

THTH CoPVN in Arrowhead fPVN

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Content of the presentation

- Arrowhead fPVN briefly
- THTH role in Arrowhead fPVN
- Companies' and CoPVN's general targets in Arrowhead fPVN

Arrowhead fPVN

- Improving productivity in **P**roduction **V**alue **N**etworks
- EU KDT (Key Digital Technologies) and companies funds the development
- Budget 35M€ and duration 6/2023 – 8/2026
- Leading by Luleå University/Sweden
- Involves 43 organizations from 12 EU countries
- Pilots in process, aerospace and automotive industries
- Nordic countries focus on process industry
- [THTH CoPVN project](#)

Arrowhead fPVN WP9.3

Common tasks

- Micro-services (integration, API) (WP2)
- Major digital languages (standards) (WP3)
- Translations (between data models and standards) (WP4)
- Digital transformation management (WP10)
- Exploitations and dissemination (WP11)

Process industry pilots (WP9.3)

Stora Enso, Afry, Semantum from Finland

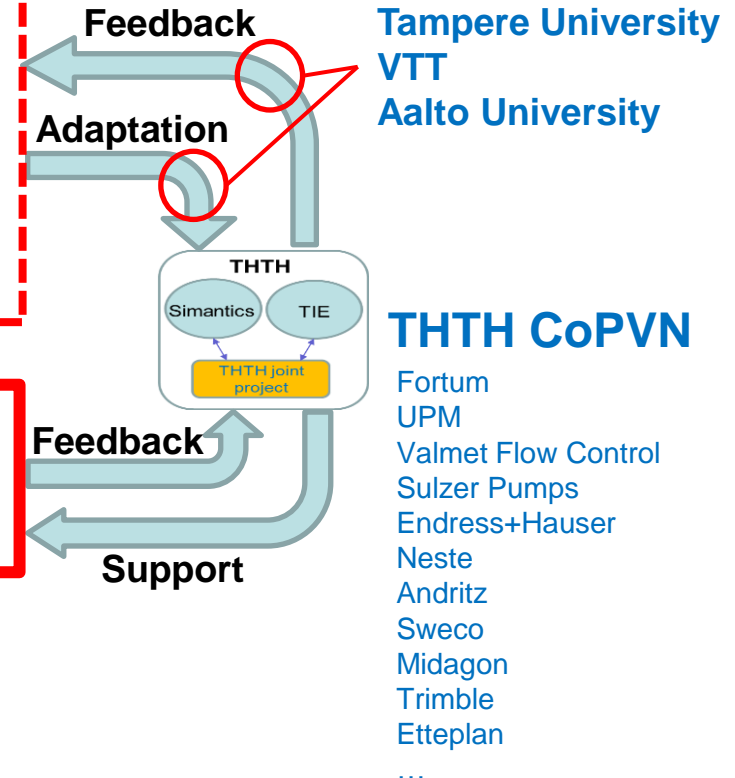
Automotive pilots (batteries)

Aerospace pilots

Sustainable energy pilots

Semiconductor pilots

Swedish pilots are
WP9.1 and WP9.2



COPVN TARGETS

Common CoPVN targets

- Supporting process industry network pilots
 - Providing concept and tools for companies to pilot collaborative digitalized concepts
 - Documenting pilot use-case examples for all ecosystem companies (deliverable)
- Enhancing business network infrastructure development
 - Streamlining digital inter-company business processes for use-cases
 - Common business rules and principles for ecosystem companies together with partners
 - ➔ enhancing digital capabilities of companies and the ecosystem network
- Supporting standardization infrastructure development
 - Participating in relevant international standardization activities to adopt best standards and concepts for the pilots (ISO, IEC, CEN, CENELEC,...) and to bring the requirements and views of Finnish industry to international standards
 - Contributing alignment of standards together with international partners (DEXPI, CFIHOS,...)
 - Activating national standardization

Big picture

- Pilots are focusing on information exchange in the selected use-cases
- The goal of the pilots is to produce more detailed understanding of the use-cases from the following perspectives ...

Information content of ...



Technical information

Operational information

Business information

Standards for ...



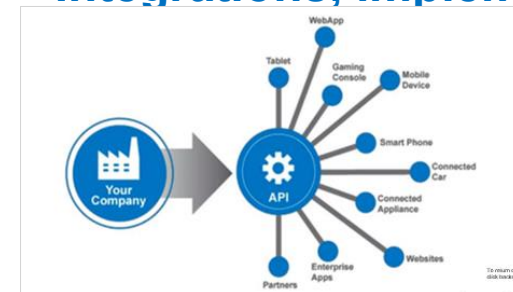
information content,
workflows and
business messages

- ... to improve productivity through digitalization

Workflows to exchange information ...



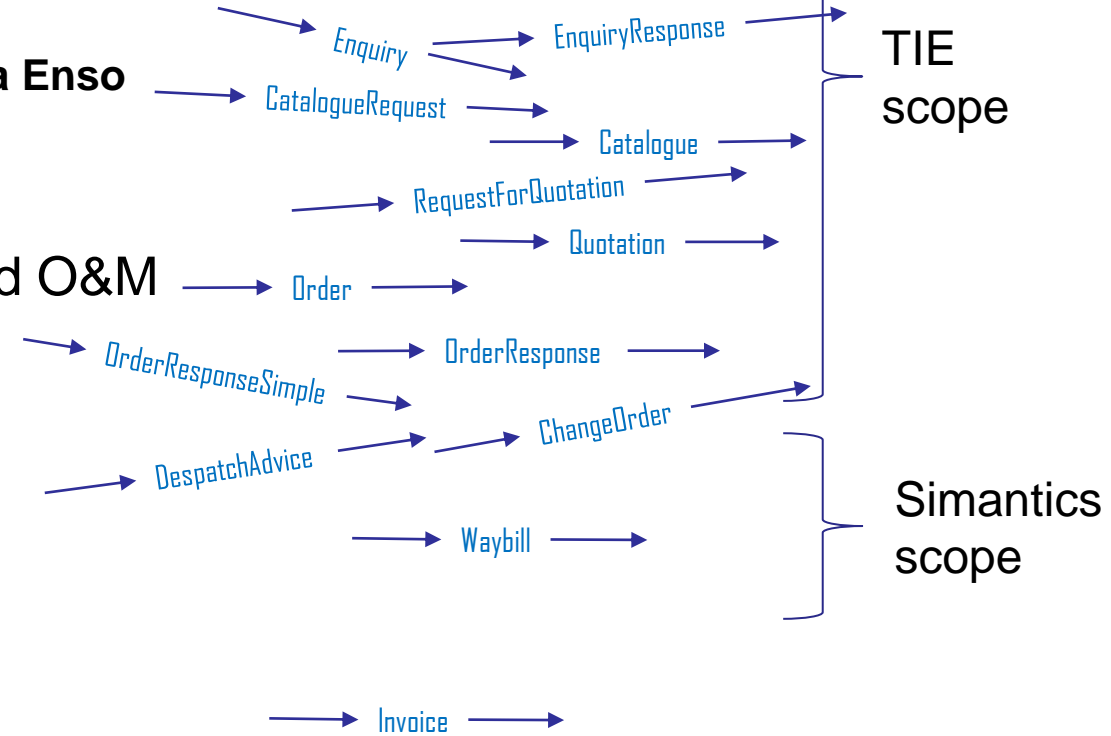
Integrations, implementations ...



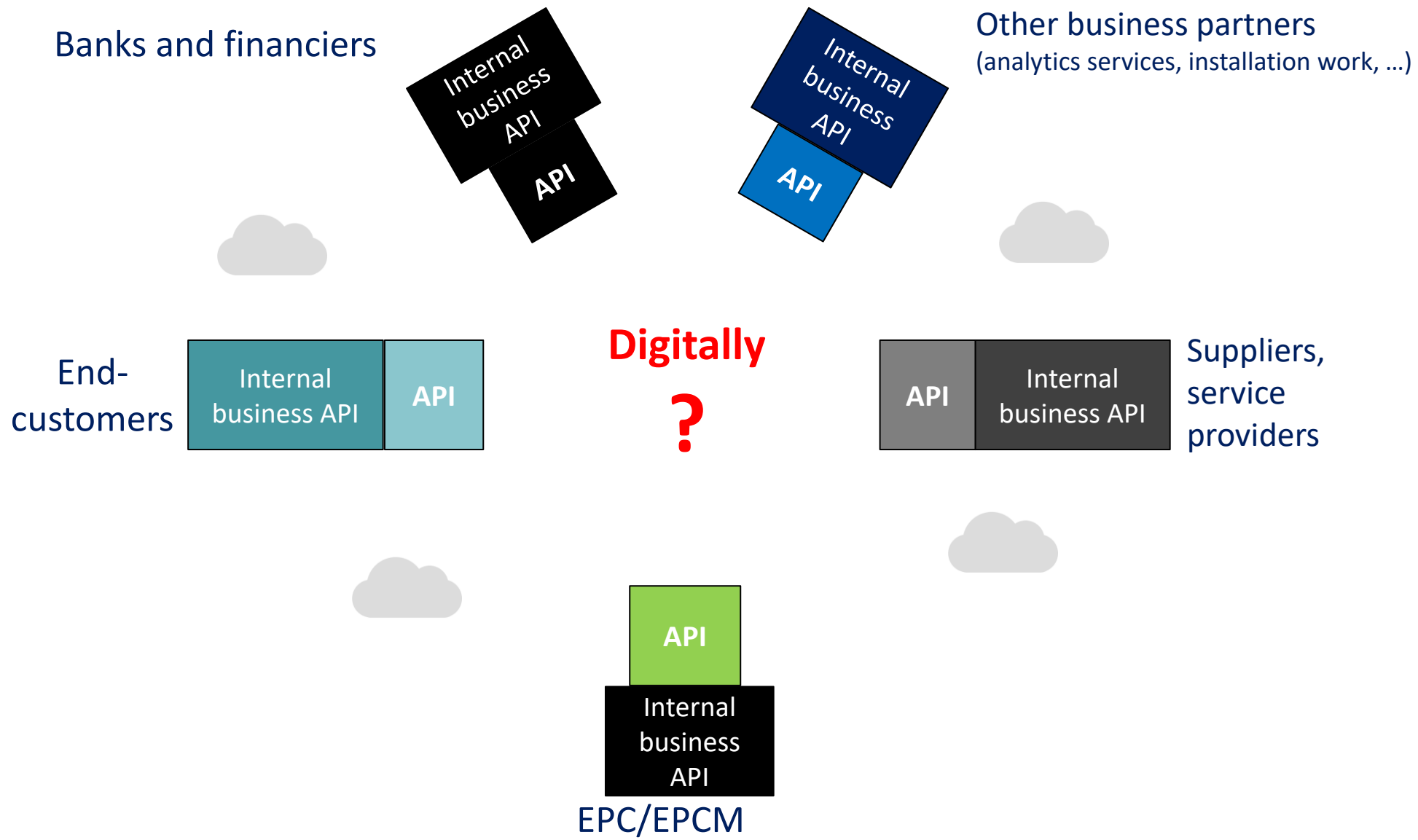
API technologies and
information architecture for
implementations

WP9.3 pilot use-cases in fPVN

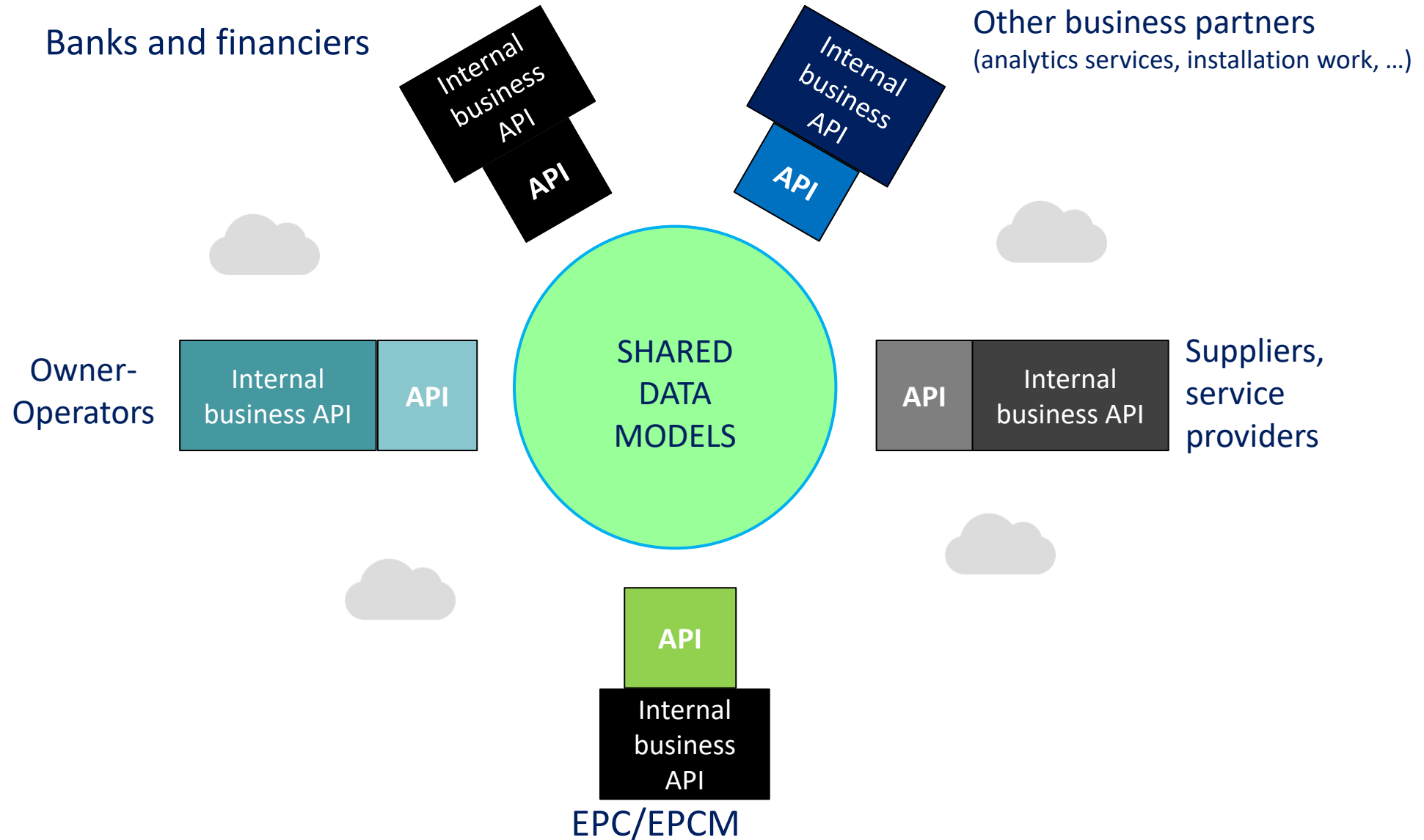
- Technical information exchange in process industry investment projects and service operations
 - **Investment project** use-case in digital value chains for **Stora Enso** (in Finland and Sweden)
 - Pilot partners Valmet Flow Control Oy, Afry Finland Oy, Endress+Hauser Oy, ...
 - DEXPI data exchange partner Semantum
 - **Supplier service** use-case in digital value chains for **Stora Enso**
 - Pilot partner Valmet Flow Control Oy
- Dependability data management in engineering and O&M
 - Integration to investment project use-case for **Afry**
 - Pilot partners **Stora Enso** and supplier companies
- Sustainability data
 - Integration of sustainability data use-case for **Stora Enso**



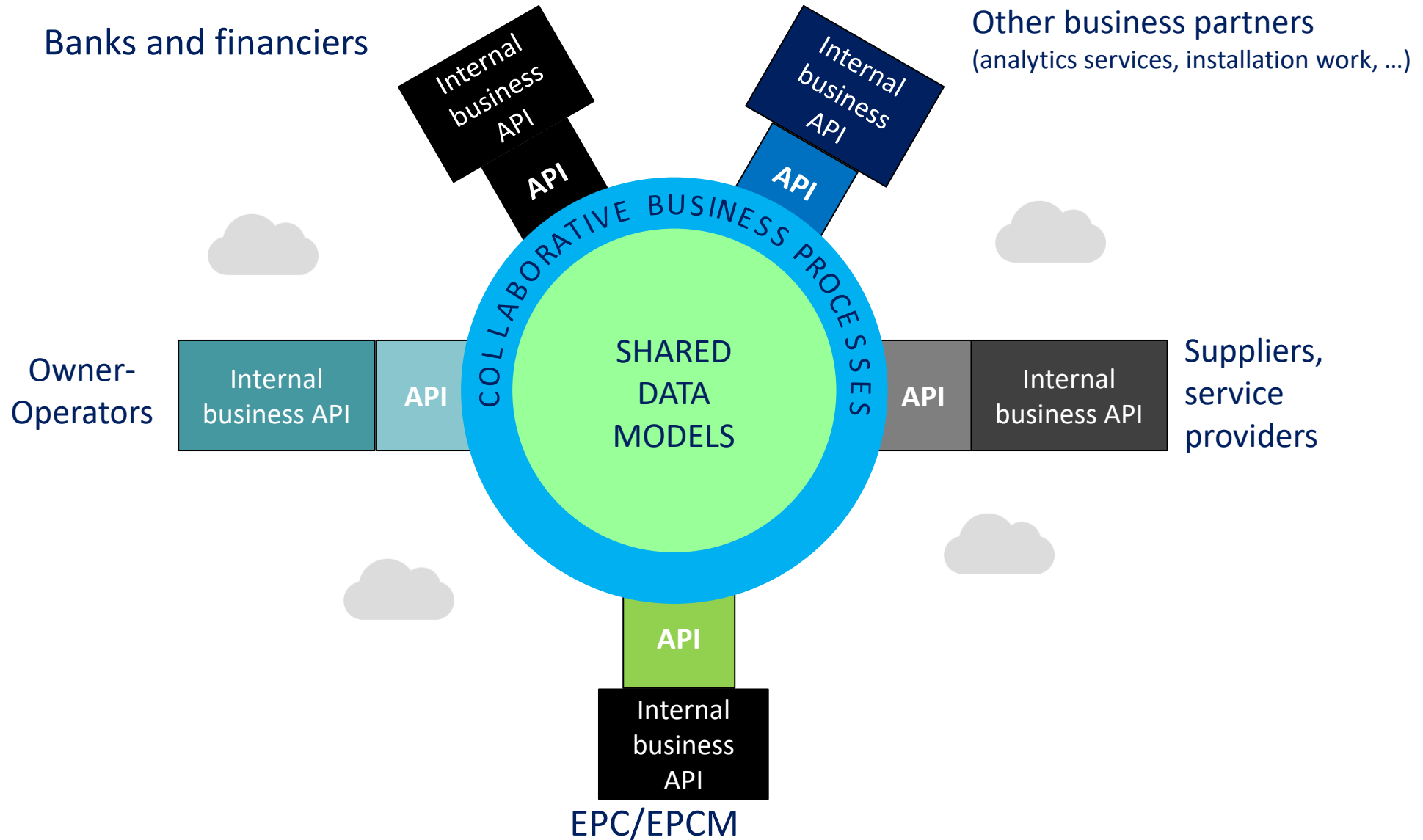
Starting point for inter-enterprise digitalization



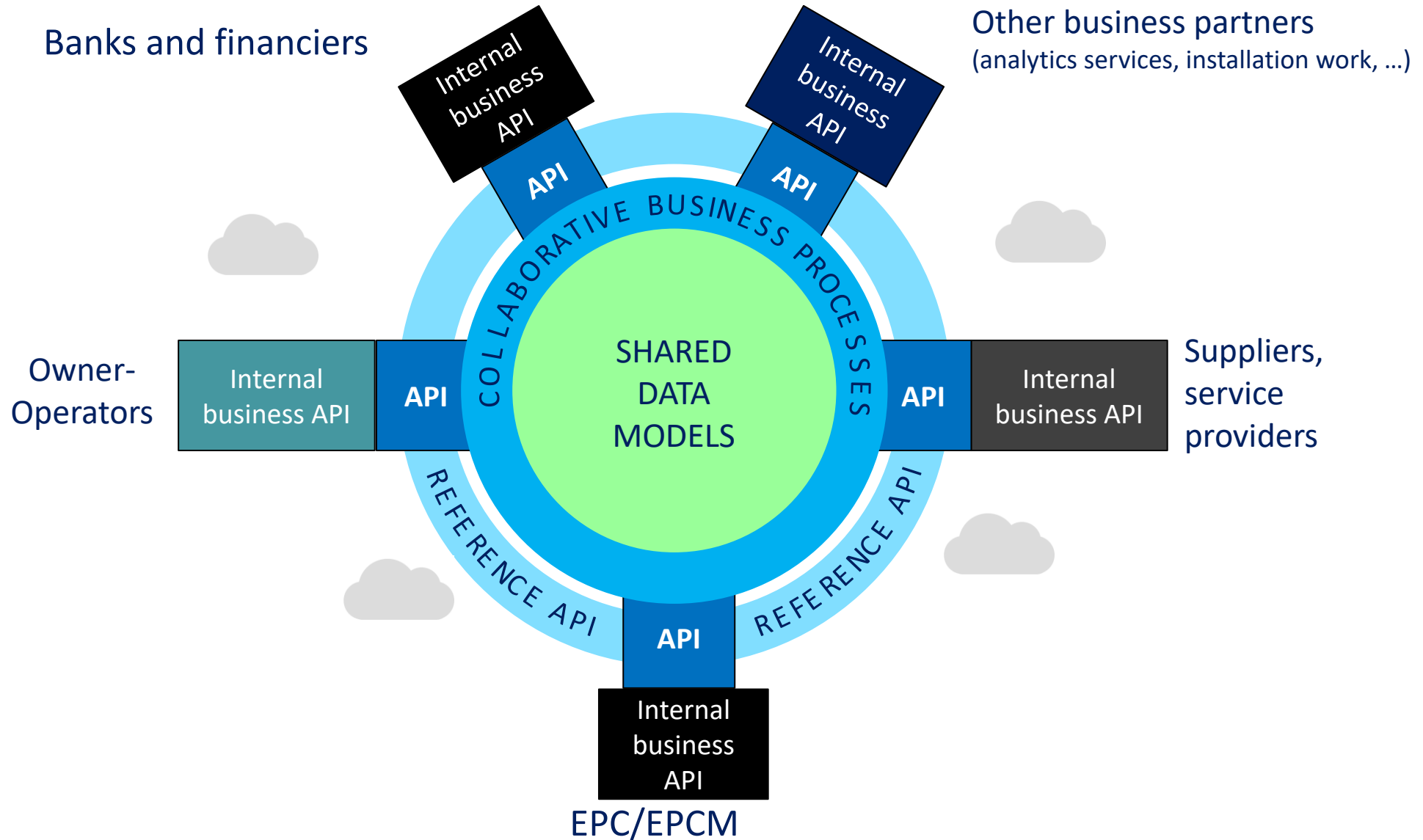
Steps for inter-enterprise digitalization



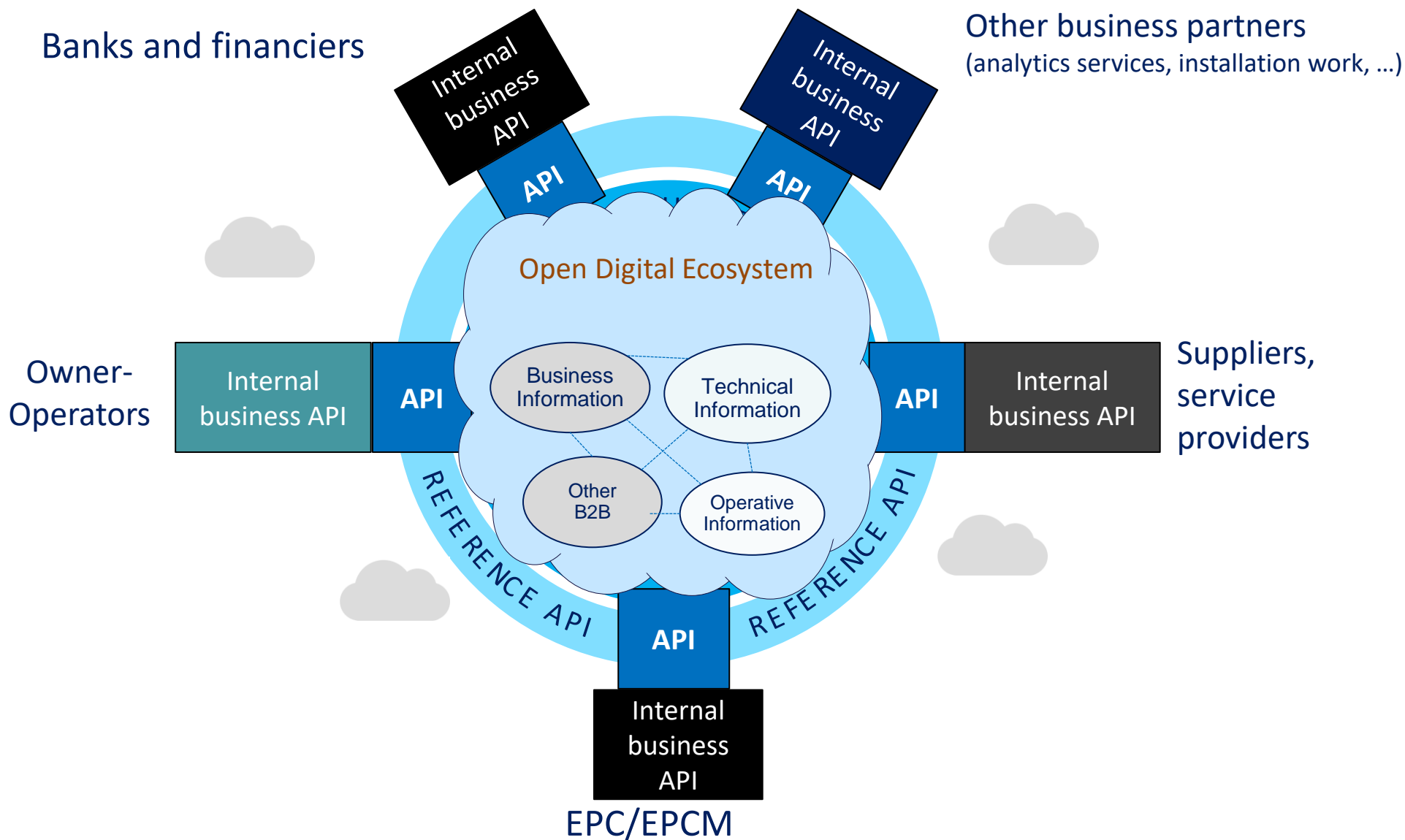
Steps for inter-enterprise digitalization



Steps for inter-enterprise digitalization



Final target for inter-enterprise digitalization



Summary

- The process industry productivity development has lagged behind the general productivity development empowered by digitalization!
 - ➔ EU Key Digital Technologies program and Arrowhead fPVN project
- Combining different types of data for analytics and artificial intelligence requires standardization and common rules agreed between companies!
 - ➔ Digital transformation of business networks
 - ➔ The internal digital capability of companies is a basic requirement
- Through pilots, Arrowhead fPVN searches for solutions suitable for piloting companies

THTH

END