

Paul Grefen

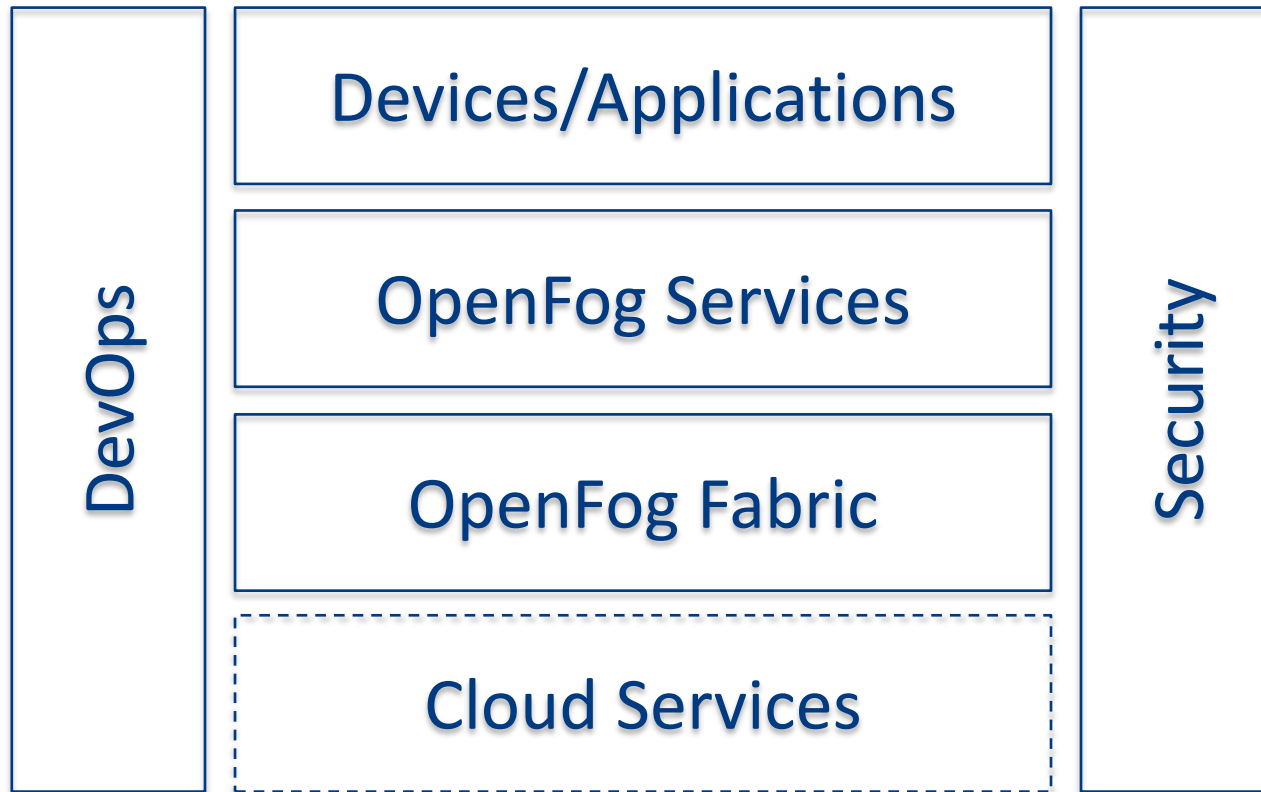
Information Systems  
Group

School of Industrial  
Engineering

# **Foggy Business Models don't need to be Misty**

- A foggy landscape with applications
  - logistics
  - traffic
- Foggy qualities and stakeholders
- Foggy strategies and business models
- Foggy business model design
  - Dem[i|y]stifying collaborations
- Conclusions

# A Foggy Landscape with Applications



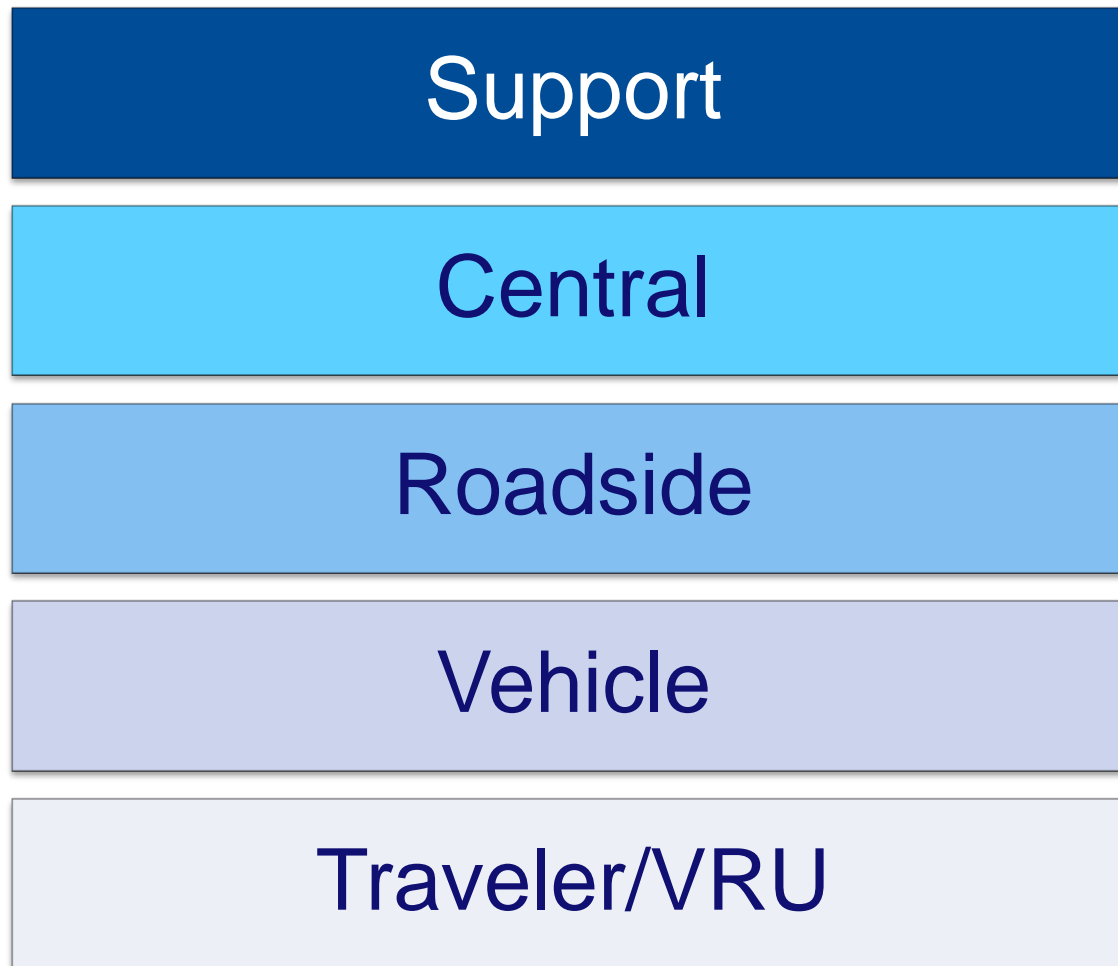
Adapted from: *OpenFog Architecture Overview*  
OpenFog Architecture Working Group

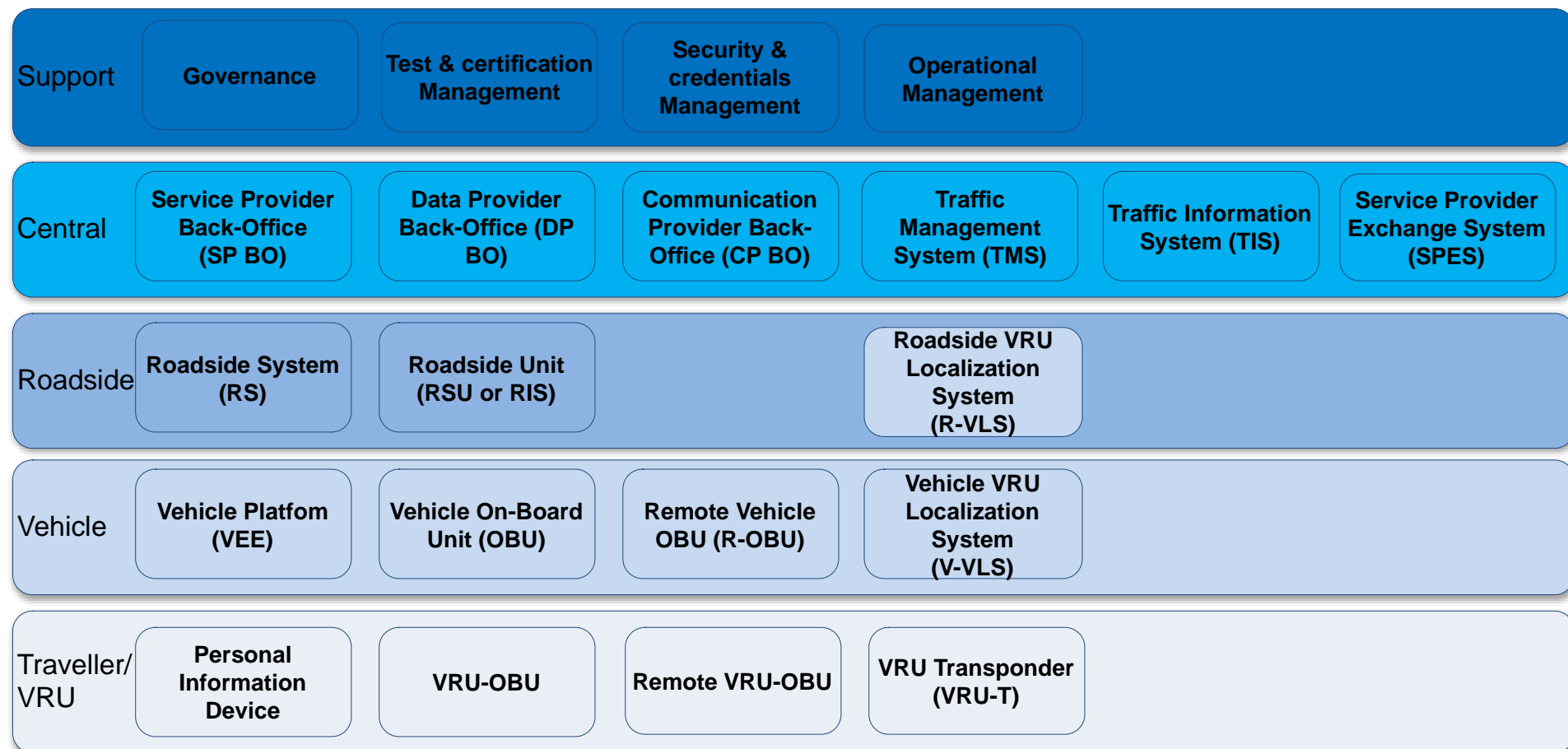




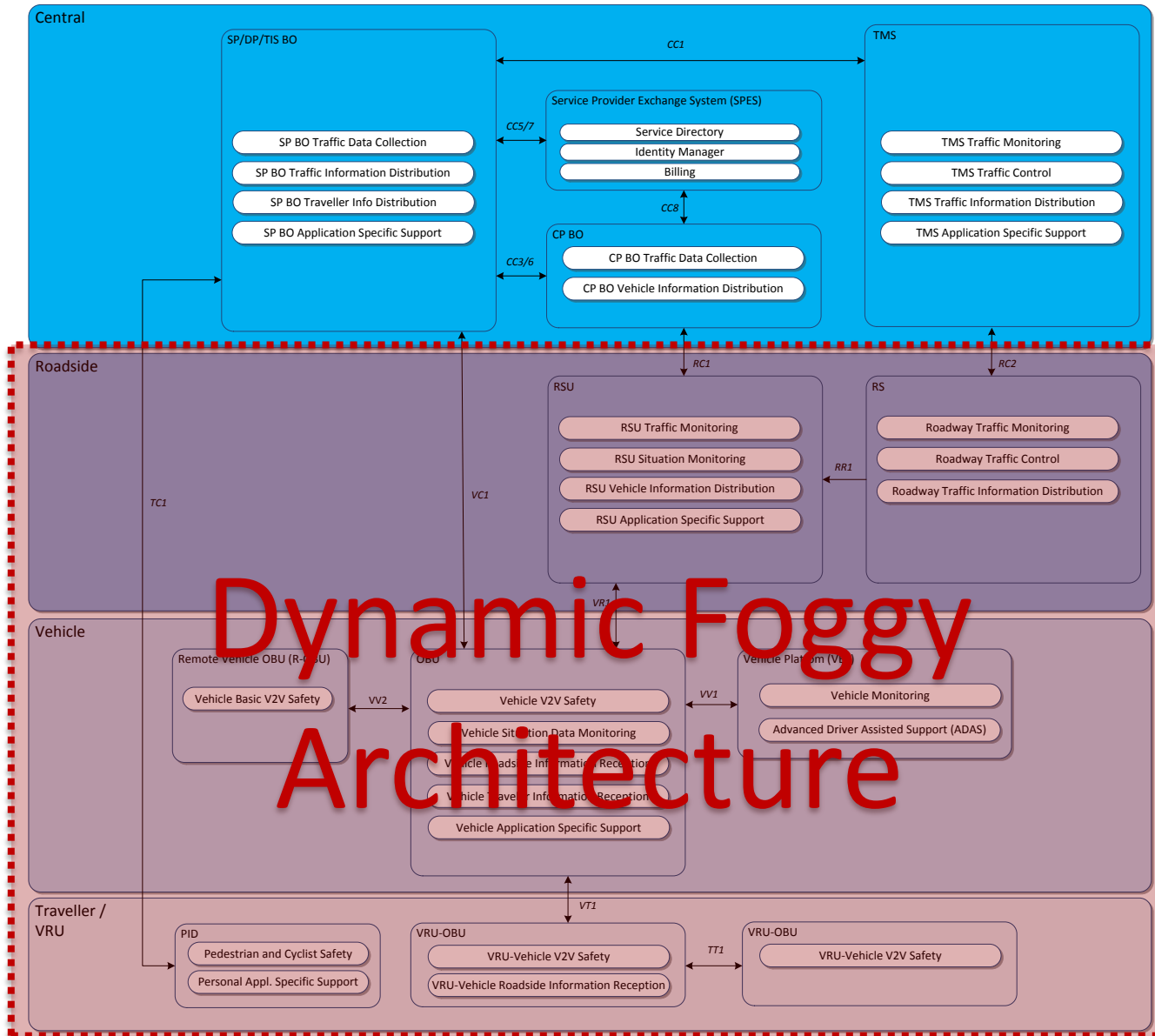


**Foggy traffic management? ITS!**



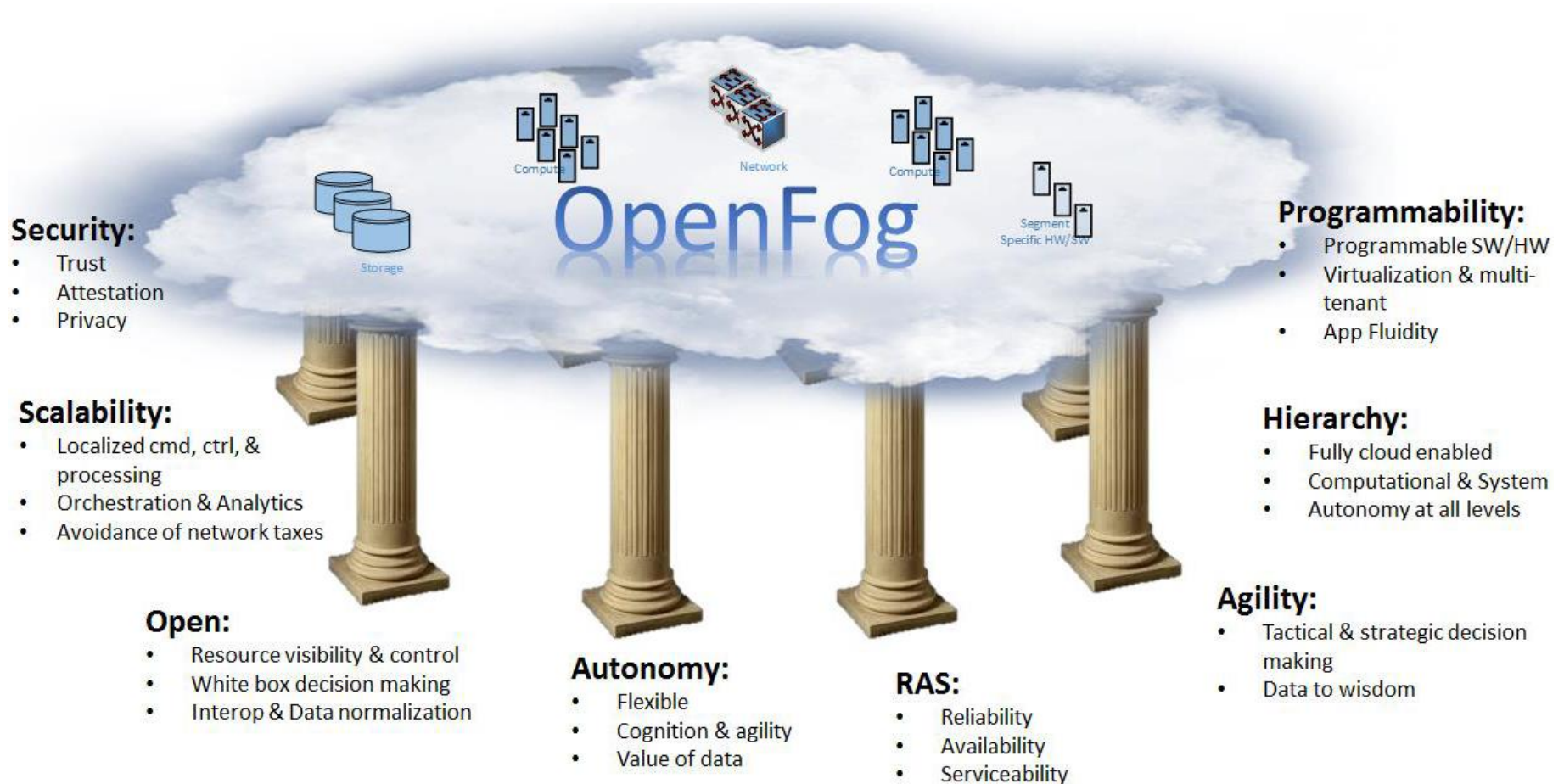






# Dynamic Foggy Architecture

# Foggy Qualities and Stakeholders



From: *OpenFog Architecture Overview*  
OpenFog Architecture Working Group



## OpenFog Pillars – Important to whom?

- Interoperability – device heterogeneity
  - protocol heterogeneity
- Interoperability - data transfer
  - message syntax standards
  - really a problem?
- Interoperability - data interpretation
  - data semantics
  - ontologies?

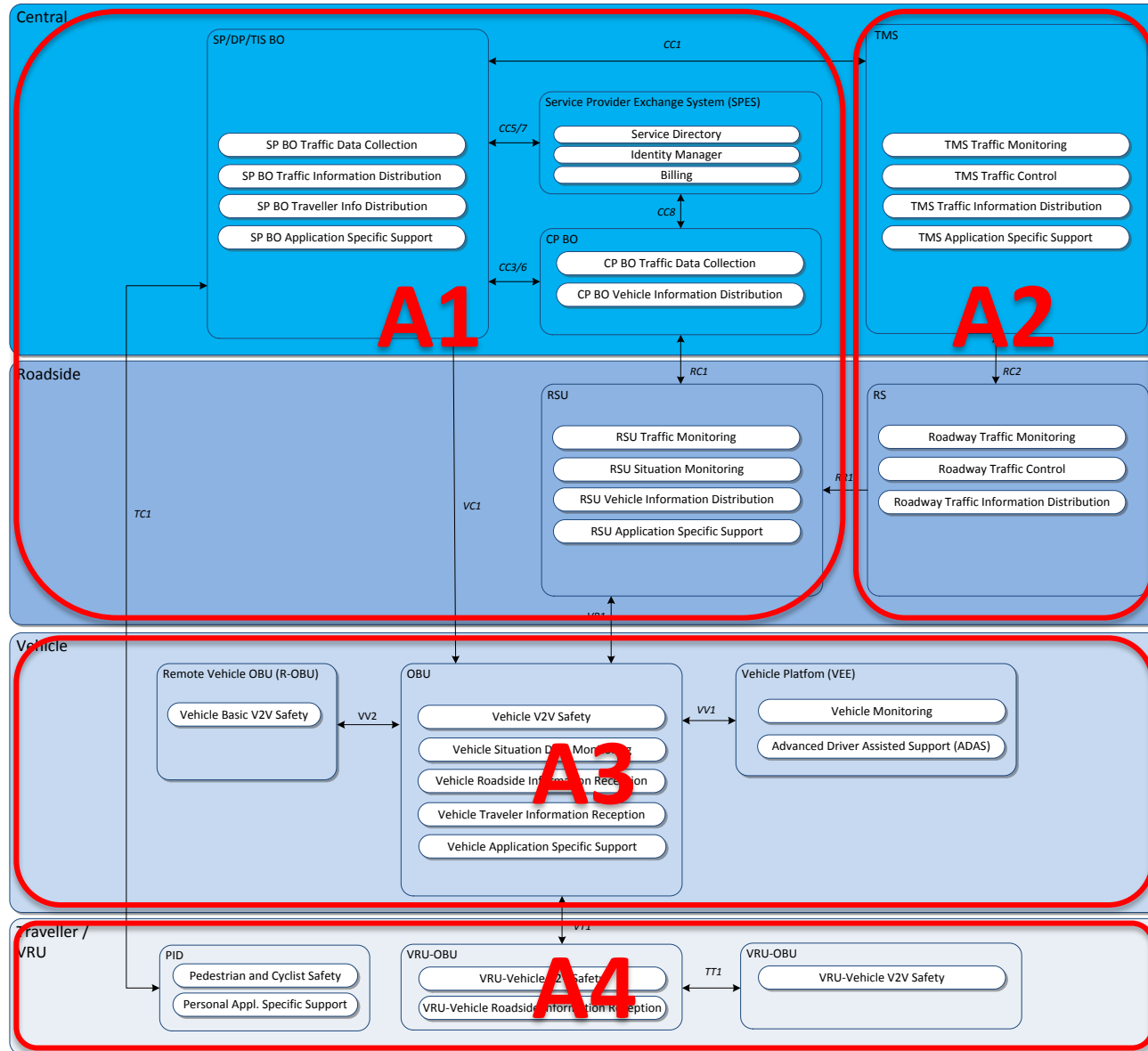


- Data ownership
  - in logistics scenarios:
    - parties may be (often are) reluctant to share data for competitive reasons (e.g. job snatching, competitor profiling)
    - parties see data as a competitive advantage – but often don't know how precisely
  - in mobility scenarios:
    - traffic participants may be reluctant to share data for privacy reasons
    - regulations may obstruct data sharing (even if participants are OK)

- Cost/benefit sharing
  - parties do not have a clear vision of who pays what
  - financial (easy to quantify) vs. non-financial (hard to quantify) cost/benefits
  - strategic (infrastructure) costs vs. tactic/operational (process) costs
- Data sharing is a form of cost/benefit sharing
  - data should have an explicit value
  - that can be traded against other values
- Business models in new technology settings (such as Fog Computing) need demistification

# Foggy Strategies vs. Foggy Business Models

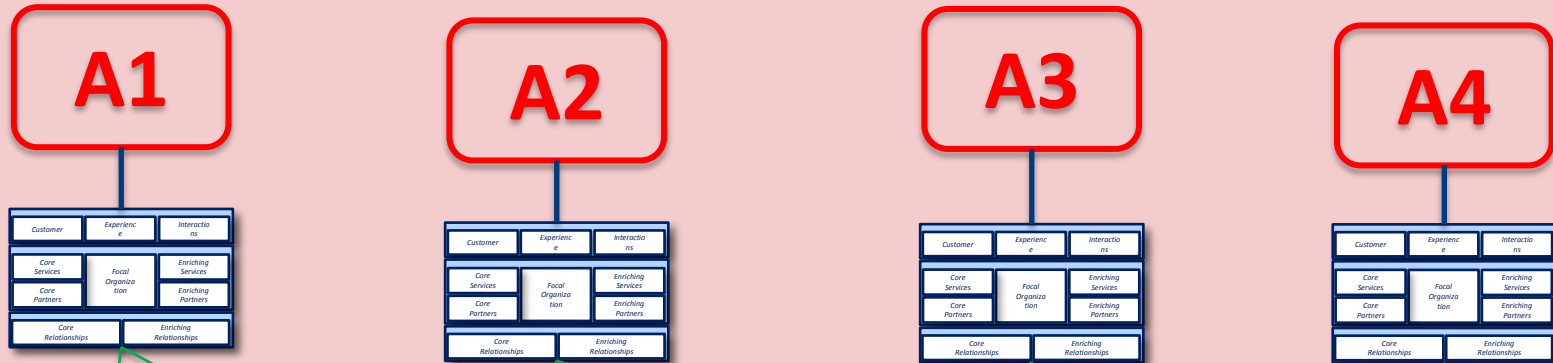
- Demistifying foggy business means distinguishing between two levels
- Strategic level: thinking long-term about foggy infrastructure costs/benefit projections
  - as business relations change faster than infrastructure setups, these projections cannot be based only on current/short term business relation thinking
- Tactical level: thinking medium-term about foggy business scenarios (~ use cases from a technical perspective)
  - these have to rely on functionality offered by existing infrastructures



# System Modules and Actors



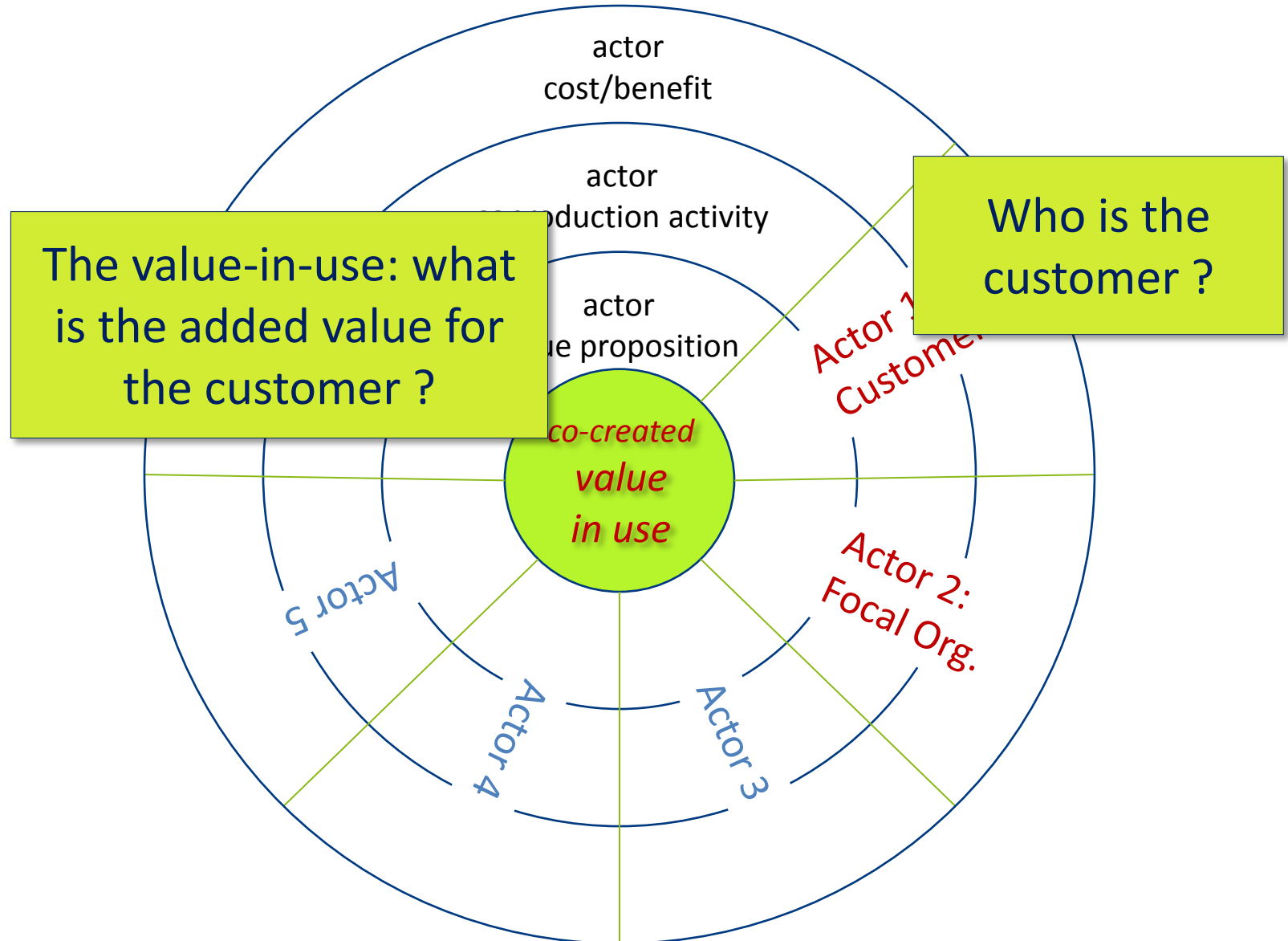
## strategic positioning ecosystem view (evolving)



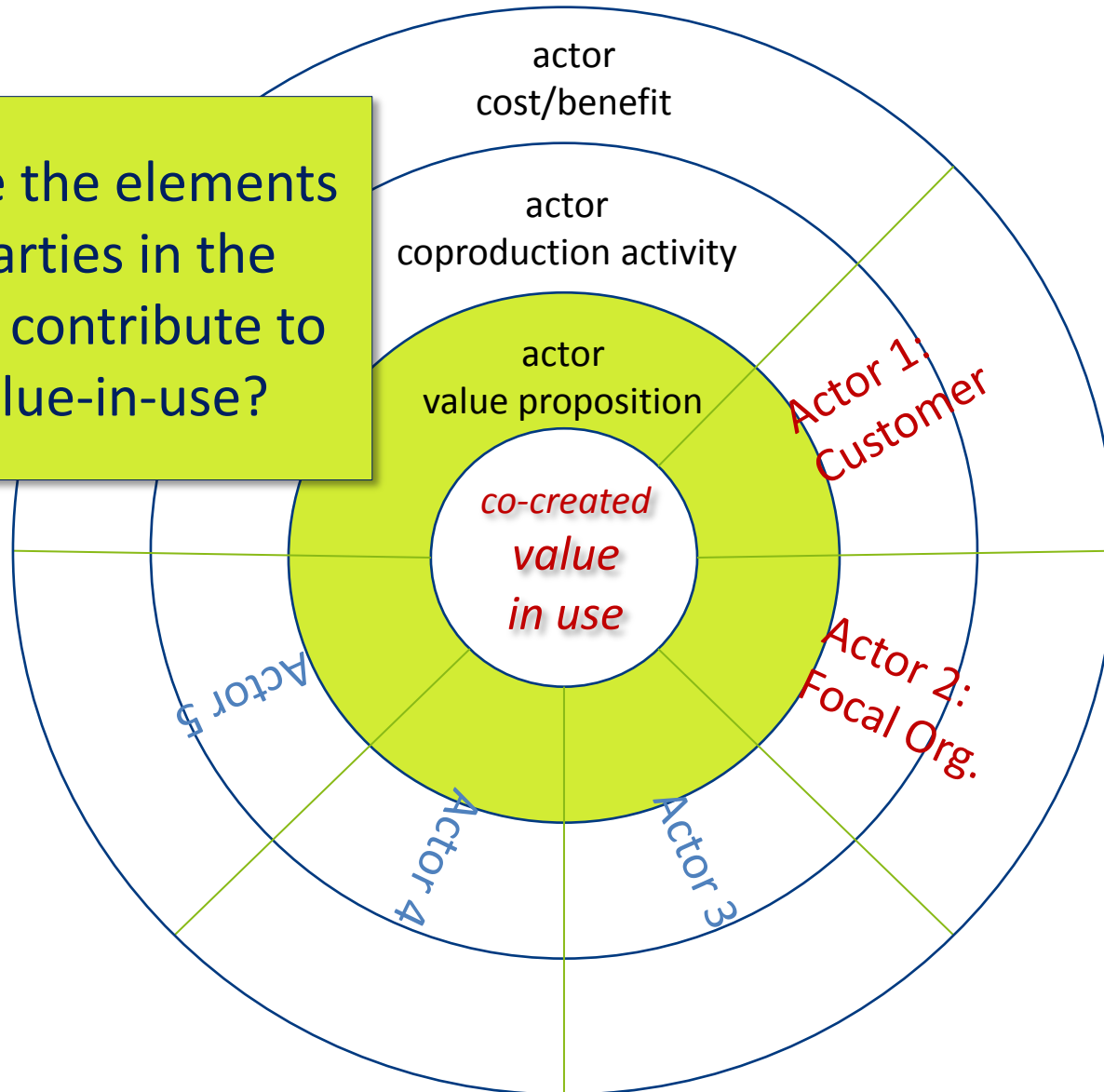
## tactic collaboration ecosystem view (revolving)

# Foggy Business Model Design

- Multi-party collaborative (networked)
- At the tactical level (not resource-oriented)
- Starting from value-in-use
- For a specific customer segment
- Highlighting for every party
  - its contribution to value-in-use
  - its activities to realize that contribution
  - its cost and benefits related to its role
- Addressing all costs and benefits
  - financial and non-financial
- Supporting analysis at the network level

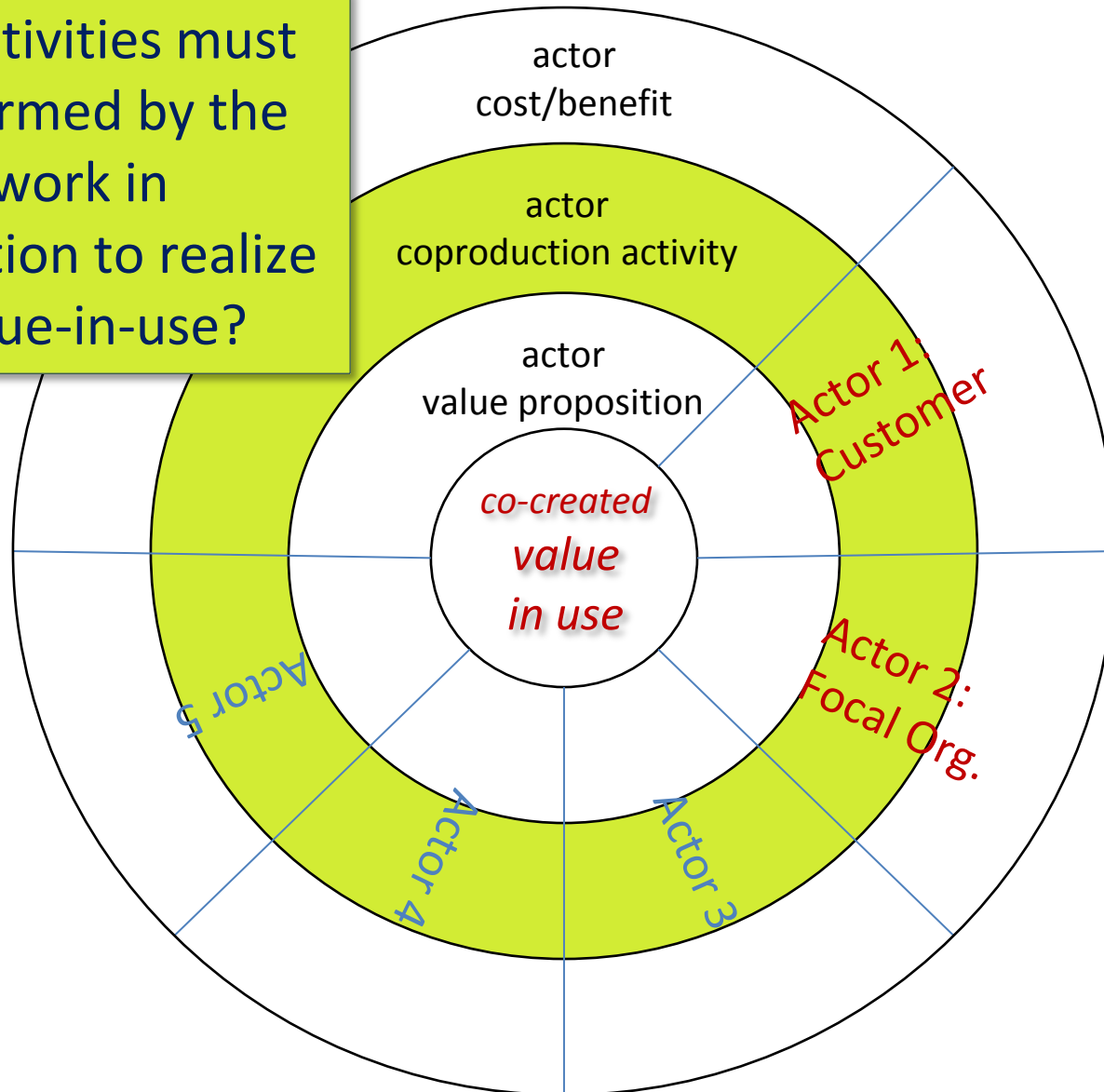


What are the elements  
that parties in the  
network contribute to  
the value-in-use?

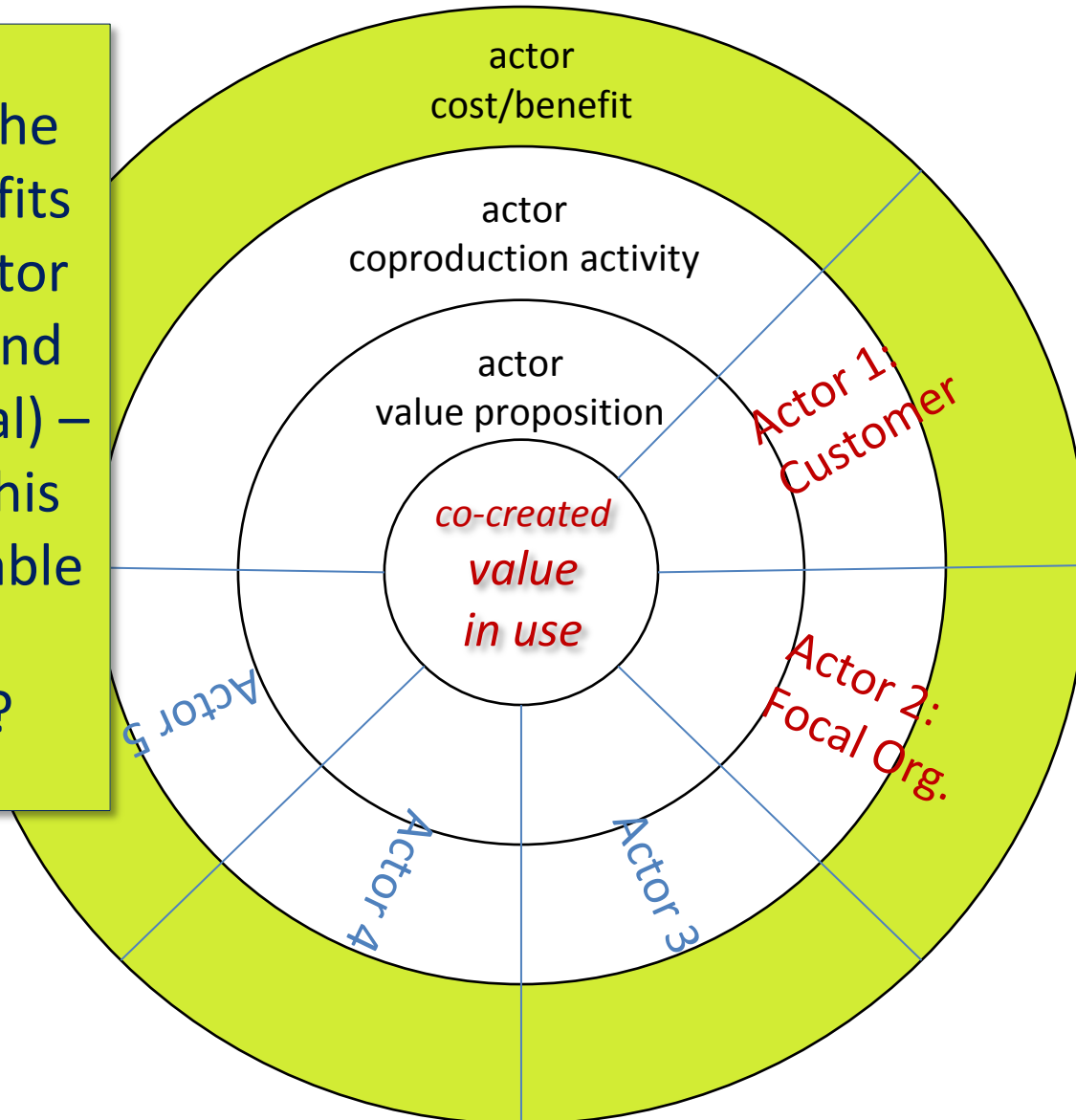


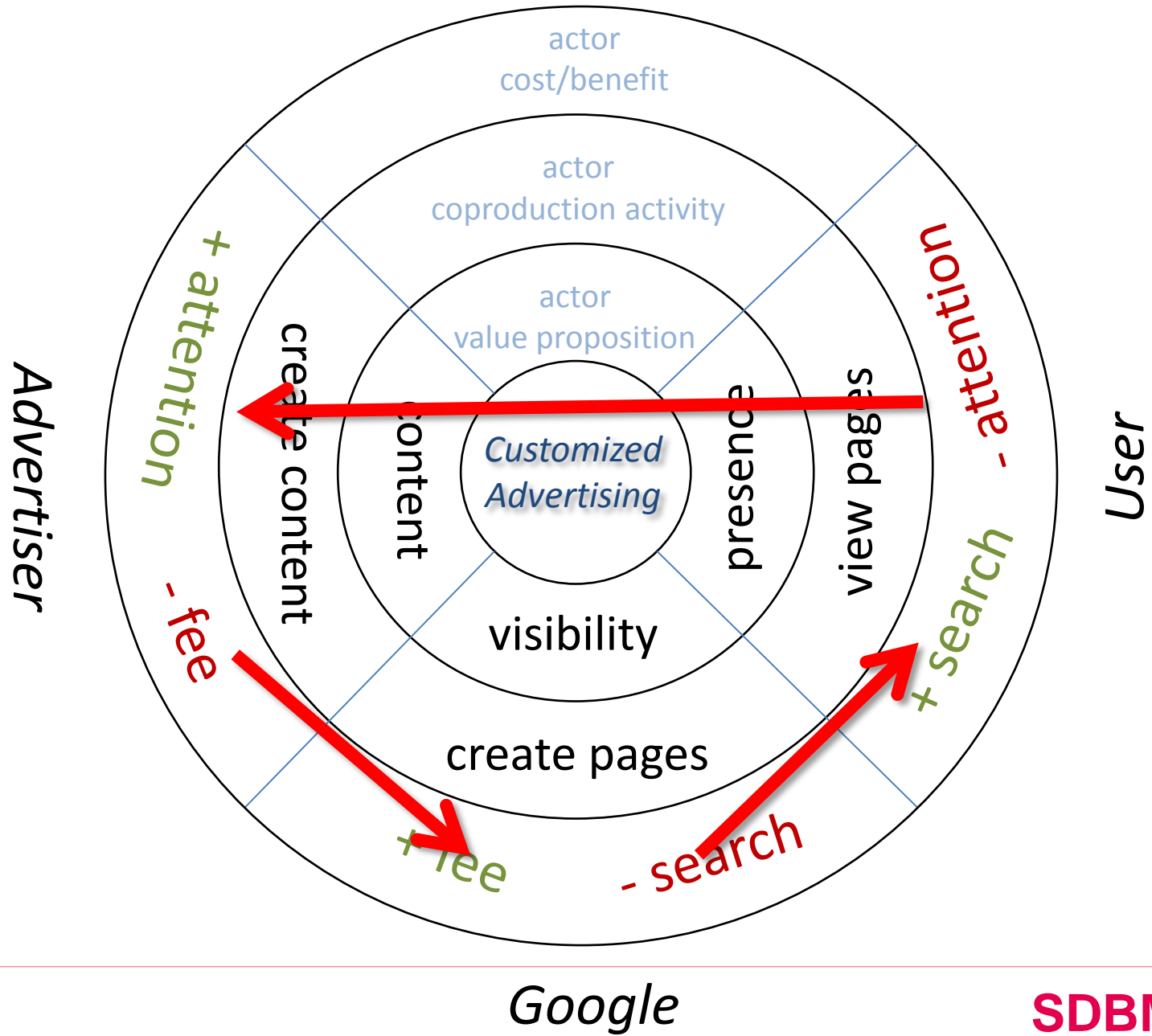


Which activities must  
be performed by the  
network in  
collaboration to realize  
the value-in-use?



What are the costs/benefits for each actor (financial and non-financial) – and does this lead to a viable business network?

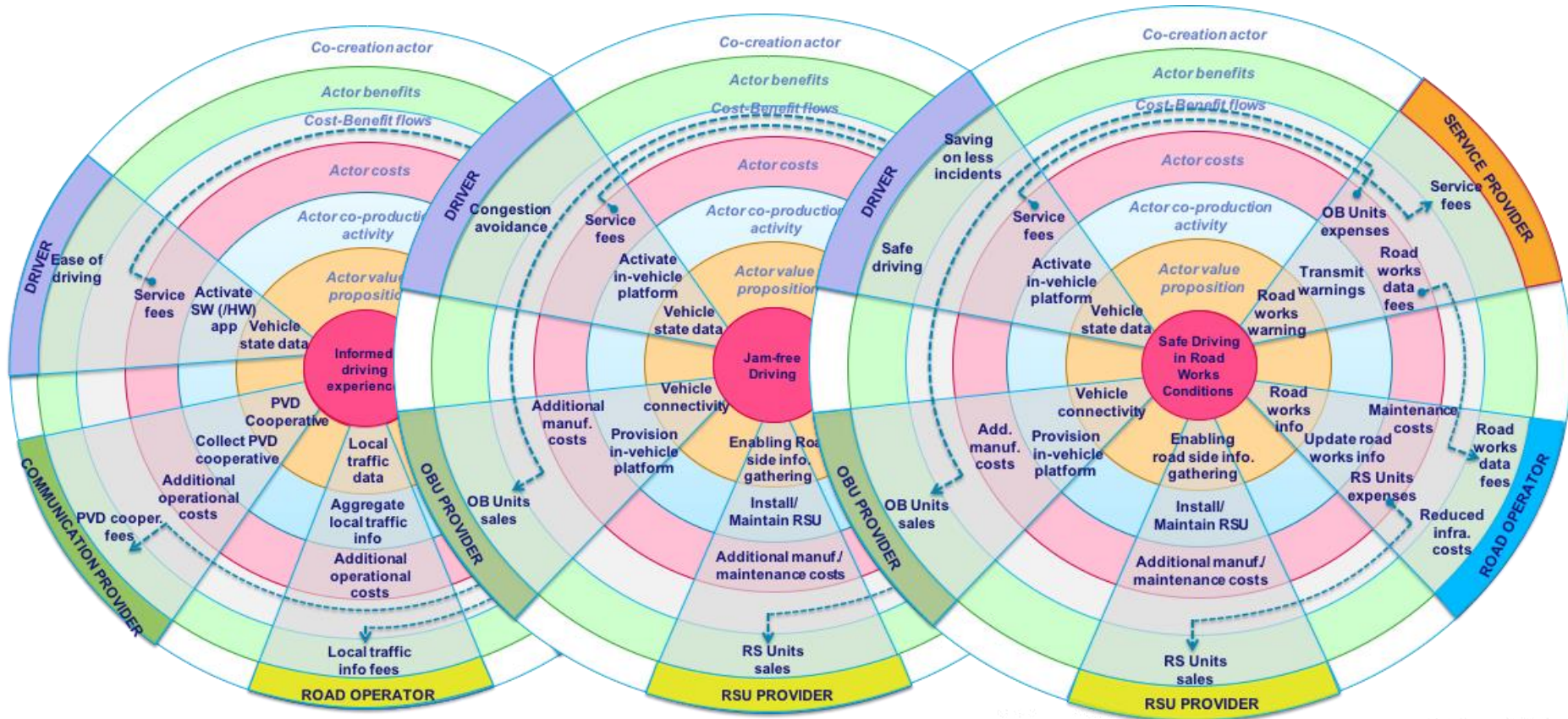






**Foggy traffic management? ITS!**





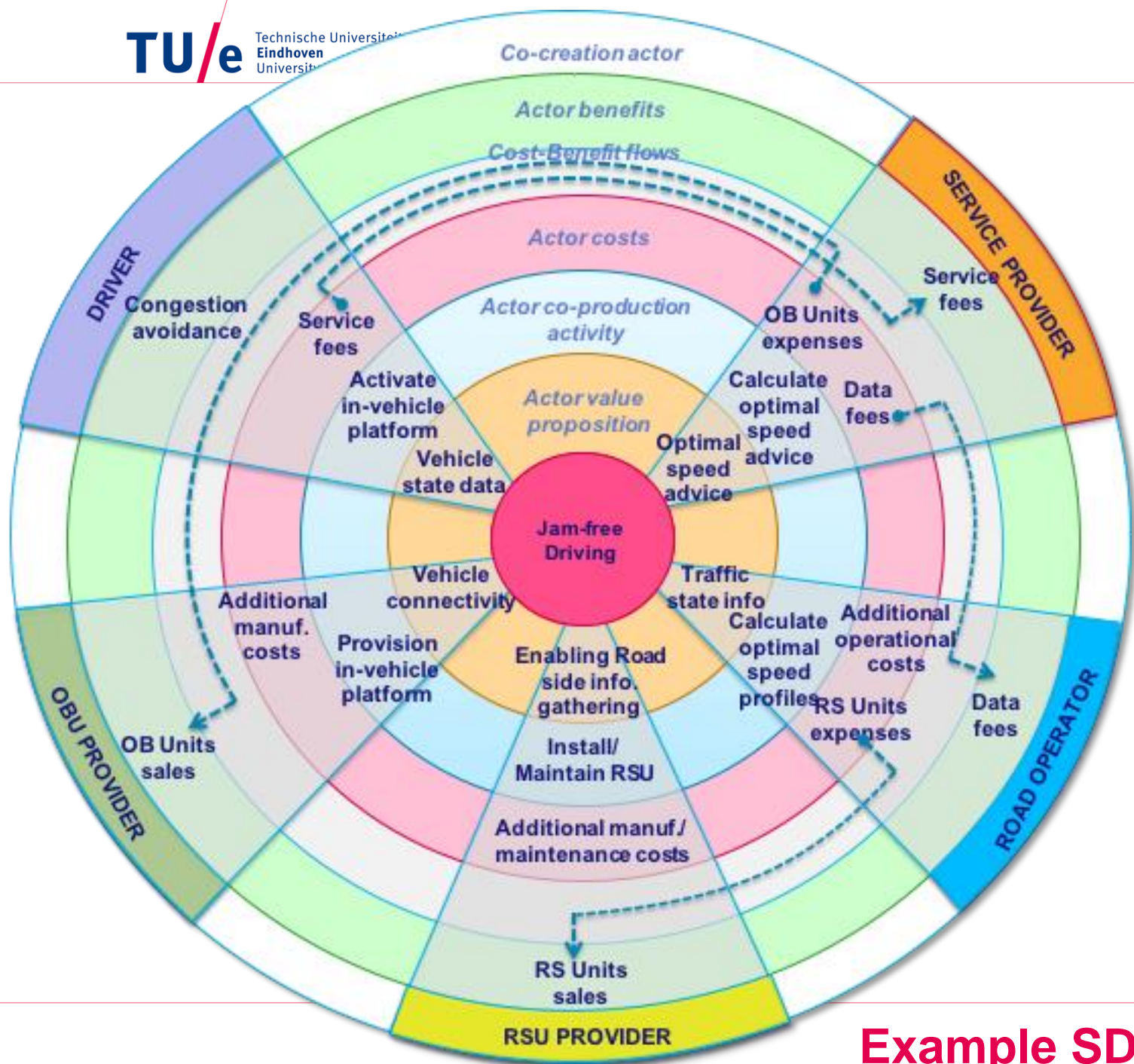
**Traffic Information Service  
with Floating Car Data  
Collection**

**Shockwave  
Damping**

**Road Works  
Warning**

## Example business models for ITS



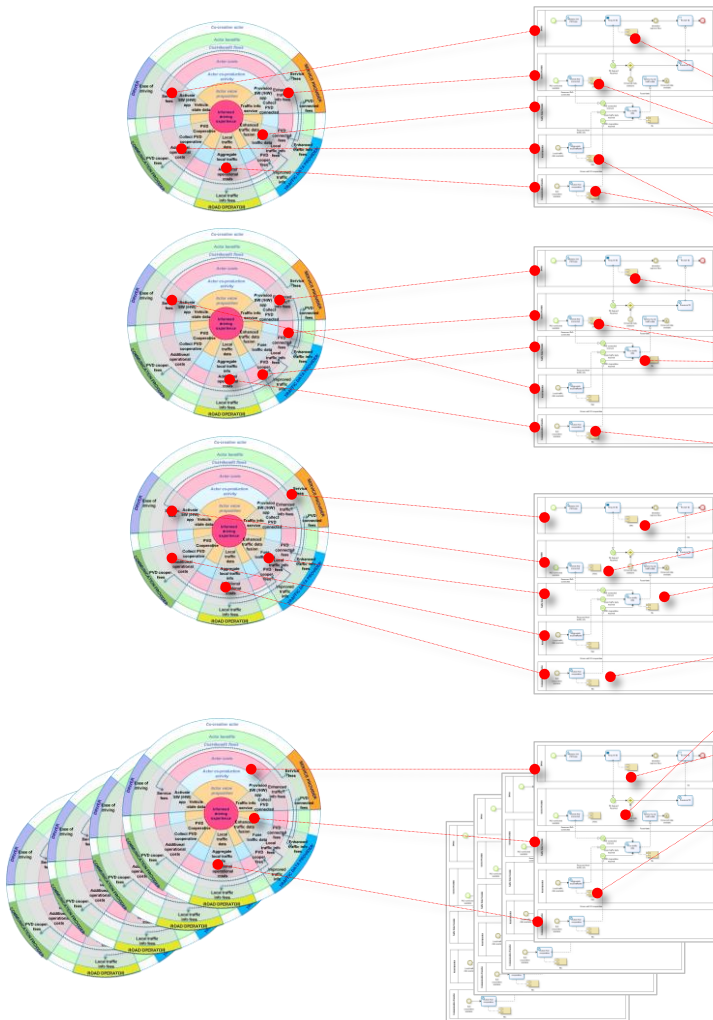


Shockwave Damping

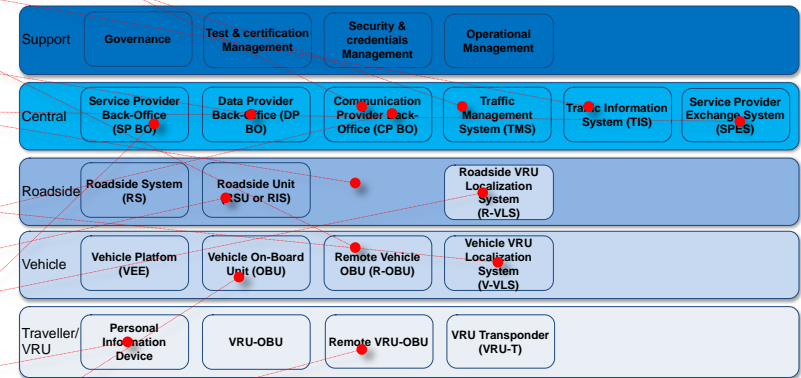
Example SDBMR

# Conclusions

## Business Models      Business Process Models



## Architecture



From business models to architecture



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misty



DICTIONARY

THESAURUS

## Definition of MISTY

mistier; mistiest

- 1 a  
:  
obscured by mist  
b  
:  
consisting of or marked by mist
- 2 a  
:  
INDISTINCT <a *misty* recollection of the event>  
b  
:  
VAGUE, CONFUSED <avoided the large, vague, *misty* issues — Reuben Abel>
- 3 :  
TEARFUL

### WORD OF THE DAY

voluble

characterized by ready or rapid  
speech

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