Strategic Discussion II: Interoperability - possibilities & limitations
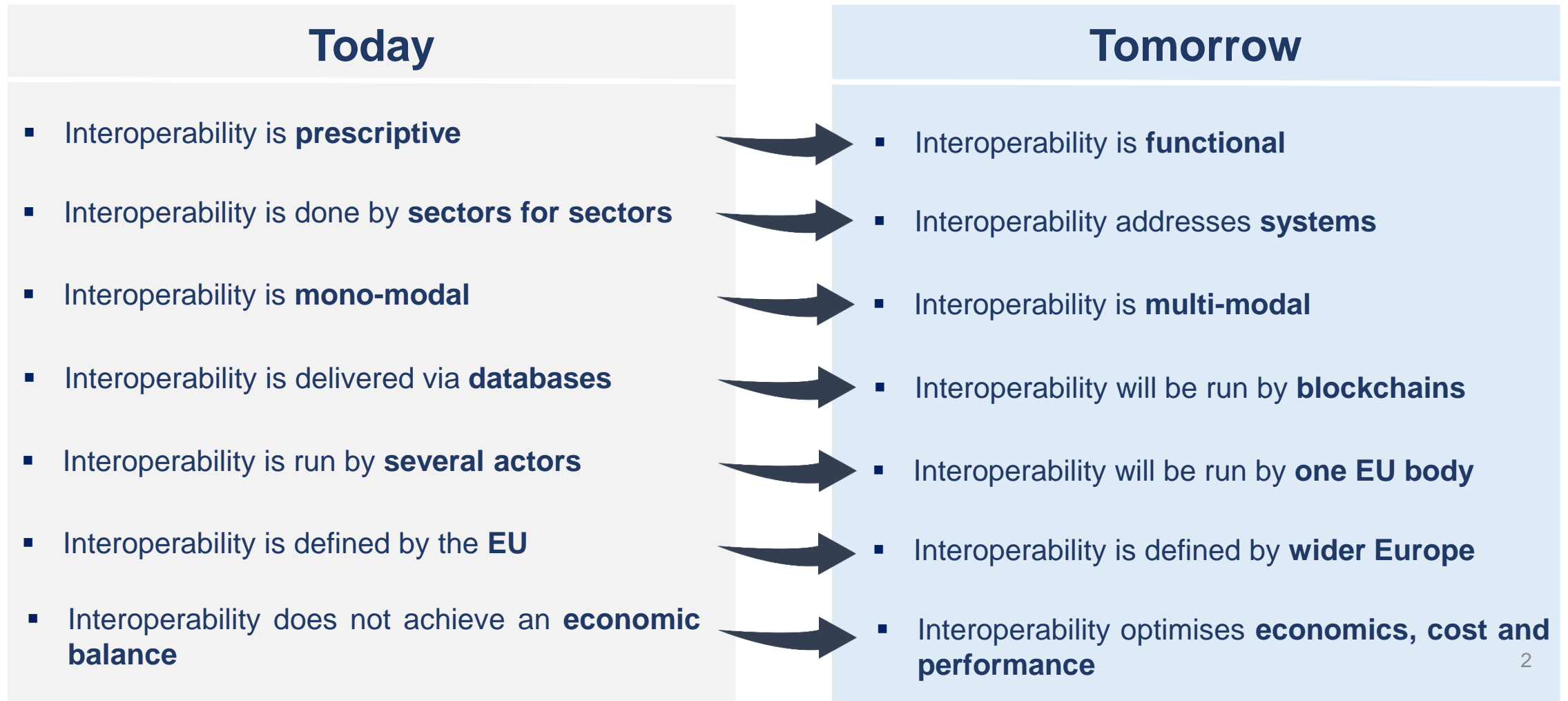
Presentation of rail infrastructure managers to the PRIME plenary meeting
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II. How does Interoperability evolve ?

Today	Tomorrow
▪ Interoperability is **prescriptive**	▪ Interoperability is **functional**
▪ Interoperability is done by **sectors for sectors**	▪ Interoperability addresses **systems**
▪ Interoperability is **mono-modal**	▪ Interoperability is **multi-modal**
▪ Interoperability is delivered via **databases**	▪ Interoperability will be run by **blockchains**
▪ Interoperability is run by **several actors**	▪ Interoperability will be run by **one EU body**
▪ Interoperability is defined by the **EU**	▪ Interoperability is defined by **wider Europe**
▪ Interoperability does not achieve an **economic balance**	▪ Interoperability optimises **economics, cost and performance**

IIIa. What are the main issues with interoperability ?

Complexity
- Prescriptive TSIs
- Long life-cycle of TSIs
- Slow process (5 years)

Automation
- New technology (IoT, robotics, etc.)
- No interoperability
- No interfaces

EU vs non-EU
- New standards (Obor, etc.)
- Unclear interfaces
- Competition

Transport
- Mono-modal TSIs
- No interfaces
- Costs, time, fragmentation

Assessment
- Ex-post evaluation
- Long review periods
- Economic aspects

Budget
- Limited budget resources
- High costs due to complexity
- Budget EU vs non-EU

IIIb. Case study: ERTMS

Complexity

- 'Old' standard
- Fragmentation IMs vs RUs
- Slow process (20 years)

Automation

- Adaptability to new technology ?)
- Interfaces secured ?
- ERTMS is underlying layer for ATO

EU vs non-EU

- New standard ? (non-EU ERTMS)
- Future competition ?

Transport

- ERTMS one amongst other systems
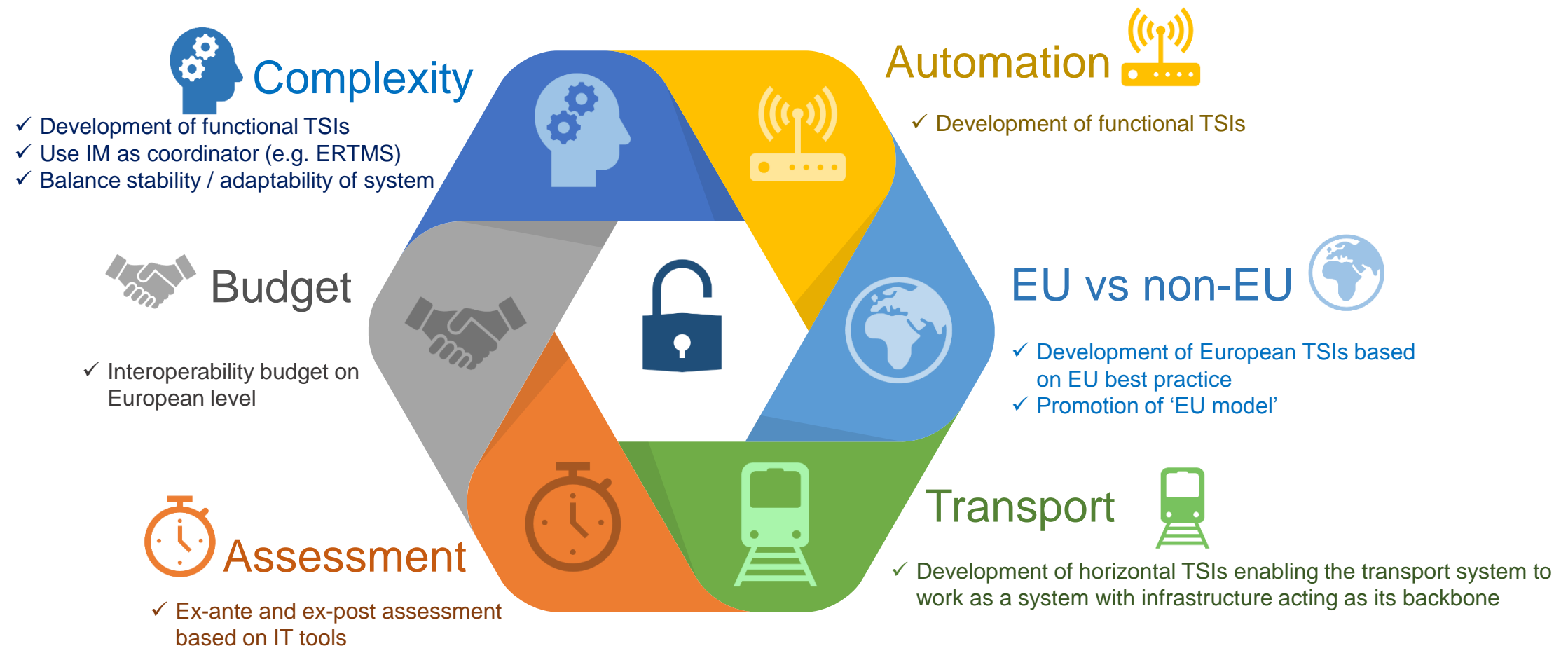- No interfaces
- Costs, time, fragmentation

Assessment

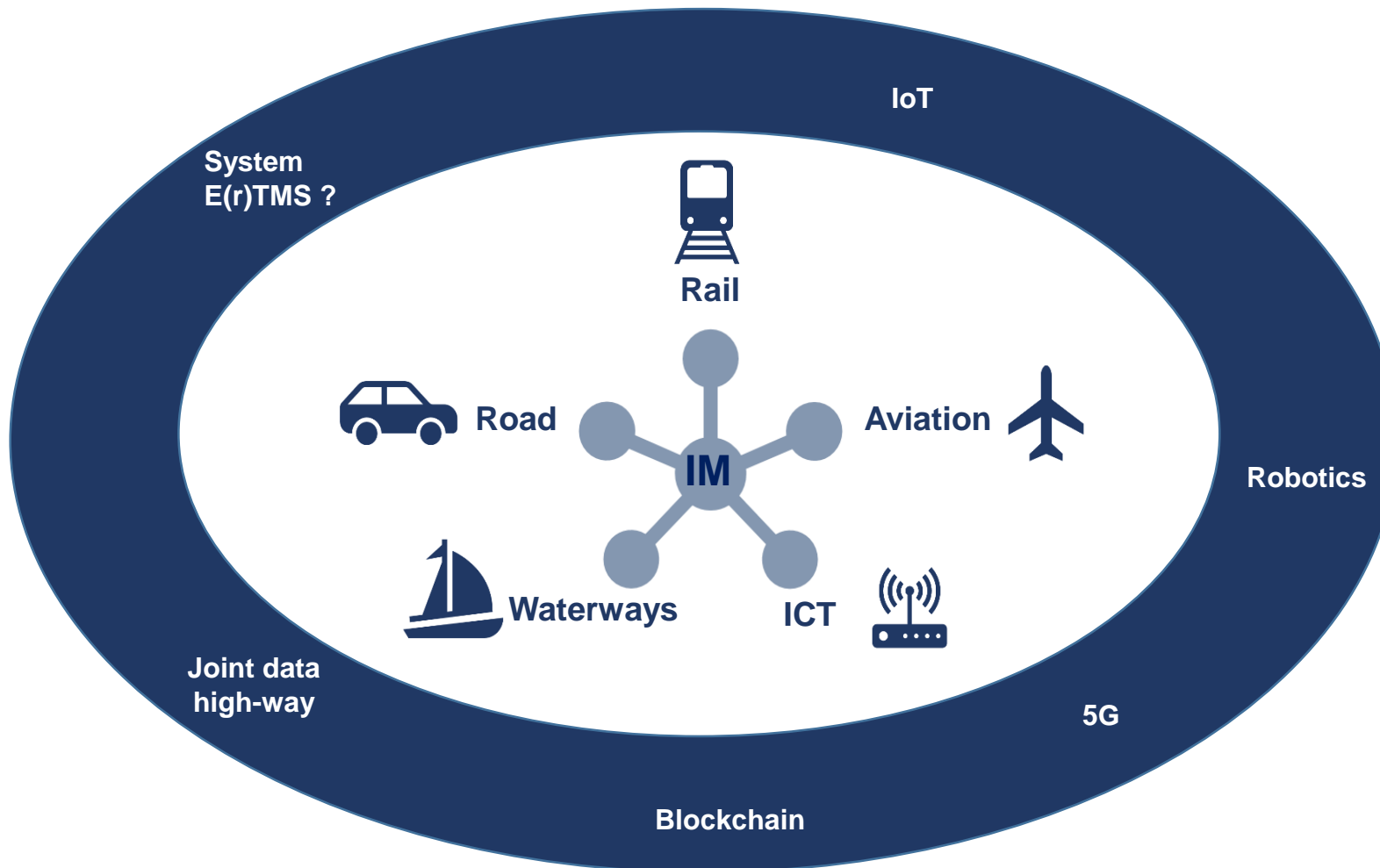- Ex-post evaluation
- Long review periods
- Economic aspects

Budget

- Limited budget resources
- High costs due to complexity
- Budget EU vs non-EU

IV. How can the issues be solved ?

Complexity
- ✓ Development of functional TSIs
- ✓ Use IM as coordinator (e.g. ERTMS)
- ✓ Balance stability / adaptability of system

Automation
- ✓ Development of functional TSIs

Budget
- ✓ Interoperability budget on European level

EU vs non-EU
- ✓ Development of European TSIs based on EU best practice
- ✓ Promotion of 'EU model'

Assessment
- ✓ Ex-ante and ex-post assessment based on IT tools

Transport
- ✓ Development of horizontal TSIs enabling the transport system to work as a system with infrastructure acting as its backbone

VI. Which target system should we prepare for ?

One multi-modal system with infrastructure as its backbone

Your thoughts ?