How can sharing of operational data improve the efficiency of operations? What are the barriers for sharing such data?

The rail story

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**YOUR FREIGHT FORCE**

MODAL SHIFT

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OUR PURPOSE
Modal Shift

We want to offer
such good rail products
to industrial companies,
that they shift the **transport of their goods**
from road to rail,
to **improve their own supply chain**
and to **actively contribute**
to climate and mobility

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OUR GXN PRODUCTS ARE
TOTAL END-TO-END SOLUTIONS FOR OUR CUSTOMERS

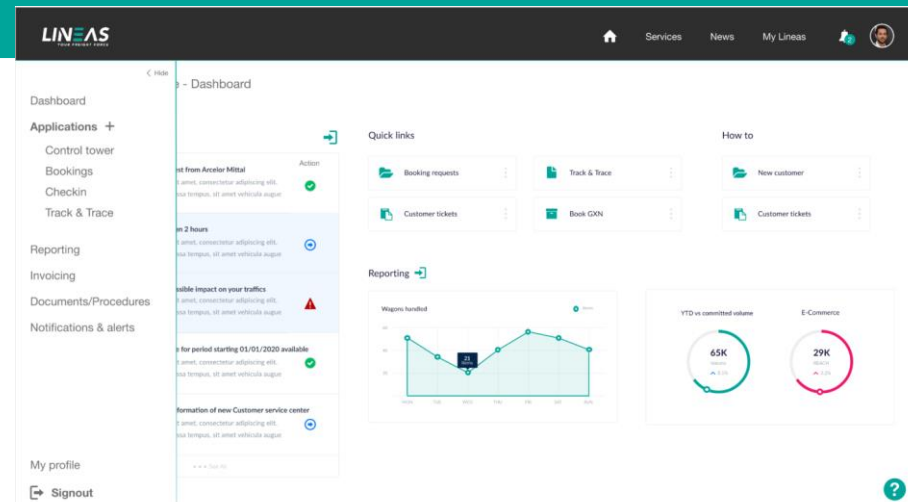First Mile   Long Haul   Last Mile

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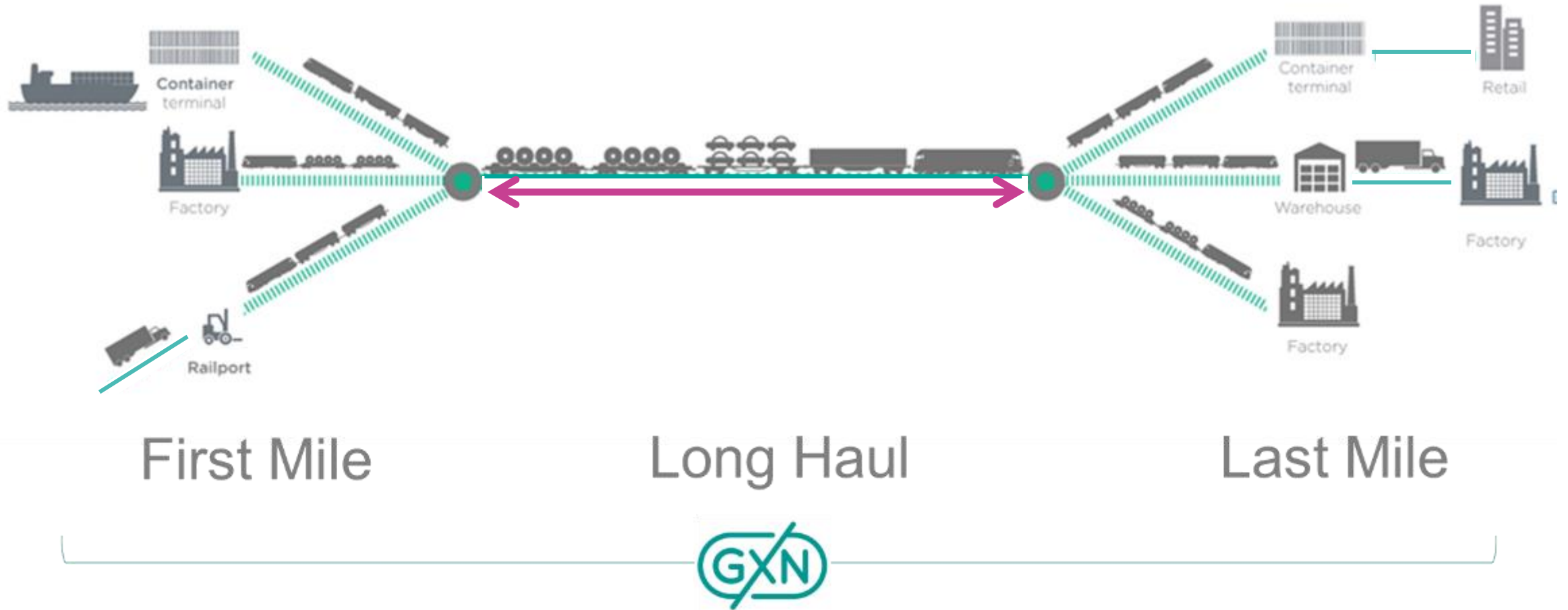
TO REALIZE THIS WE NEED AN E2E OPERATIONAL VIEW..

For reporting and realtime management
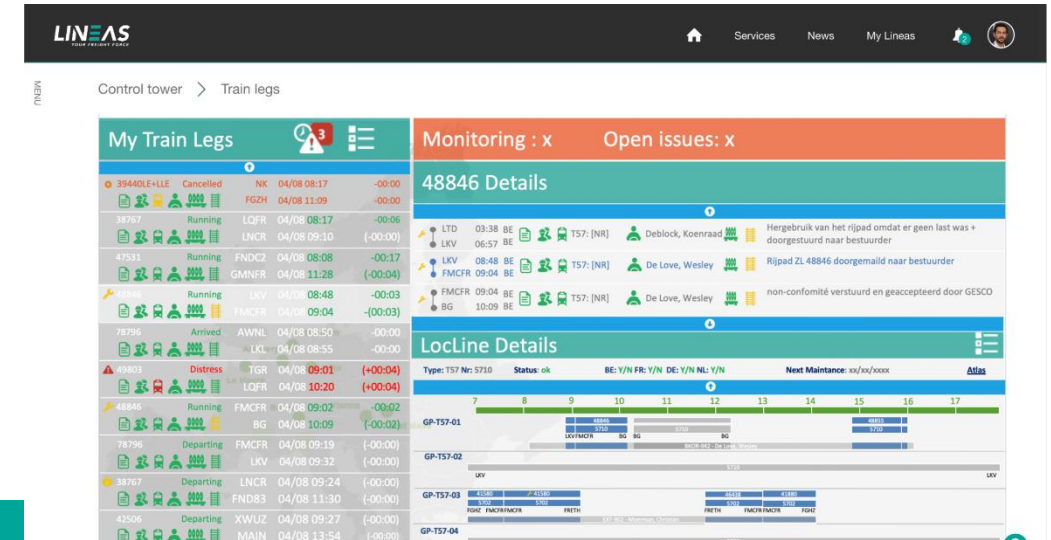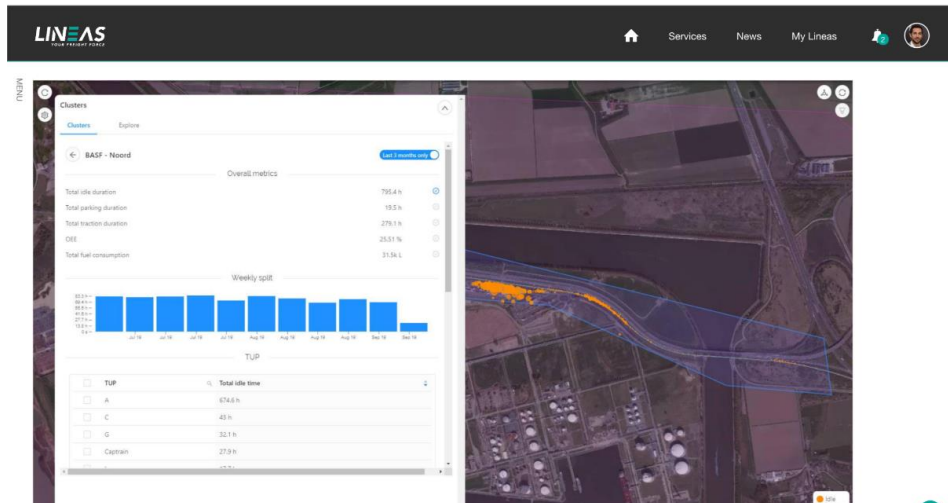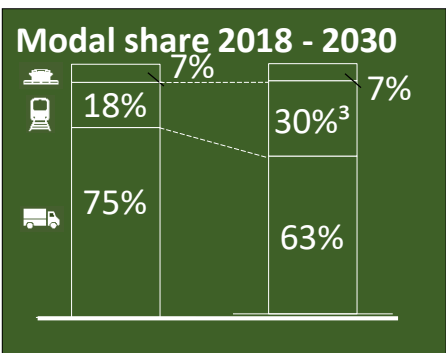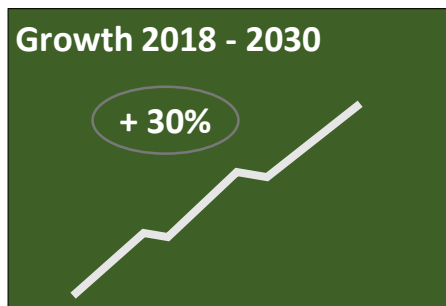

E2E Consolidated data flow

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...THIS WILL ENABLE TO SCALE-UP

As a company but also as a sector

Impact of modal shift on additional freight transport 2030 vs. 2018

in bn ton-km; EU 28 + CH, N; excluding pipeline, sea and air

Ambition

Growth 2018 - 2030

+ 30%

Modal share 2018 - 2030

7% · 18% · 75%

7% · 30%[3] · 63%

Levers

A. Continue **restructuring** and **modernisation** of RUs to achieve a competitive **cost base** and high resource **productivity**

Utilisation

B. Increase **quality, flexibility** and **ease of use of rail/ multi-modal products**

C. Vigorously strengthen **innovation**, enhance speed of **digitisation** and deployment of available **technology**

In general data sharing can provide every stakeholders with a lot of value…

Increase speed of existing processes

Empower our staff

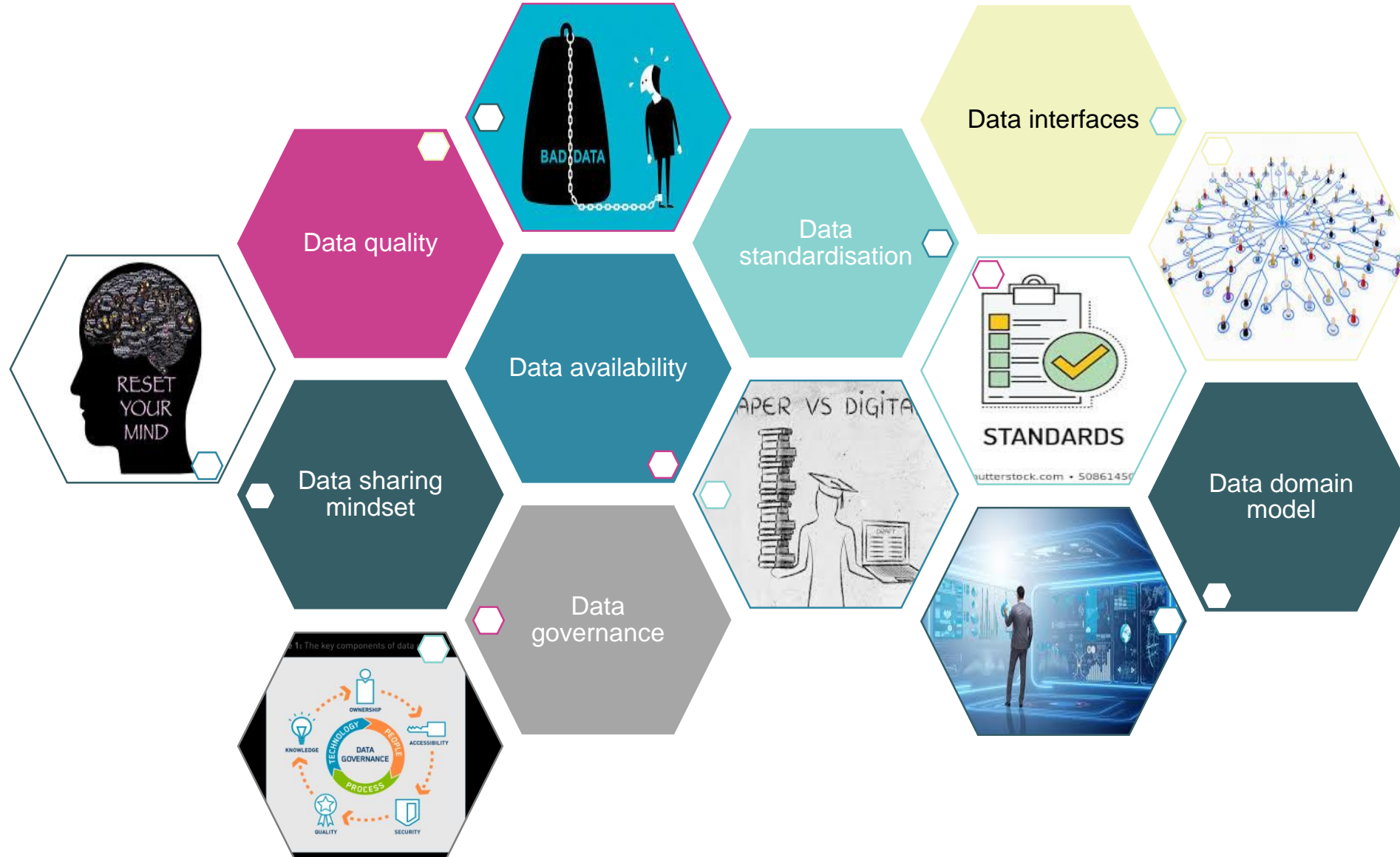
Improve quality of our processes

Improve safety level

Reduce operating costs

Constantly improve ourselves

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... in order to capture this value we need to address different challenges.

Data quality

Data interfaces

Data standardisation

Data availability

Data sharing mindset

Data governance

Data domain model

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Data sharing mindset

What do we read currently?

"DATA IS THE NEW GOLD"

❑ Threshold is often high to start sharing data often due to overestimation of value of existing data
❑ Value provided by integration of different data sources is often underestimated
❑ This can be managed
  ❑ by clear data governance rules ensuring usage & data visibility only to appropriate users
  ❑ enforcing data sharing by European laws or regulation

We believe that standardized and qualitative data exchange is a major enabler of our modal-shift vision
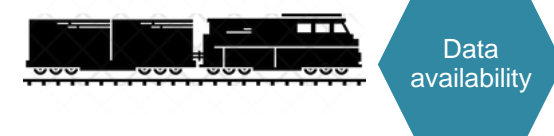
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Data sharing mindset

What is our sector doing?
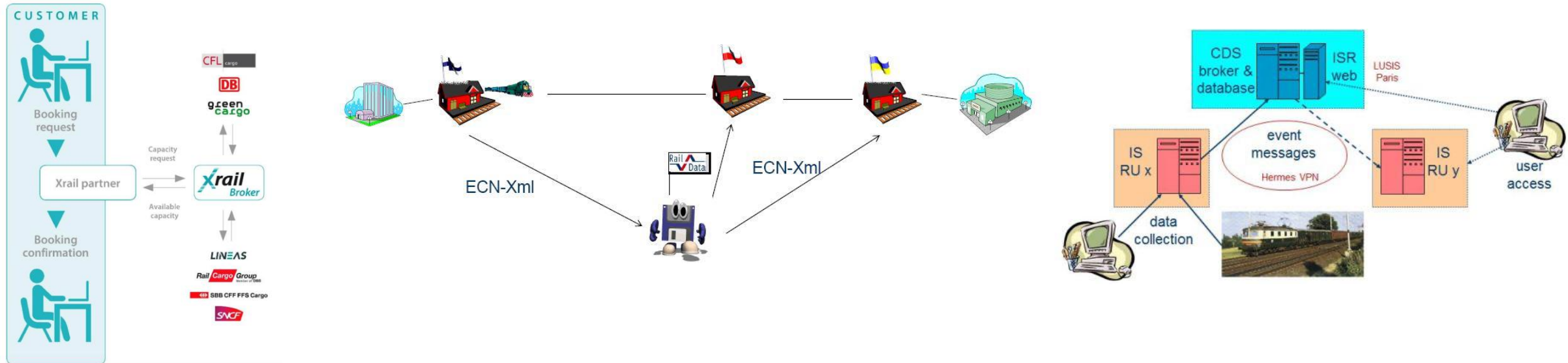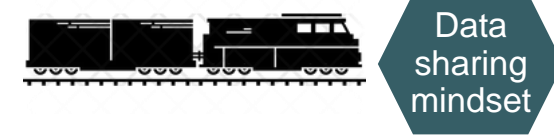
- Rail has historically always been aware of the important network nature of its business.

- Different solutions therefore exist to exchange operational data of:
    - Bookings via XRAIL
    - Transmission of consignment notes via Orfeus
    - Exchange of Track & Trace information via ISR, RNE-TIS, …

- The main challenges is now to integrate smaller players with much lighter IT systems: Some initiatives are taken but could be speeded-up
    - RailData WDI : Delivery & Hand-over messages
    - ..

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Data availability

Rail has still a lot of paper documents that need to be filled in …

Data availability

… part of them are also inserted afterwards into IT systems , others not

Increase speed of
existing processes

Improve quality of
our processes

Reduce operating
costs

Empower our staff

Constantly improve
ourselves

QUALITY

IMPROVEMENT

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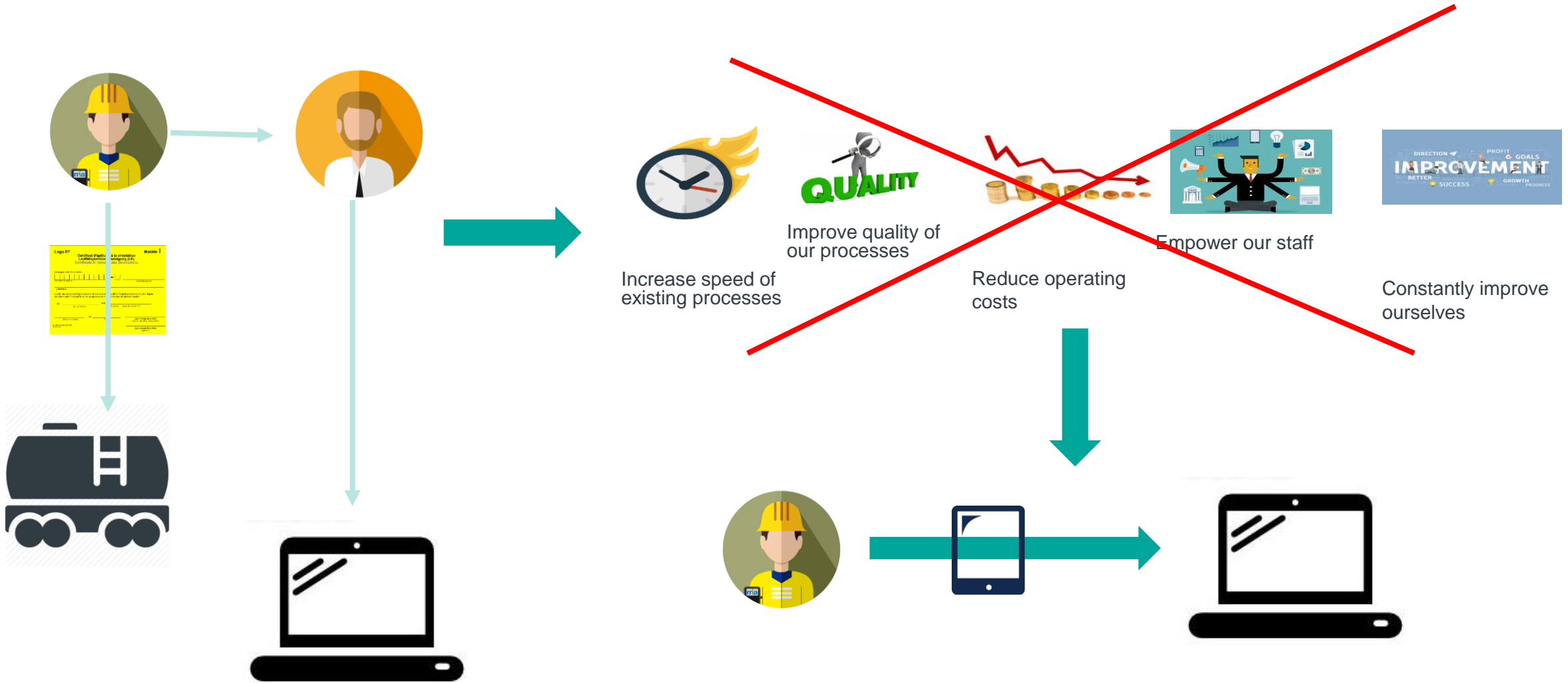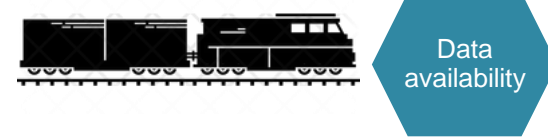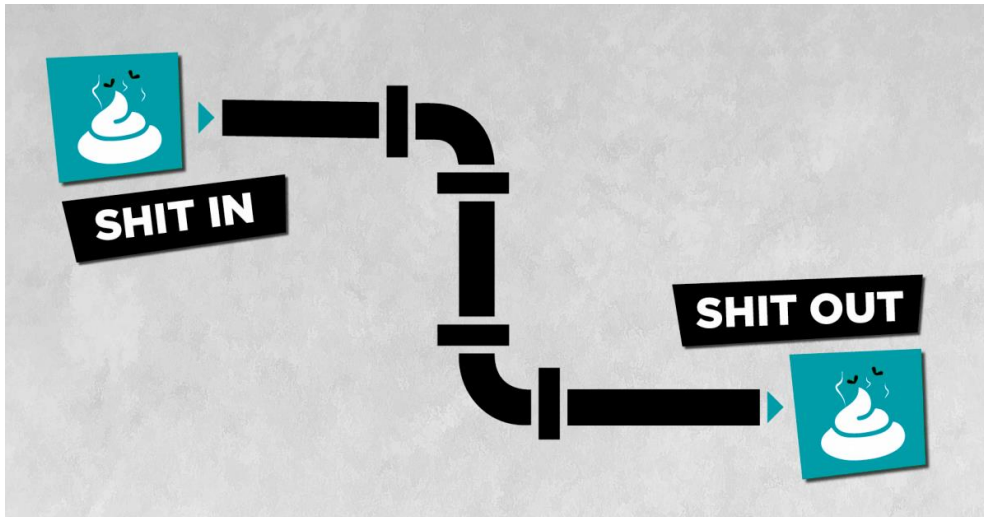
Data quality

- In order to realize all the benefits, we need to have qualitative data to be able to automate operations.

- The level of quality expected is especially high for the daily operations but can be lower for high level reporting needs.

- The actual level of quality is highly dependent on the type of input : manual input, via sensoring, …

- The focus on quality should be shared between the different data providers & consumers in order to continuously work on it.

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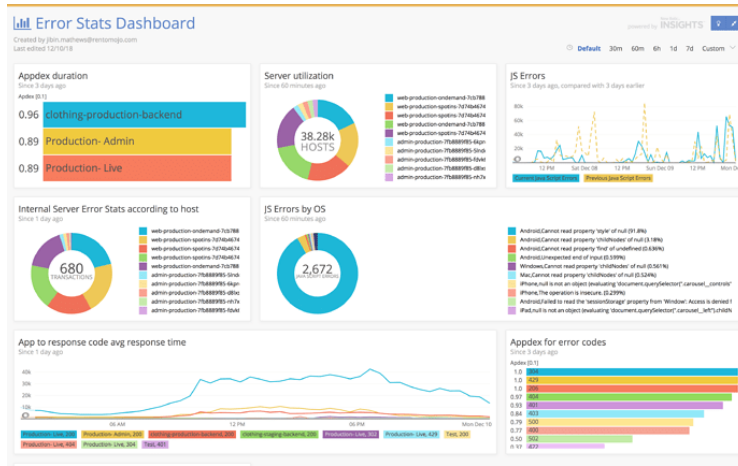
Data quality

- The different rail platforms are currently monitoring various KPIs regarding the data quality.

- The quality today is however not sufficient to fully automate our processes based on them. This is mainly due to the manual input of data

- The level of quality required is today not aligned between the different platforms.

- More qualitative sources such as GPS sensors on locomotives, wagons and rail infrastructure sensors, are being incorporated to fix the quality issues.

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Data standardization

Specify what data to be exchanged

- The Technical Specification for Interoperability on "Telematics Applications for Freight" (TAF TSI) drafted by ERA prescribes protocols for the data exchange of:
  - Path Request
  - Train Running Forecast
  - Service Disruption Information
  - Shipment Estimated Time of Interchange / Arrival

- TAF TSI prescribes furthermore databases which must be implemented by European RUs, IMs or Freight Customers:
  - Reference Files (such as location ID, company ID etc.).
  - Rolling Stock Reference Databases
  - Wagon and Intermodal Unit Operational Database
  - Trip plan for wagon / Intermodal unit
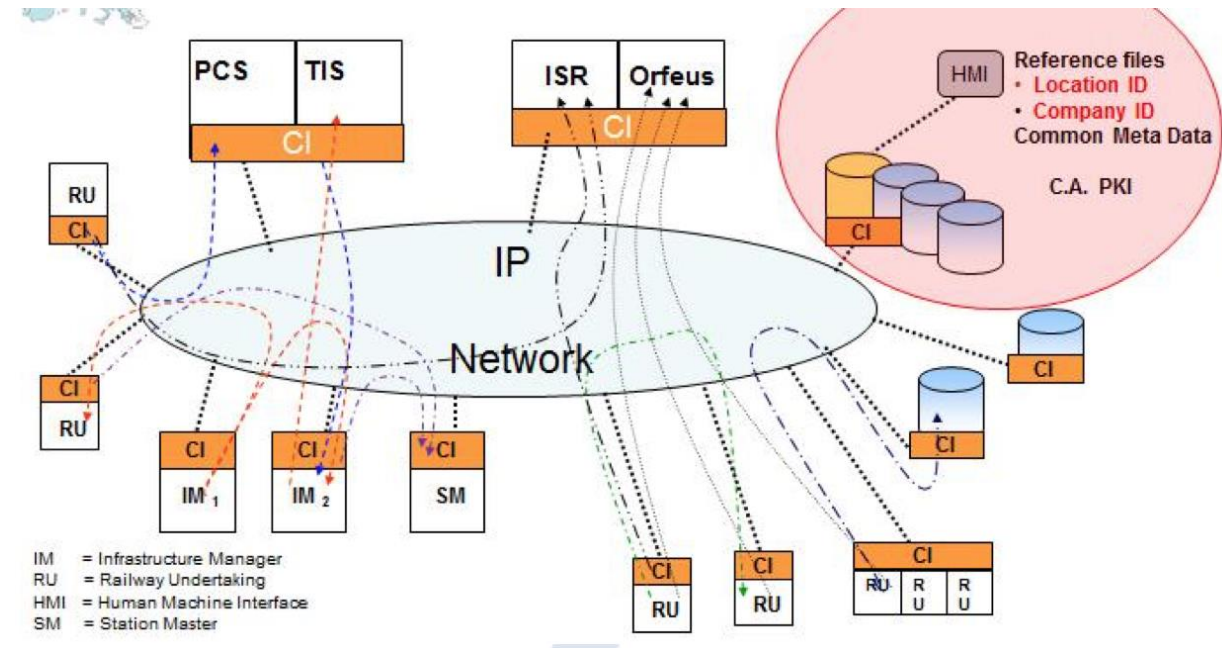
But currently no reinforcement & a need for future proof revision

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Data interfaces

Point-to-Point

Hub-and-Spoke

Hub
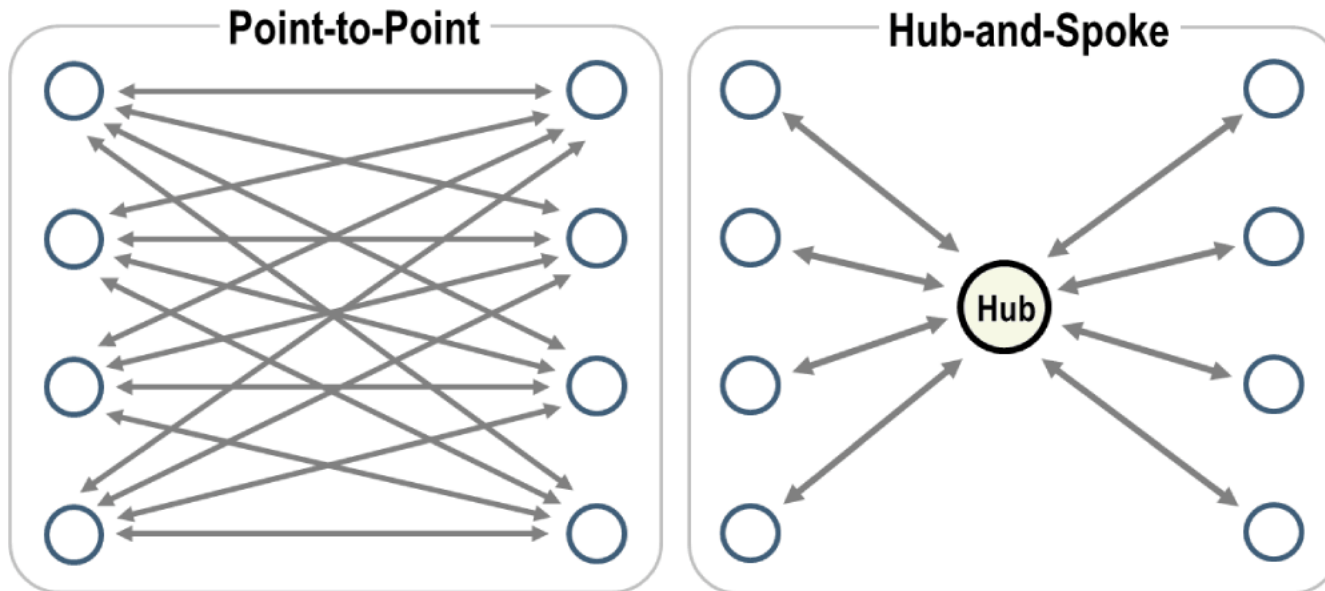
- Most of rail interfaces are done via Hub and Spoke system for the operational part between RUs.

- The link with customers, terminals and infrastructure managers has historically always be more point to point.

- We now see trends towards a more Hub and spoke system via different overarching 'neutral' platforms.

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Data domain model

- We today have different pieces of the data puzzle: reference data about our assets, operational data for running trains, ... covered by different data sharing platforms

- In order to fully achieve our objectives, it's important to be able to have the aggregate view of the Rail domain

- It's therefore crucial that standardization across data platforms is realized and potential gaps are filled.

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Data governance

- In a data sharing context, the integrity and security of the data are of prime importance.

- Uploading operational data on a shared platform should come with a guarantee that it is only accessible to authorized people and for a well defined purpose.

- This governance should be supported by the data platforms along with the data providers themselves.

- This is the key to build trust around data

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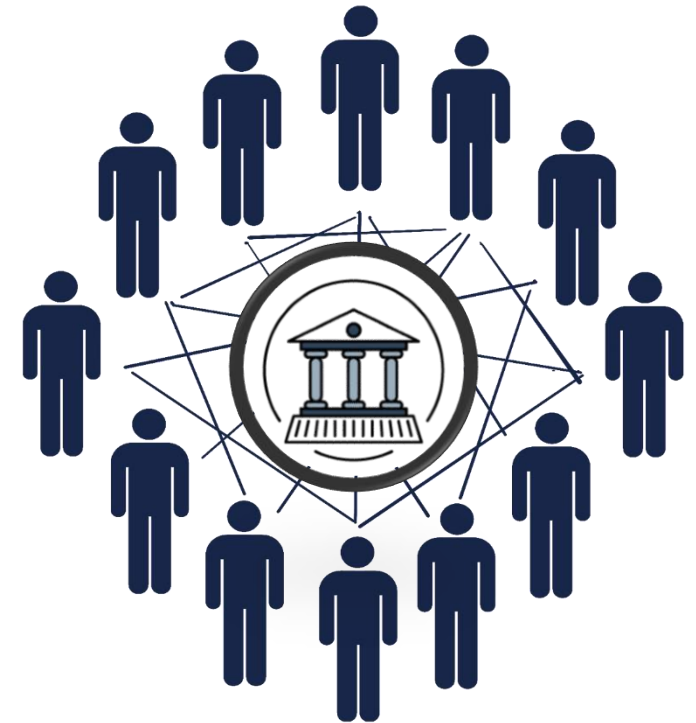
Conclusion

Are where there yet?

- We are today putting a lot of energy on data availability for the smaller RU's in order to be able to give qualitative E2E service towards our customers

- It's a real challenge to align and work together on improving the data quality in order to enhance cross-companies processes.

- Steps are being taken about standardization but deployment is slow and not spread across the complete industry

- We still have a big amount of work to make all this data exchange multimodal

- As a sector we have to overcome our anxiety about data sharing because it will enable us to bake a much bigger pie to share with one another than the one we are currently fighting for

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