



Aalto University  
School of Electrical  
Engineering

# Value Network Design for Internet Spring 2018

## VNC Method

# Outline

- What is value?
- What is a value network?
- What is value network analysis?
- Value Network Configuration (VNC)
- VNC Case Example: Wireless Local Area Access
- Practical pointers for the group works

# What is value?

- From Merriam-Webster dictionary:
  - A fair return or equivalent in goods, services, or money for something exchanged
  - The monetary worth of something
  - Relative worth, utility, or importance
- From Oxford dictionary:
  - The regard that something is held to deserve; the importance, worth, or usefulness of something
- A side note: “Value” is different from “Values”
  - Values: Principles or standards of behaviour; one’s judgment of what is important in life (Oxford dictionary)

# What is a value network?

- Value network is a business analysis perspective (e.g., for a specific product or service)
  - Describes social and technical resources within and between businesses
  - The nodes in the network represent actors and their roles
  - The nodes are connected by interactions that represent tangible and intangible deliverables
  - The deliverables include, e.g., knowledge, financial value and technical deliverables
- **In a value network the actors interact with each other to benefit (i.e., create value for) the entire group**
- Value is created through exchange and the relationships between actors and/or roles

# What is a value network?

- Both internal and external value networks exist
- **External value networks:**
  - Include customers or users, intermediaries, suppliers, and other stakeholders
- **Internal value networks:**
  - Focus on key activities, processes and relationships that cut across internal boundaries of, e.g., a company
  - Key activities include, e.g., order fulfillment, innovation, lead processing, or customer support

# From value chain to value network

- Value chain:
  - A chain of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market
  - Firm-level and industry-level value chains
  - Popularized by Porter (1985)
- Normann & Ramirez (1993) argued for a focus on the whole value creating system
  - In today's more complex environment, strategy is no longer a matter of positioning a fixed set of activities along a value chain
  - All stakeholders co-produce value
  - The foundation for the value network to emerge as a mental model

# What is value network analysis?

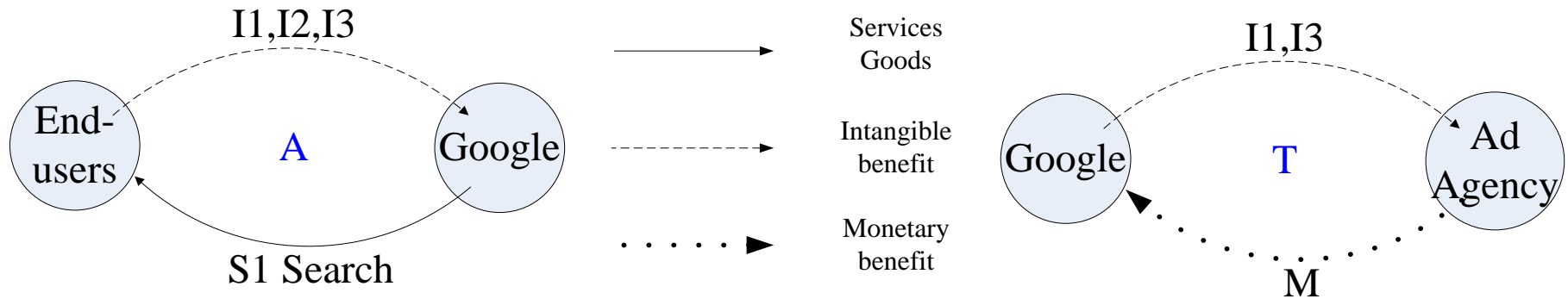
- Value network analysis:
  - A methodology for understanding, using, visualizing and optimizing internal and external value networks and complex economic ecosystems
  - Used for understanding value conversion of financial and non-financial assets
  - The methods include visualizing sets of relationships from the whole systems perspective
- Different types of visualization methods and formats exist
  - **Value Network Configuration (VNC) method based on Casey et al. (2010) is one of these**

# On-line value networks and intangibles

- Services & Goods
  - S1: core service (central benefit for users)
  - S2: enabler service (facilitating core service)
- Monetary benefit: M
- Intangible benefit
  - I1: Attention
  - I2: Loyalty (incl. brand recognition, reputation, etc.)
  - I3: Information (actors' background, preference, etc.)



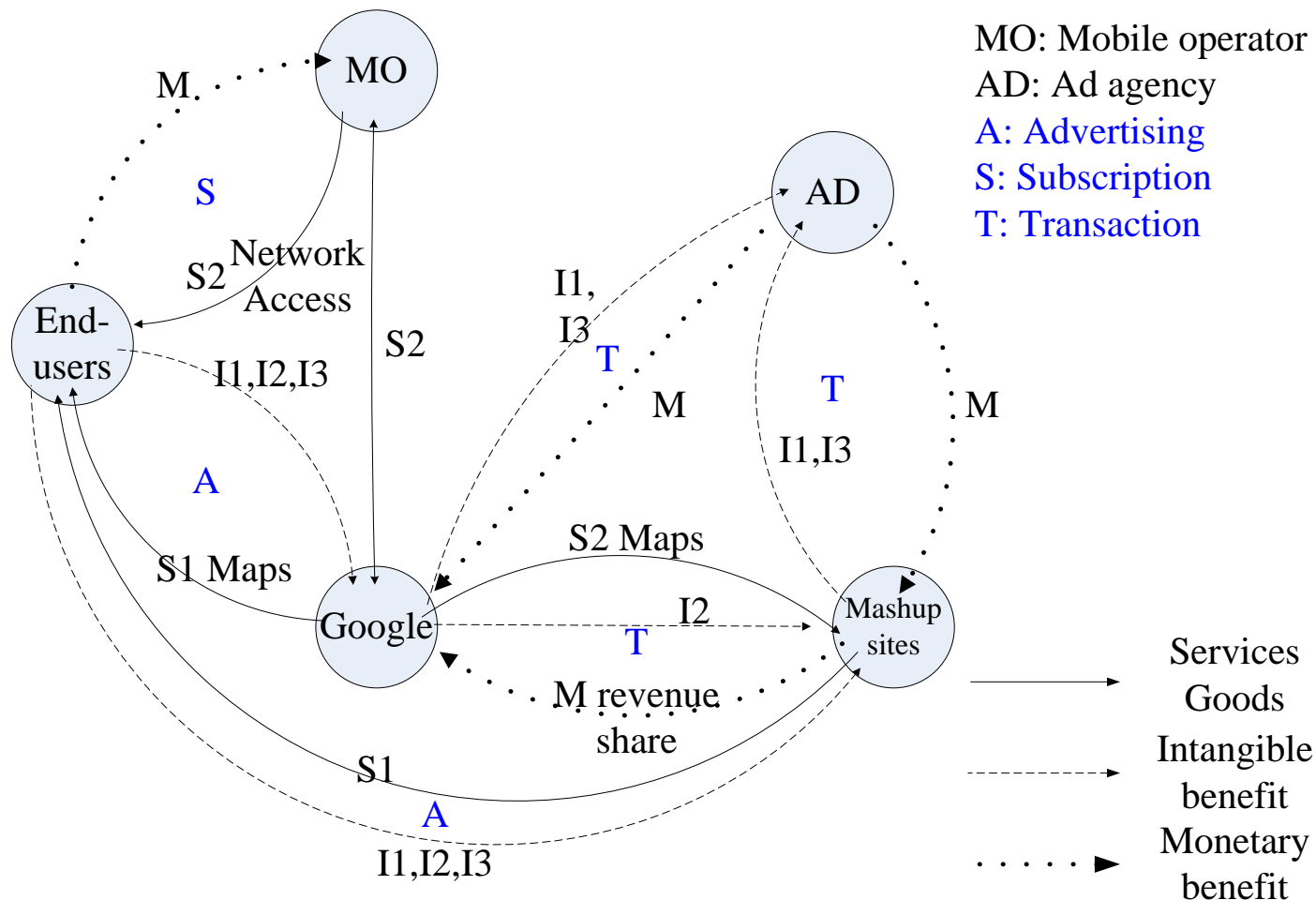
# Value exchange examples



- Google provides free search service for users in exchange of their attention, loyalty and information.
- Advertising revenue model

- Google sells the attention and information of users (i.e. ad place) to ad agencies in exchange of money.
- Transaction revenue model

# Google Maps as a whole



# Value Network Configuration (VNC)

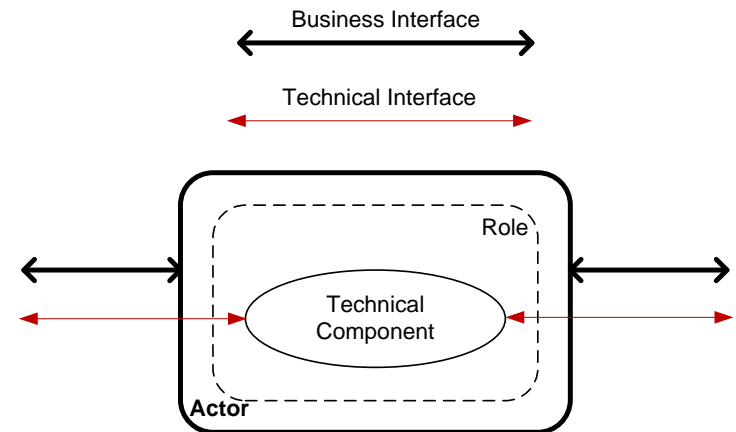
based on Casey et al. (2010)

A value network consists of interlinked

1. Actors
2. Technical components

Roles link actors to technical components

- Role is a set of activities and technical components, the responsibility of which is not divided between separate actors
- Actors are in possession of strategically important roles -> in a position to gain more control and take on other roles in the value network



Value Network Configuration (VNC)

- Results as Actors take on Roles and establish (technical and business) interfaces with each other

# Example: Wireless Local Area Access

Importance of wireless local area (LA) access increasing

- Rapidly growing demand for mobile broadband challenging the scalability of mobile wide area (WA) network
- Demand spatially distributed to few indoor(-like) locations

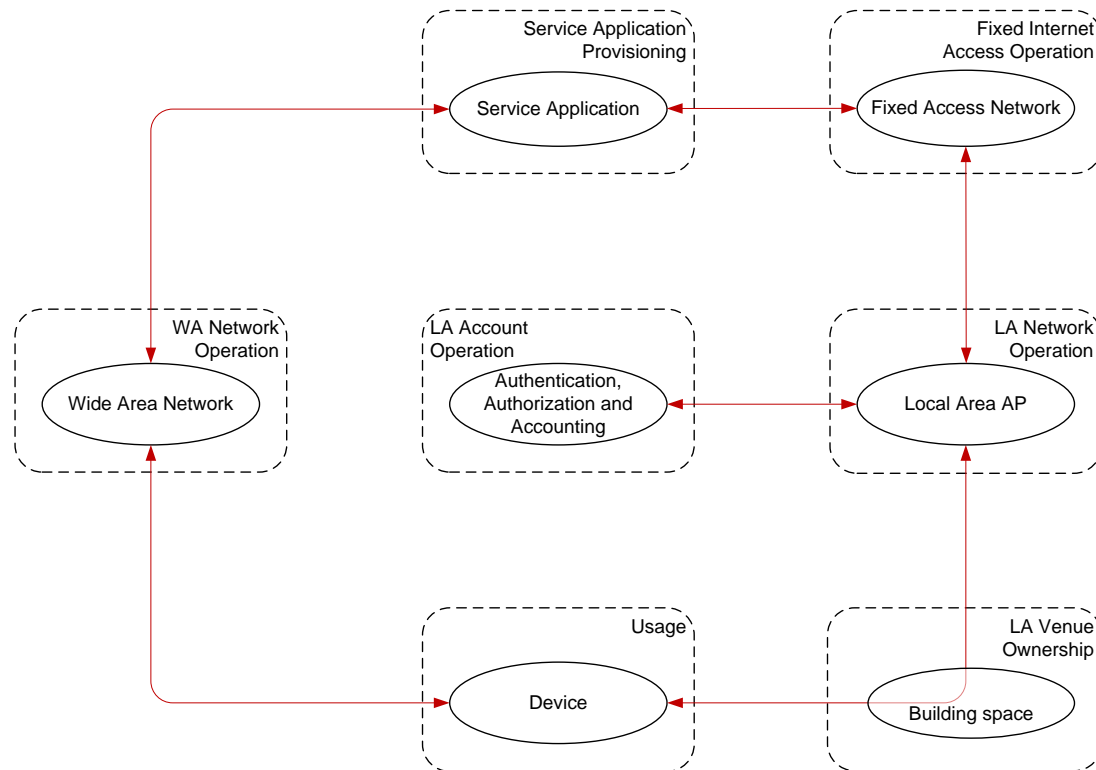
Many Actors in position of coupling wireless LA access to their existing platform

- Resulting value networks can become complex and diverse

Need for a structured and thorough analysis of possible Value Network Configurations that could emerge

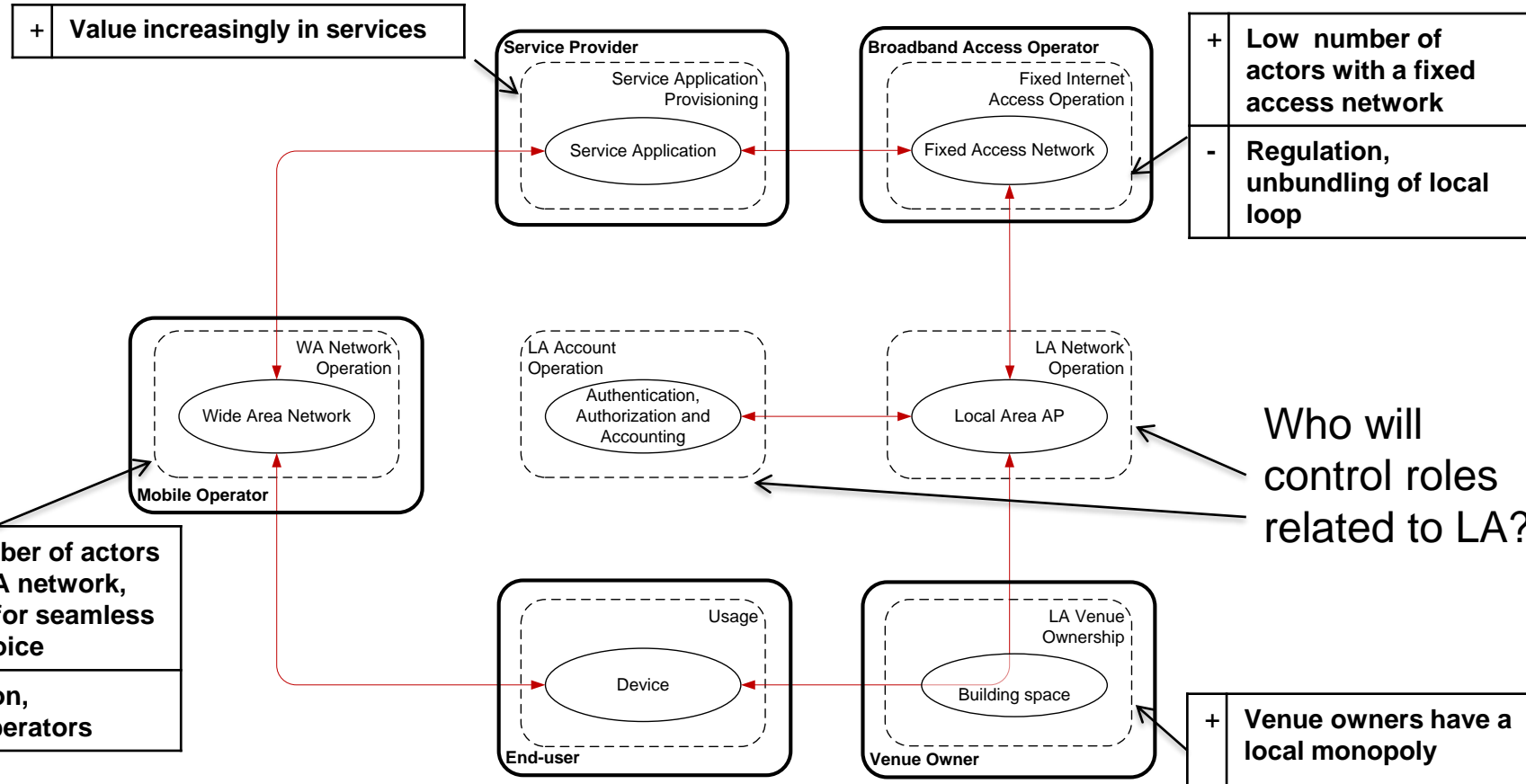
# Wireless Local Area Access:

## Technical components? Roles?

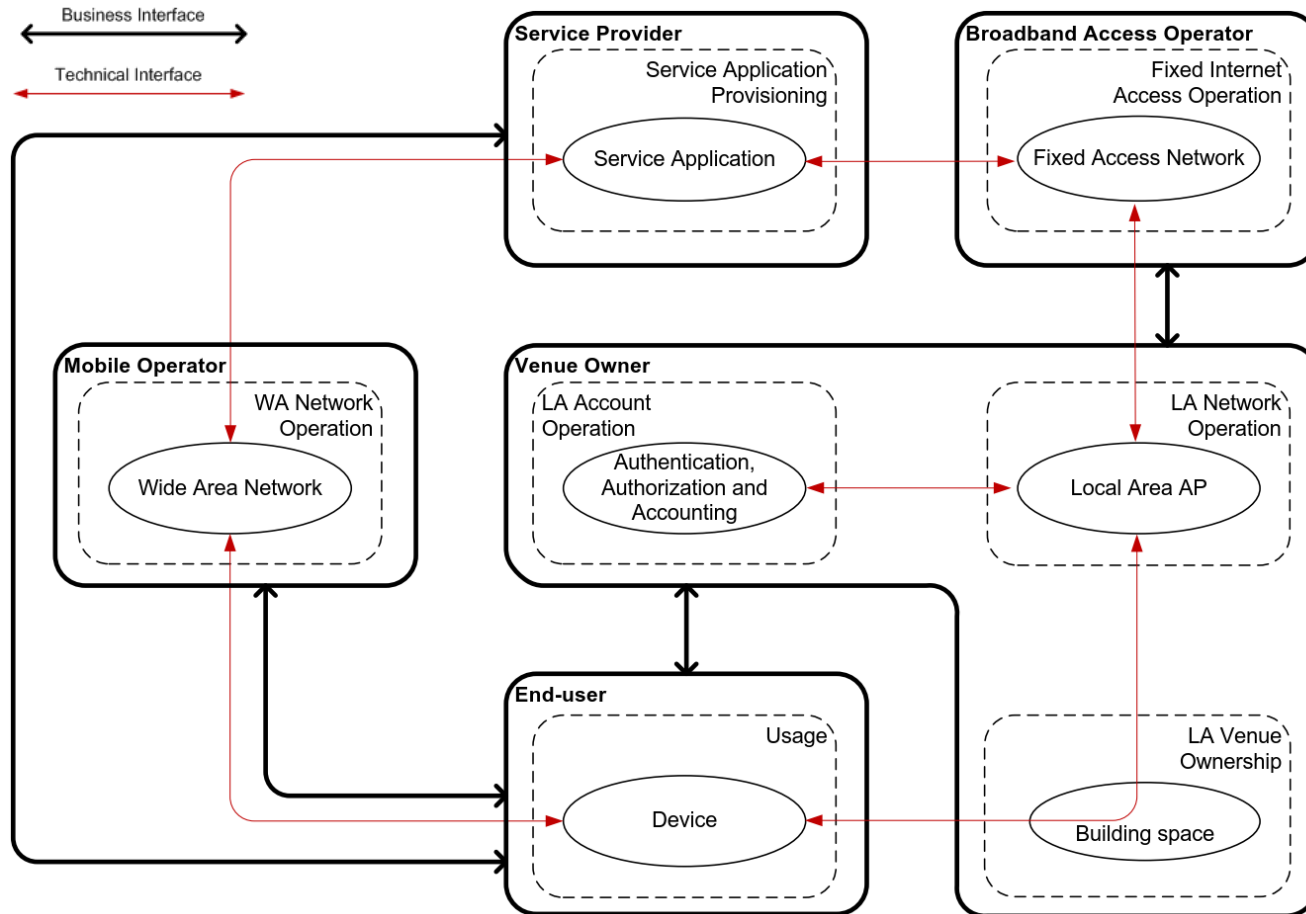


# Wireless Local Area Access:

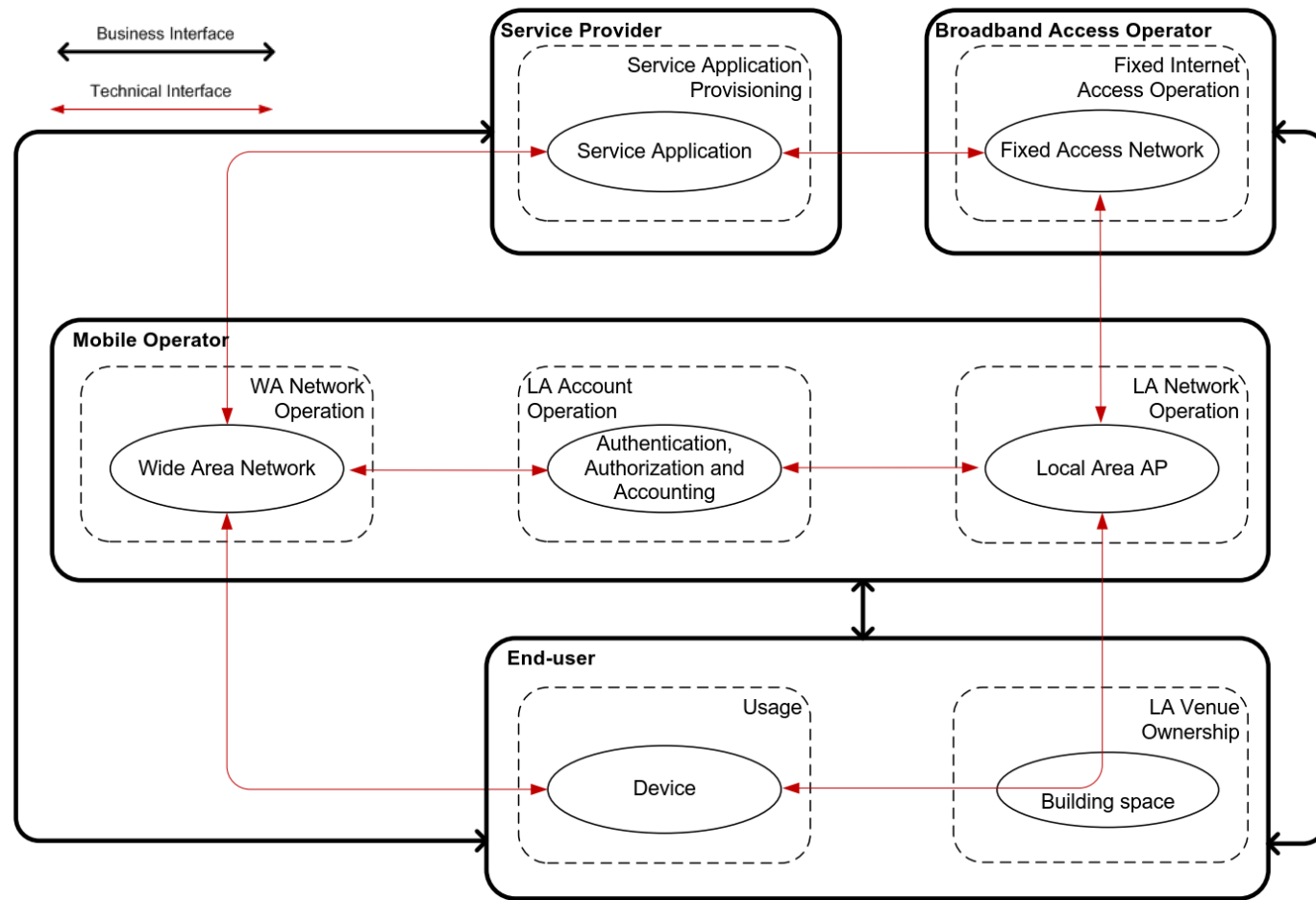
## Known actors?



# Venue Owner driven VNC

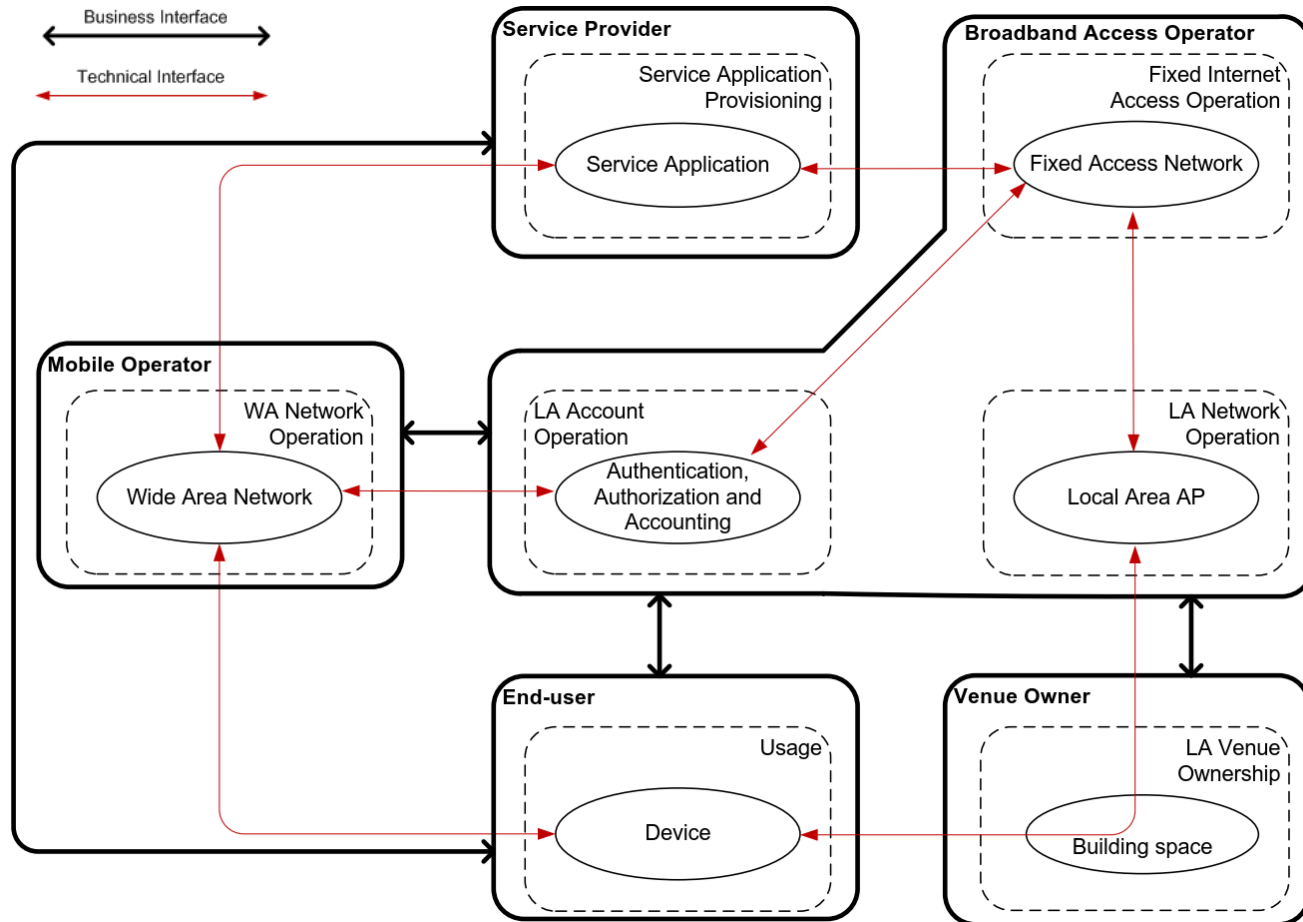


# Mobile Operator driven VNC

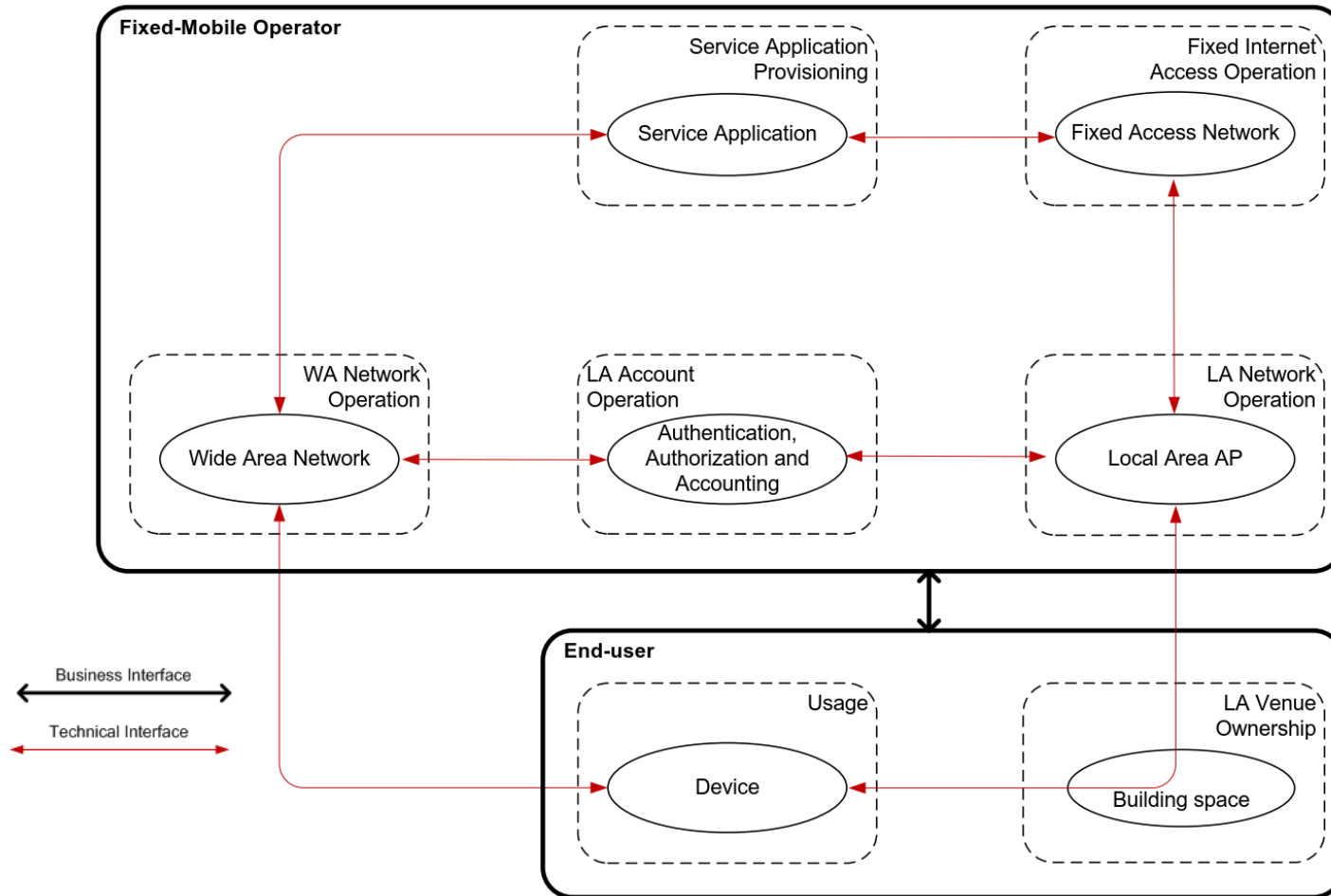




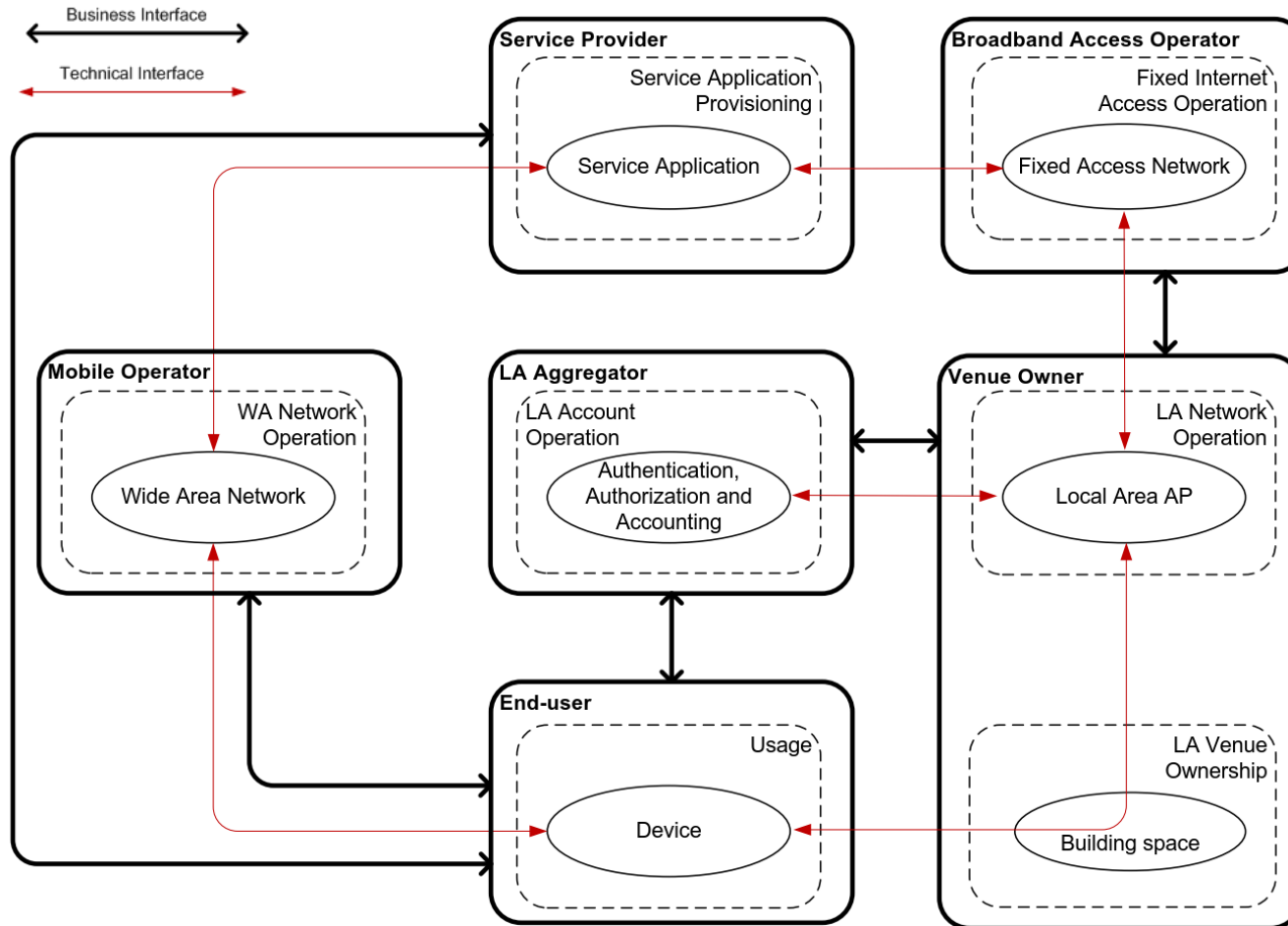
# Broadband Access Operator driven VNC



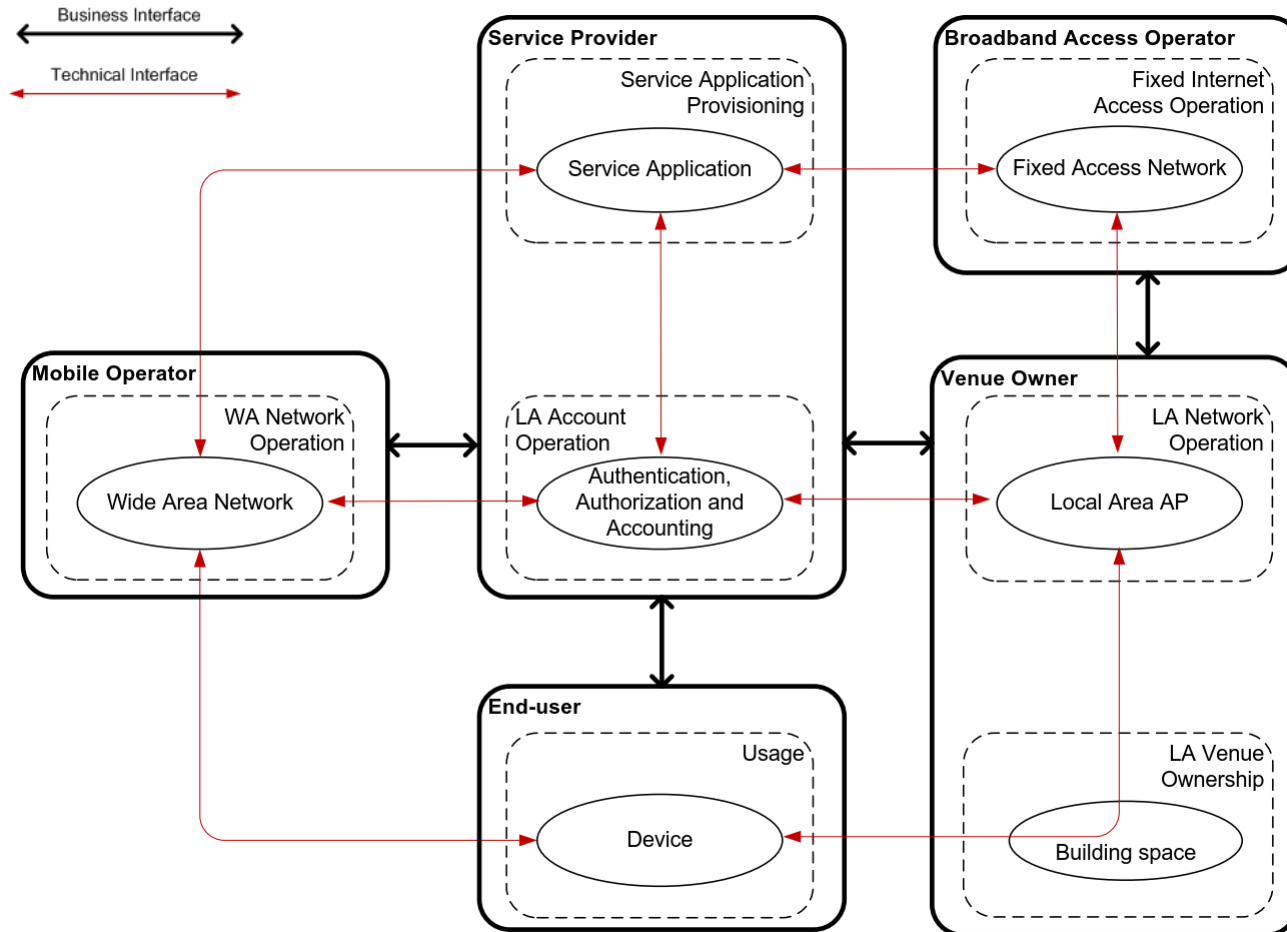
# Fixed-Mobile Operator driven VNC



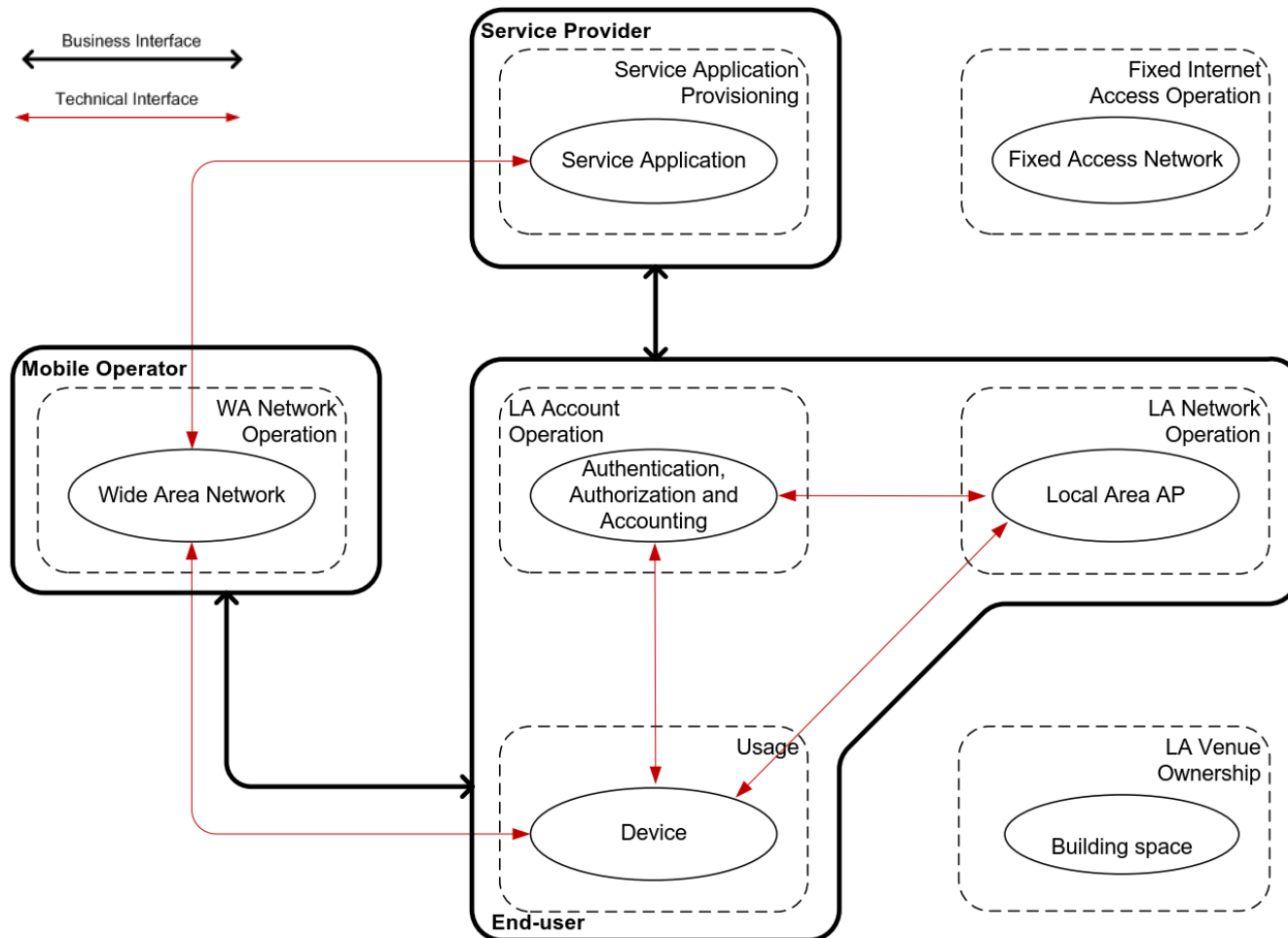
# Access Aggregator driven VNC



# Service Provider driven VNC



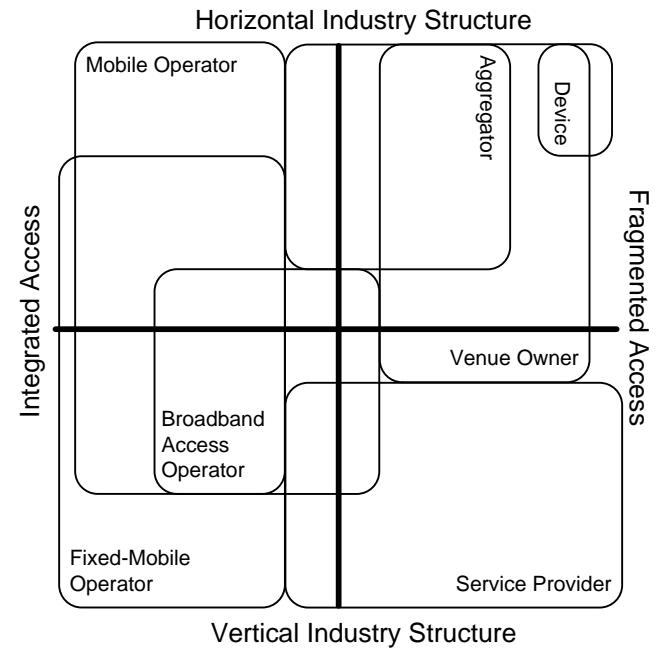
# Device driven VNC



# Key uncertainties behind the case

Two key uncertainties identified by Smura and Sorri (2009):

1. Integrated or fragmented access?
2. Vertical or horizontal industry structure?



# Case conclusions

VNCs will co-exist and compete with each other

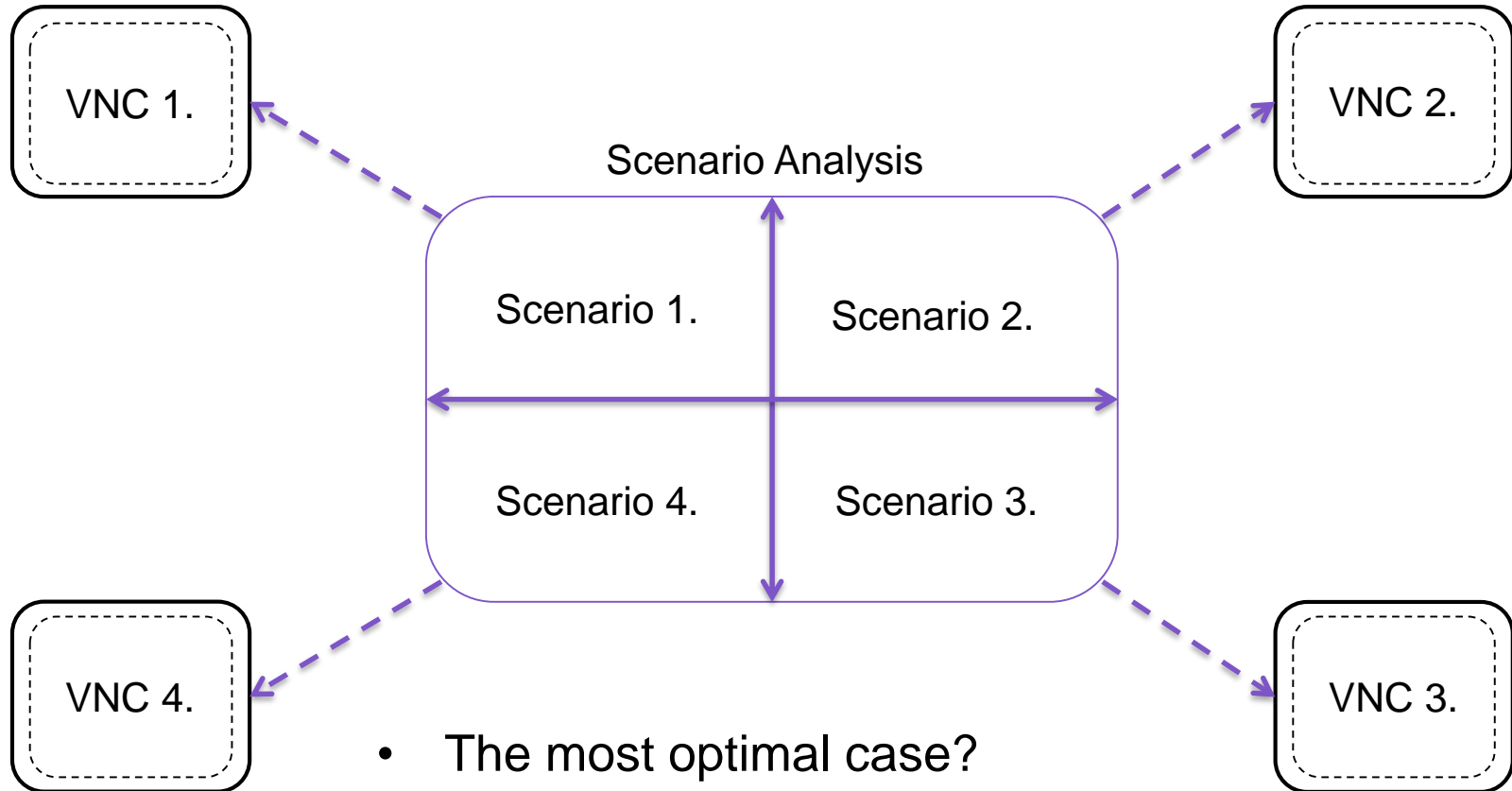
- A given user may have many devices and be part of different VNCs
- Success of each VNC could be quantified, e.g., with number of users, served data volume or generated revenue

Demand for wireless access increasing rapidly -> wireless LA access infrastructure should be leveraged optimally

- Co-operation and mutually beneficial agreements across VNCs needed
- Corresponding future technologies and regulatory policies should enable sufficient interoperability and revenue sharing between actors driving the VNCs

# Practical pointers for the group works

## from Scenario Analysis to VNCs



- The most optimal case?
- Can be difficult to realize in practice...



# Practical pointers for the group works

- A tool for drawing the VNCs
  - Microsoft Visio is useful
  - VNC template for Visio can be found from MyCourses
  - The task can be managed also with Microsoft PowerPoint
- Some references
  - Casey et al. (2010). Value Network Configurations in Wireless Local Area Access.
  - Smura & Sorri (2009). Future Scenarios for Local Area Access: Industry Structure and Access Fragmentation.
  - Normann & Ramirez (1993). From value chain to value constellation: designing interactive strategy.
  - Allee (2008). Value Network Analysis and Value Conversion of Tangible and Intangible Assets.
  - Porter (1985). Competitive Advantage: Creating and Sustaining Superior Performance.