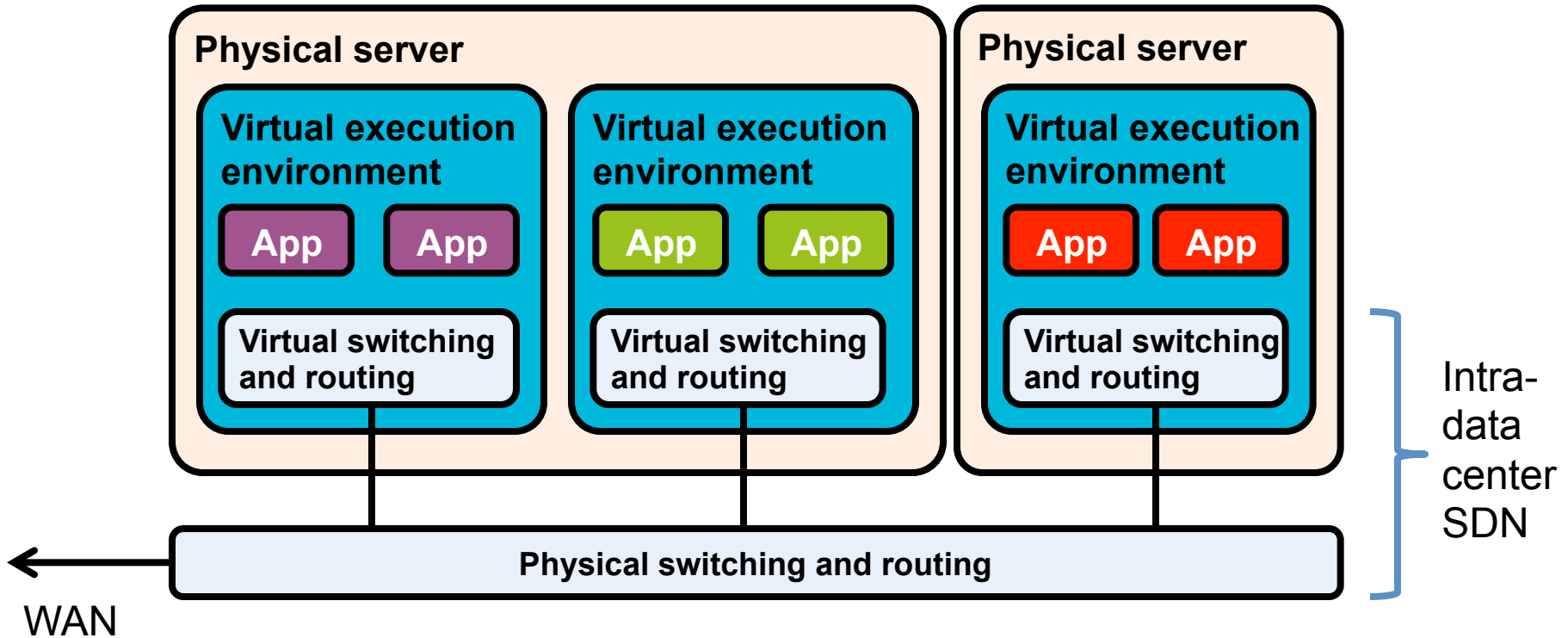**SDN's future will depend on business relations and integration with higher level functions**

SDN and the mobile network

- Missing piece: enclosing network control plane
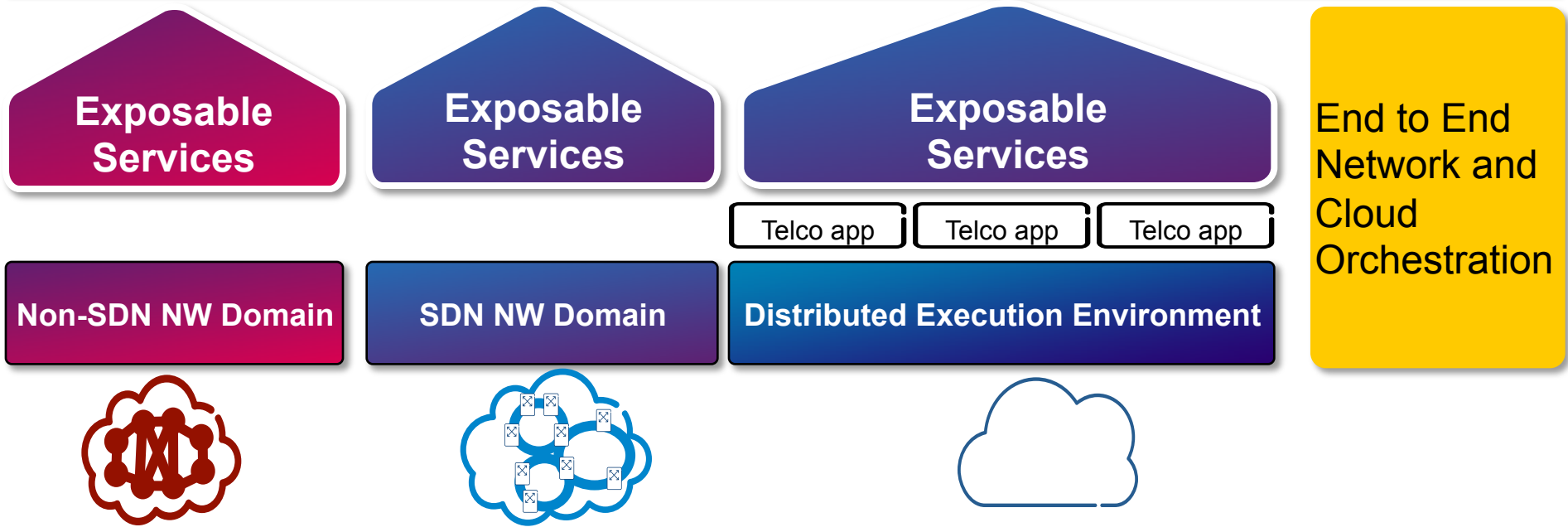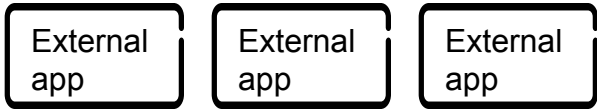- Standards?
  - What to standardize, where?

In a sense, a 3GPP network is already a programmable transport network!

SDN and the cloud

SDN is a prerequisite for the virtualized data centers to deliver application flexibility
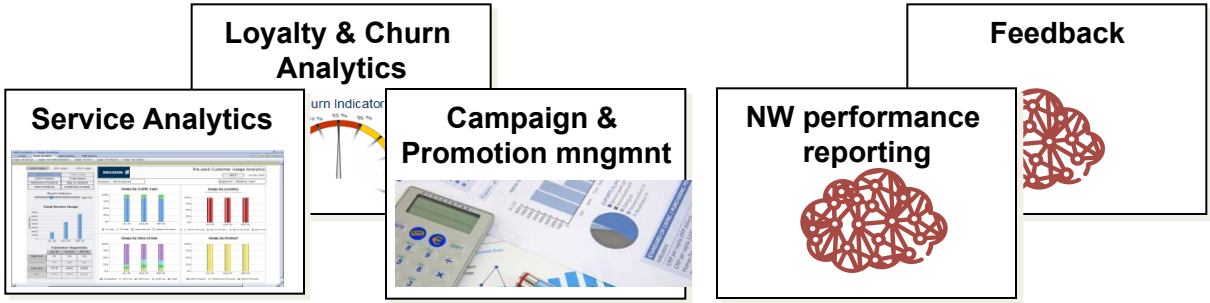
Service Provider SDN and service exposure

External app

External app

External app

Service Enablement

SDN & Telecom Service Exposure

Exposable Services

Exposable Services

Exposable Services

Telco app

Telco app

Telco app

End to End Network and Cloud Orchestration

Non-SDN NW Domain

SDN NW Domain

Distributed Execution Environment

Analytics

Visualization and Exposure

Loyalty & Churn Analytics

Service Analytics

Feedback

Campaign & Promotion mngmnt

NW performance reporting

Common Analytics toolbox
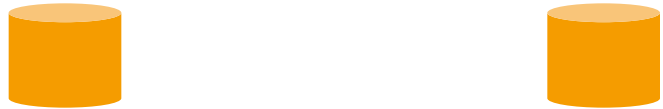
Mediation Layer (Aggregation and Capture)

Network Elements

Analytics,
Data Mining &
Action Triggers

Storage
Enrichment
Optimization

Extract
Transform
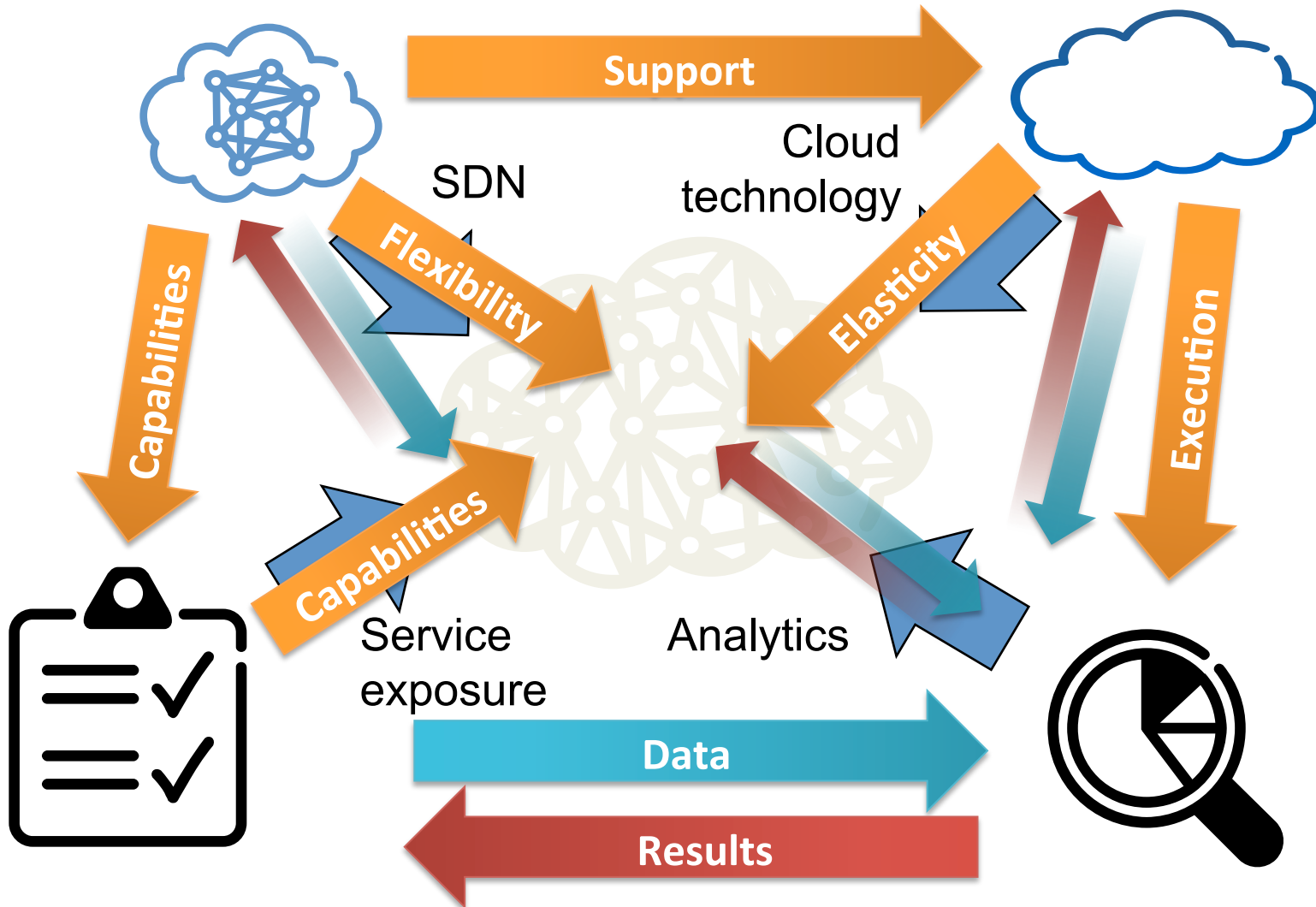**L**oad

**Analytics is evolving from a reporting tool to a dynamic, near real time part of the network.
Many parts well suited to cloud deployment**

The network evolves
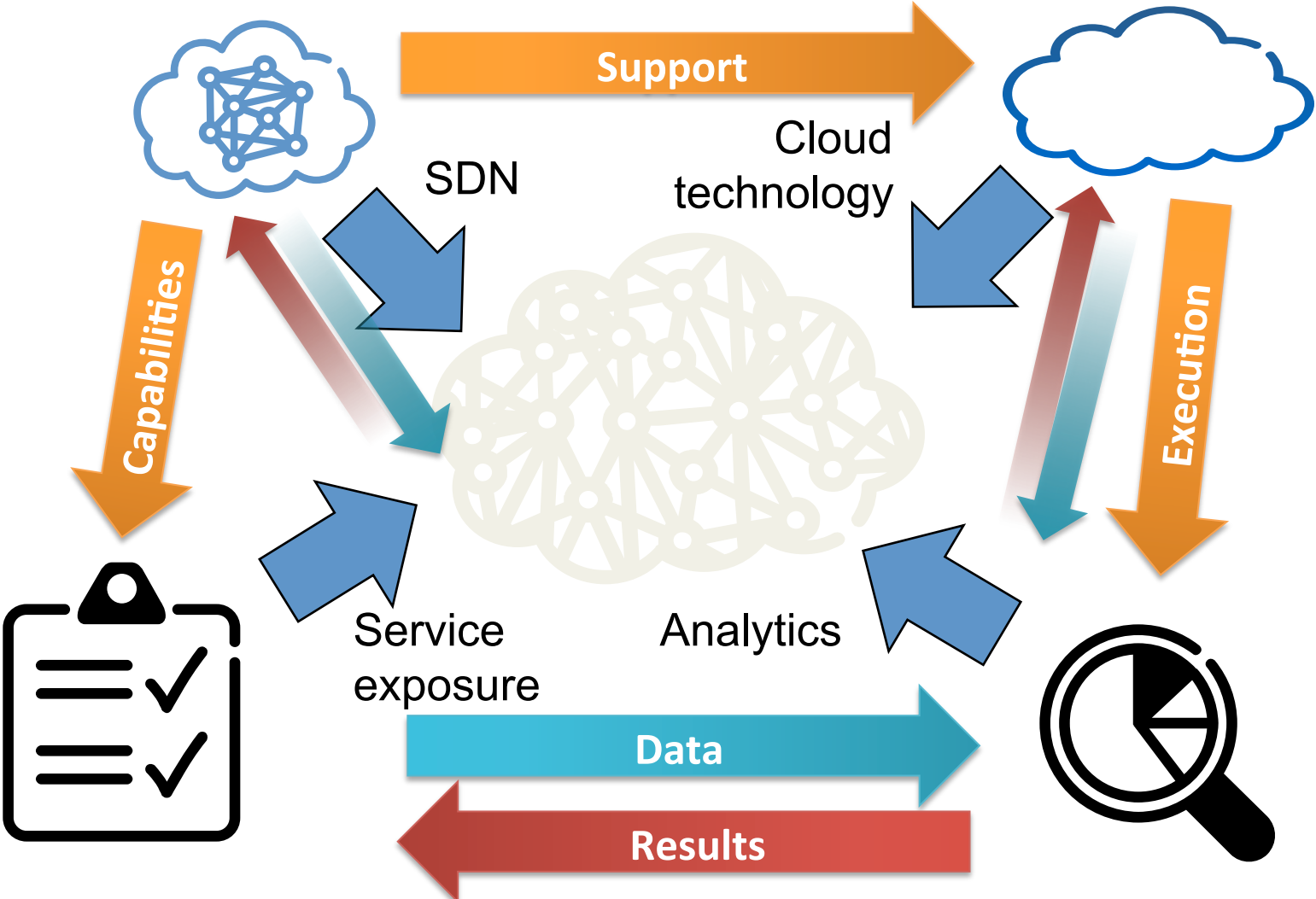
The network evolves

Conclusion

- External components migrate towards the network architecture, resulting in an updated set of (technology) domains.

- They are separate, but not independent: needs a network-wide view.

- ICIN could be a place to debate the needed structure: domains, terminology, challenges.

- The right mix of technology, operations and academia!

The End!