

# User's Viewpoint on Evolution

**UIC 3rd World Conference on Rail Telecoms**  
Christian Veits

## User's Viewpoint on Evolution



today



...everything from today ...

... but faster – bigger – better - easier



# Future Challenges of Mobile Communication in Railway

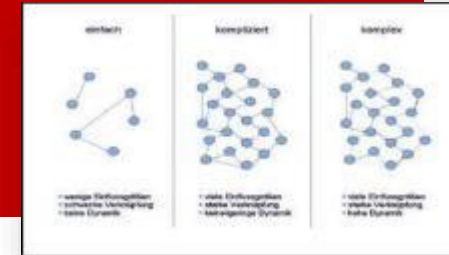
## flexible mobility



## new applications



## complex systems



## more passengers



## more cargo



## cost pressure



# Railway Business

## Railway undertaking



## Shunting

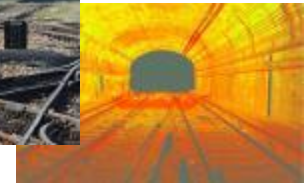


## Freight terminals

## Technical Services



## Power plant



- Operational communications
  - Easy to use
  - Flexible configuration
  - Highly reliable
  - Highly available
  - investment security
  - Easy upgrades
  - ATO ready
- Public communications
  - Entertainment
  - Business (traveling office)
    - Interruption-free voice calls
    - Mobile office
- Reach conservative customer environment
- Cope with difficult environmental conditions
- Future proof
  - automated train preparation
  - Remote shunting route request
  - Rolling stock information with electronic markers localization features thefts protection
- New and future customer demands
  - Automatic inventory
  - Localization of equipment
  - Identification by electronic markers (IoT)
    - ... e.g., drag shoes
  - Automated and remote error detection
    - 3D scanners
    - Spectrum analysers

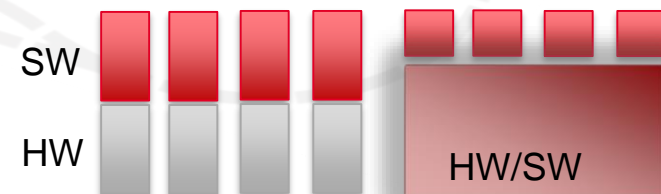
# Challenges

## Challenges

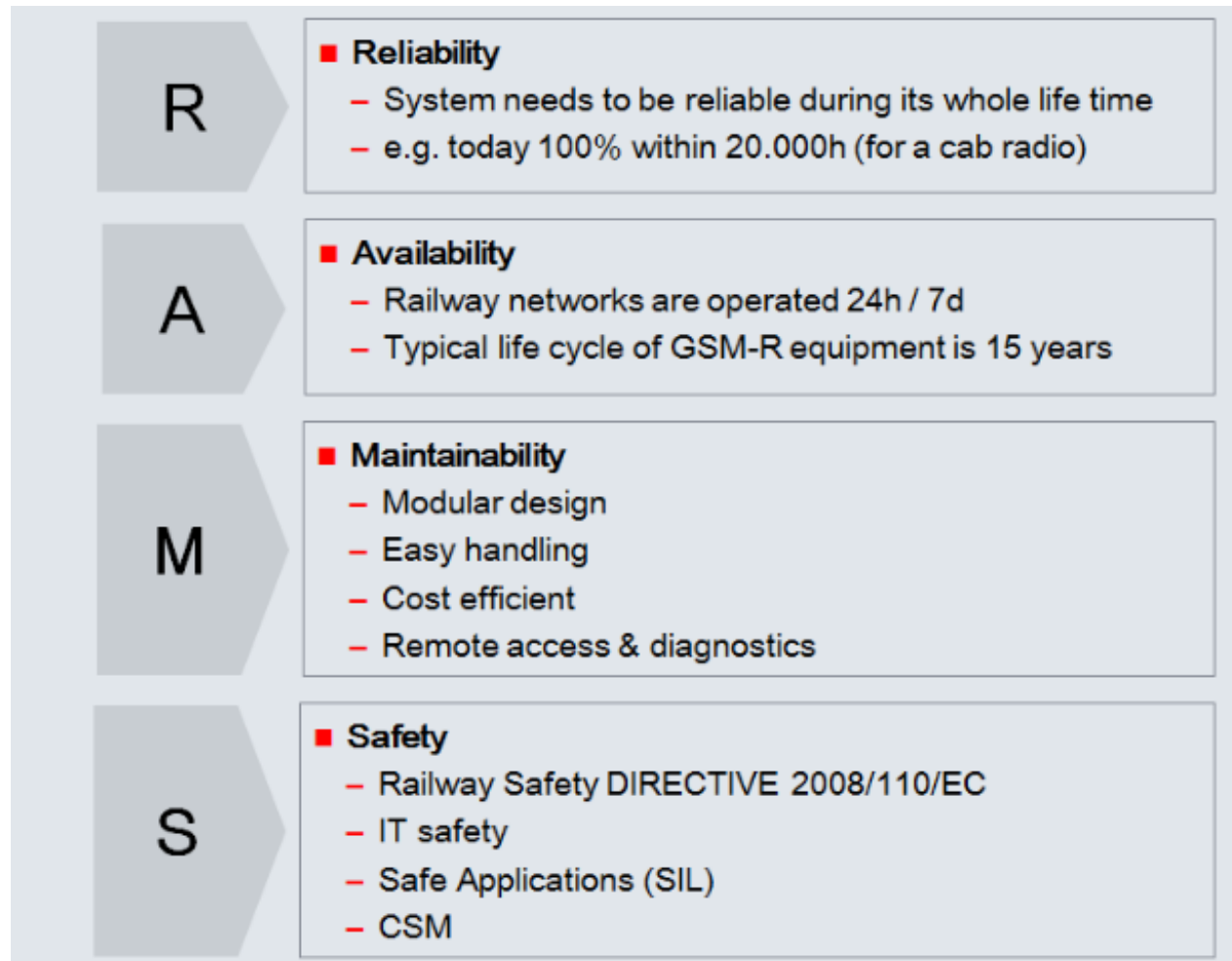
- Efficient use of resources
- Qualification of employees
- Knowledge management
- Merging of technologies
- Increasing complexity
- Increasing bandwidth demand
- Reduction of customized solutions
- Vendor optimization
- Seamless system replacement (EoL)
- Growing customer expectations

## Opportunities

- Realization of uniform system landscape  
Increase standardization
- Higher flexibility regarding mobile devices  
and applications
- High user acceptance
- Usage of public mobile networks
- Separation of transport and user plane
- Integral systems, central monitoring

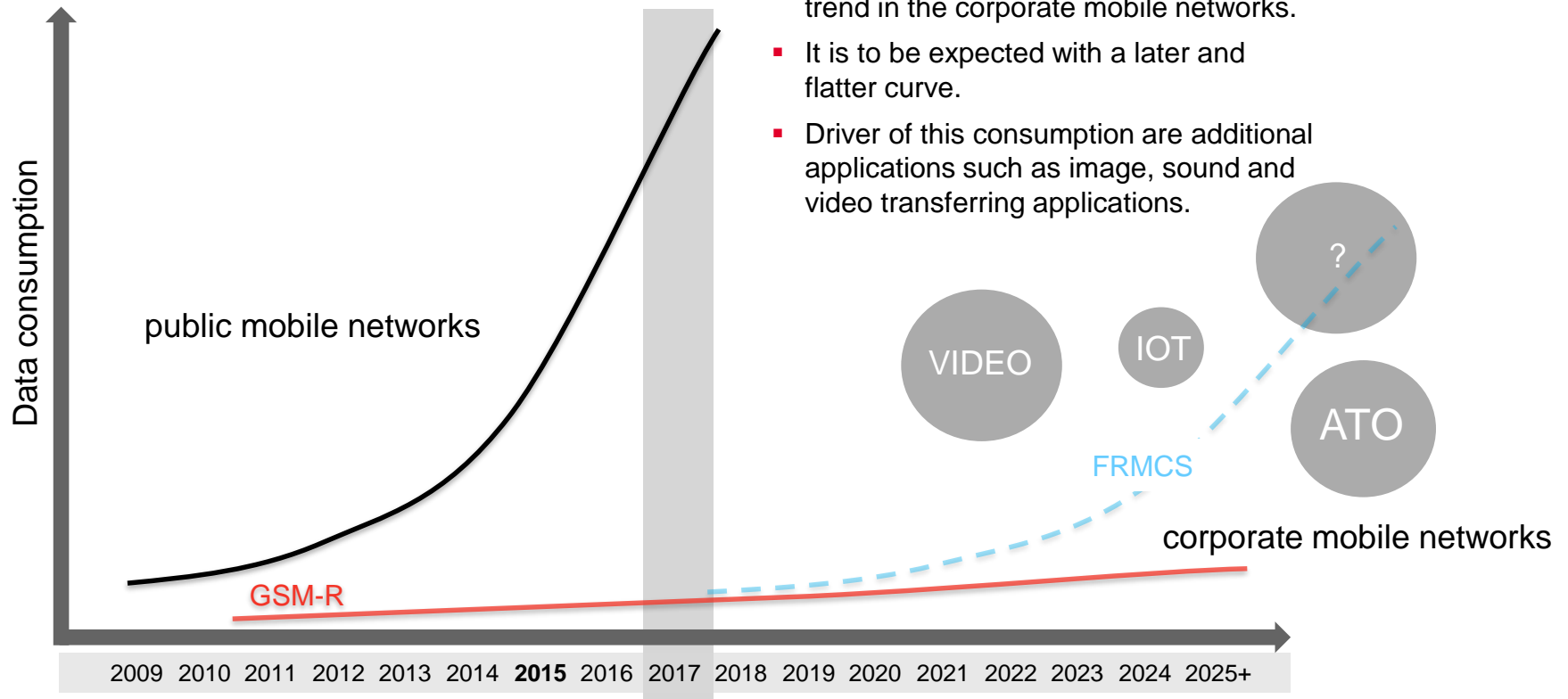


# RAMS





# Bandwidth and Development Paths Expansion - Withdrawal - Convergence ?



- The exponentially rising data consumption in public mobile telephone networks will also be estimated as a trend in the corporate mobile networks.
- It is to be expected with a later and flatter curve.
- Driver of this consumption are additional applications such as image, sound and video transferring applications.

# Rethinking the Process

## now

### 1. Requirements

Will do Facebook



### 2. Technology/Functionality

Built Facebook

## future

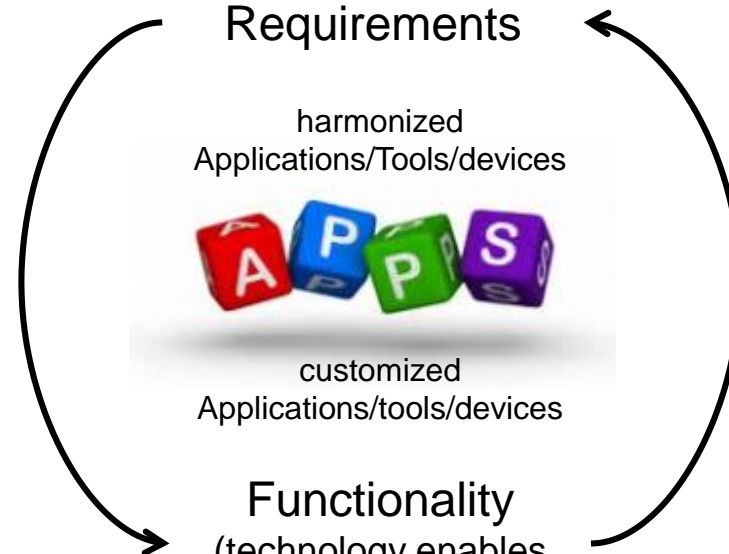
### Requirements

harmonized  
Applications/Tools/devices



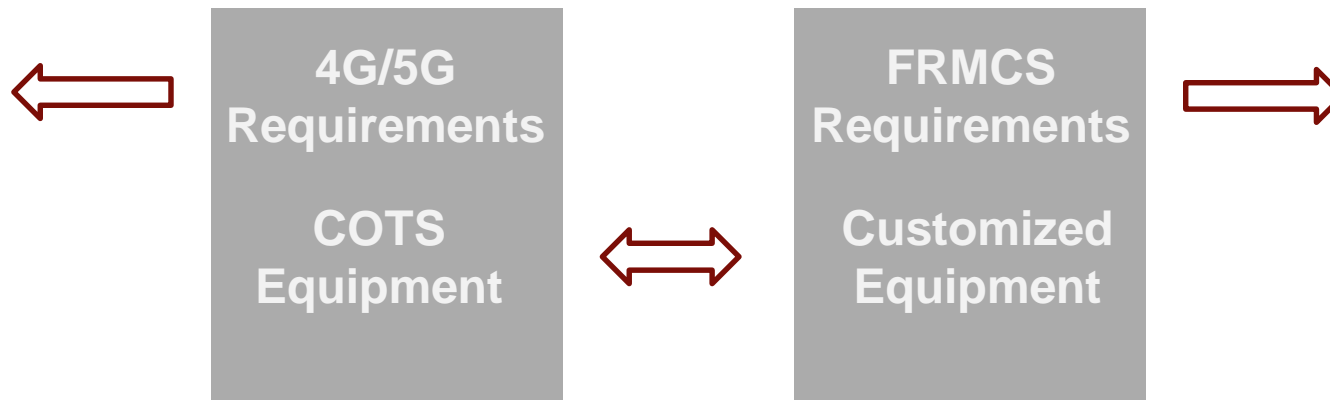
customized  
Applications/tools/devices

**Functionality**  
(technology enables  
more)





# Infrastructure Managers as a Customers





**Thank you!**