



Final Report Subgroup Digitalization 10/2015 – 11/2016



Subgroup Digitalization



Agenda

1. Overview Subgroup Digitalization
2. Notice of position paper of Disruption
3. Decision on future priorities of Subgroup
4. Decision on implementing an „e-catalog“ for projects and tools

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Overview Subgroup Digitalization

10/2015 – 11/2016

Subgroup Digitalization

Participants



Meetings

- **6 Okt 2015** – 1st PRIME Subgroup Digitalization Meeting
- **12 Jan 2016** – 2nd PRIME Subgroup Digitalization Meeting
- **26 April 2016** – 3rd PRIME Subgroup Digitalization Meeting
- **19.09.2016** – 4th PRIME Subgroup Digitalization Meeting with Innотrans Tour

Workpackages

Teleconference:

- **WP 1 „Disruption“**
 - 07.04.2016
 - 19.05.2016
 - 07.09.2016
- **WP 1 & WP 2**
 - 10.10.2016
 - 24.10.2016
- **WP 2 „Enablers“**
 - 08.04.2016
 - 18.05.2016
 - 08.07.2016
 - 06.09.2016

Main activities

- Common position on disruption
- Support of CER – Digitalization Fair
- Digitalization tour at Innотrans
- Preparation of proposals for decision taking of PRIME Plenary 11/2016

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PRIME Plenary takes notice of the position paper „Disruptive impact of digitalization on Rail Infrastructure Managers“



Disruptive impact of digitalization on Rail Infrastructure Managers

Two major disruptive developments regarding digitalization

1- disruptors inside the rail sector. Digitalization of all major processes, from traffic, management, asset management, big data, censoring to automatic trains. This means work will digitize and part of our current operations will become absolute.

2- disruptive developments outside the rail sector. Automatic cars, automatic freight convoys, concepts like hyper loop. These will intervene with our operations. Its not clear if they will be an alternative for rail. Therefor we need to fully develop the rail sector. Otherwise we'll make ourselves absolute.

What does this mean for the infrastructure managers, what can we do **about** it? Or better, what can we do **WITH** it?

1- disruptors inside the rail sector.

priority

We are equipped to handle these. In our companies we need to support Initiatives regarding these issues

Stimulate (oa. Via Prime) of pilots and demonstration projects

2- disruptive development outside the rail sector. Automatic cars, concepts like hyper loop. These will go ahead without us, we need to be attached. Bring the outside world in our organizations oa. Via start ups.

follow

- Disruption describes an innovation which **replaces** an existing **technology, product** or **service** completely or to a certain extent.
In business, disruption always has a strong impact on the existing business model.
The impact of time is immediate. Disruption is at once **destructive and creative**.
(Cf. Clayton Christensen)

- Disruption affect mainly directly and indirectly IMs. Anew innovation can change the way track maintenance is done. A new transport system can change the sector, so also rail.
- Understanding the real and changing needs of customers (passengers, freight) is crucial
- Digitalization is not always disruptive, it can be just doing same things better/cheaper/quicker/safer etc.
- Need to focus on what we can influence
- External sensing , big data, automatic traffic management and ATO are great opportunities
- Railway sector should be open for the use of disruptive or new technologies because other transport modes can react quicker
- We should address it also for personals sake

- RFI points out providing value-added services to reduce the risk of newcomers and competitors
- ProRail highlights the role of EU: to accommodate that disruptions are being used in the sector, f.e. promote autonomous freight convois
- IP mentions that implementing a disruptive innovation in railway environment may also become a long process and some of its timeliness may be lost

B.1 IMs Overview / big picture trends/areas (I)



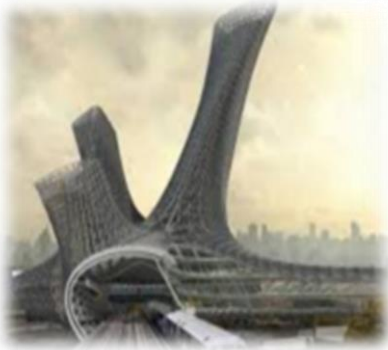
By COMPETITOR side

- Autonomy-cars
- Commercial drones for package sending
- New airplanes or airships
- Shared-cars
- Autonomous freight convois



By IMs /MANUFACTURERS sides

- New railway technologies (Hyperloop , etc.)
- Ultra-high-speed trains (> 1.000 kmph)
- Autonomous trains / more sensitization and ecological
- Full Technology integration into train (wifi connection)
- Future stations (high platforms , electrical maps, passive safety)



By CUSTOMER side

- End-to-end trip (Railway/plane/taxi/station info. , hotel reservation, etc.)
- Safety, punctuality and flexibility by digital apps tools
- Last mille solutions (single-person vehicles) to transport between station – destination an return.
- Lower price with more Agility (personal digital campaign)
- Lower environmental impact - ecology trains.
- New services (intermodal shops, auxiliar services like package delivery , etc.)
- Join venture with share cars companys
- Internet of thinks tecnology

By *COMPETITOR* side

▪ **Commercial drones for package sending**

His ability as freight vehicles is becoming harder, even though their viability is below the wishes of the **manufacturers who insist that the technology is ready** .

However, the giant online sales Amazon has the approval to test in the United States a small fleet of drones that principal and eventually will be used for **fast delivery of packages**.

This is a **first step to try to see the future of this invention commercially**.



The news **CNN channel** benefited from a similar license to test flights of drones **in order to make media coverage**. Apart from its military use, private use of these small pilotless aircraft is booming but there are reservations in terms of safety and possible violations of privacy

Drones solutions will be use to make railway more safety and security.

By *COMPETITOR* side

▪ **New airplanes or airships**

Hybrid Air Vehicle has listed its first aircraft **takes advantage and uses the latest technologies in airships** .

They hope to build between 500 and 1000 appliances to be an efficient and environmentally **friendly commercial aircraft current alternative**.

One of the great advantages of Airlander is that thanks to its design **can land on any surface** such as ice, sand or water (using a type hovercraft adaptation).

Thanks to this feature could be used to deliver humanitarian aid to areas affected by major disasters such as earthquakes or hurricanes. Airlander settings allow **payload capacity of 20, 50 and 200 Tm** .

One of the great strengths of Airlander is sustainability.



Many commercial uses: transport, tourism and surveillance Airlander was designed with two different configurations , one that allows you to stay five days in the air crew and used for communication tasks and even military or police surveillance (already built version and tested by the US army) . The second is to **transport heavy goods transport wherever conventional does not come easily** .

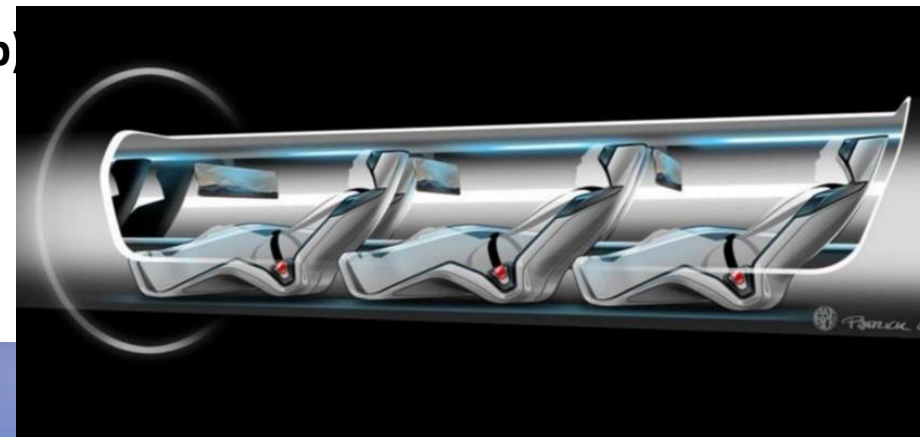
By IMs /MANUFACTURERS sides

▪ New railway technologies (Hyperloop)

Hyperloop a land transport system based on capsule moved , **that allows to circulate at speeds approaching 1,200 kilometers per hour** breaking the sound barrier compressed air.

It sounds like science fiction, but **it is possible with current technology**. He introduced two years ago, although it will not be until next when construction begins. It will be in Quay Valley, an area that will connect San Francisco and Los Angeles.

It is a **train without rails**. This transport " fly " through a propulsion system, solar energy practiced with **powerful and long lasting rechargeable batteries** . Each capsule (wagon) 28 space travelers will distributed by areas (business, economy). Despite the questions raised , the company **promises that the travel experience** will be " comfortable " and the pressure inside ' will be reduced . "



Security system is safer than rail, which is regulated and supervised by humans. The capsule has provided sufficient **security measures** in case of emergency . **"Promises cost about \$ 16,000 million, compared with 68,000 million requiring a railway line.**

The main argument for possible Hyperloop is not speed , is the business model. At the moment there is no passenger rail system in the world to be profitable without government subsidies .

By IMs /MANUFACTURERS sides

- **Autonomous trains / more sensitization and ecological**

Comes a new generation of environmentally friendly **hydrogen-powered trains**. They are based on technology HydrailSe Hydrail based on technology currently researched and worked in Japan , China, the United States and the European Union.

The expected technological solution for the **development of green transport** could come from the hand of a new generation of trains which uses hydrogen for propulsion .

One of the **main advantages of this option is that it requires little new infrastructure**. This alternative could become a powerful means of reducing pollutant emissions from public transport .



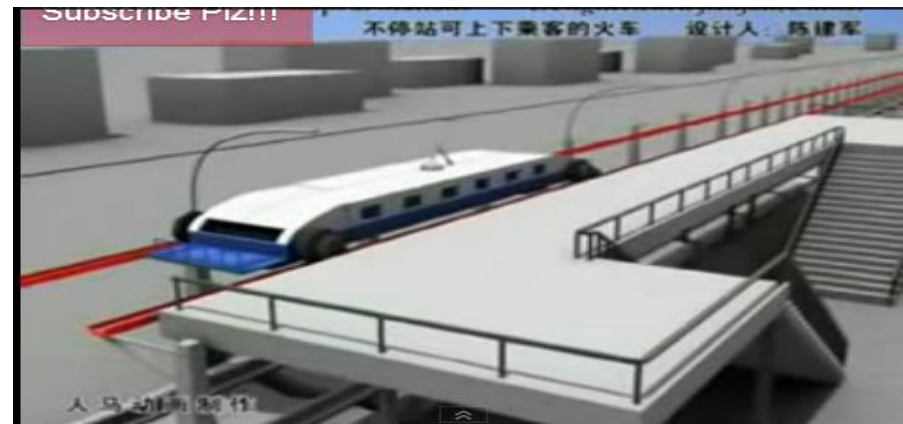
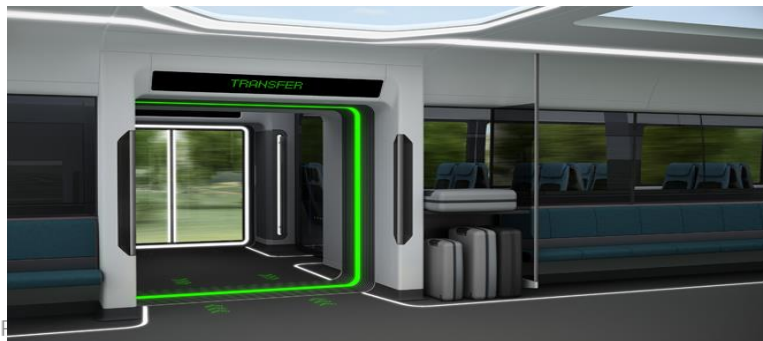
Efforts to obtain **efficient eco-transport** and reduce the environmental impact of urban transport systems could be strongly enhanced, a new technology of hydrogen-powered trains is currently being studied in different parts of the world . One of the pluses is that it requires little specific infrastructure for its implementation .

According to the specializing railway-technology.com, a new generation of hydrogen-powered trains.

By IMs /MANUFACTURERS sides

Future stations (high platforms , electrical maps, passive safety)

The concept of Moving Platforms (“mobile platforms “) **eliminates stopping at stations** in one fell swoop to replace the fixed platforms for **system interconnection** of different trains in motion , which allows passengers to directly **switch from a shuttle commuter train** to a high-speed train long distance ; and vice versa.



Design a train need **not stop at any station** . It is a new concept of non-stop train , which would save time in transfers.

Chinese specialists have devised a system for **trains need not stop at various stations to pick up their passengers**. The advancement is a mobile platform which is directly coupled to convoy when it passes through the station without requiring the stop train speed.

This system greatly **decrease the durations of travel** , especially on longer journeys. The various innovations developed in China consolidates to China as a world leader in the field of high-speed rail systems .

By IMs /MANUFACTURERS sides

▪ Last mille solutions (single-person vehicles)

The Single-persona vehicles concept has been designed as a complete **personal mobility solution** for those who need to walk between shorts distance.

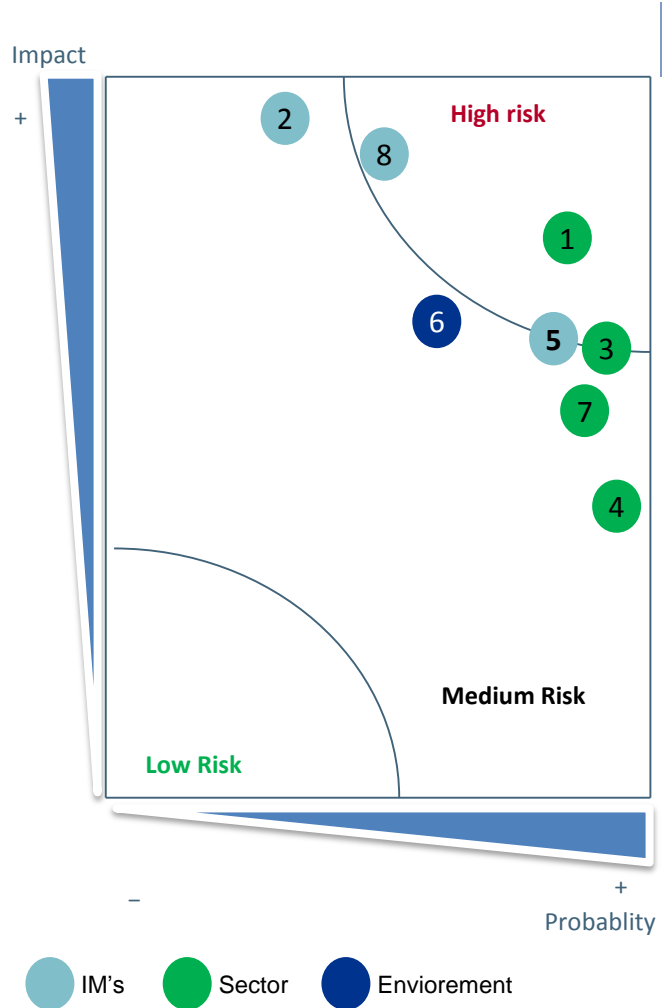
By using innovative materials and different manufacturing processes, this concept provides a **positive experience to the users, keeping them mobile and independent.**

The extraordinary fold down design of the product enables user to store it even in the boot of a car and the adjustable height feature makes it suitable for all range of people.

This solution could **works together with train transport**, and the vehicle can be **warehousing in the stations and return automatically** when trip finish to **reuse by other user.**



B.3 Assessment of risk and impact of these disruptive trends



Description	
	Digitalization of core processes of Ims
	Autonomy-cars
	New railway technologies (Hyperloop)
	Commercial drones for package sending
	Last mille solutions (single-person vehicles)
	Future stations (high platforms , electrical maps, passive safety)
	Full equation view (tren/avión/taxi/estación, hotel, etc.)
	Autonomous freight convois
	New airplanes or airships
	Autonomous trains / more sensitization and ecological

Strategies for IMs

Some useful concepts

[Clayton Christensen](#) :

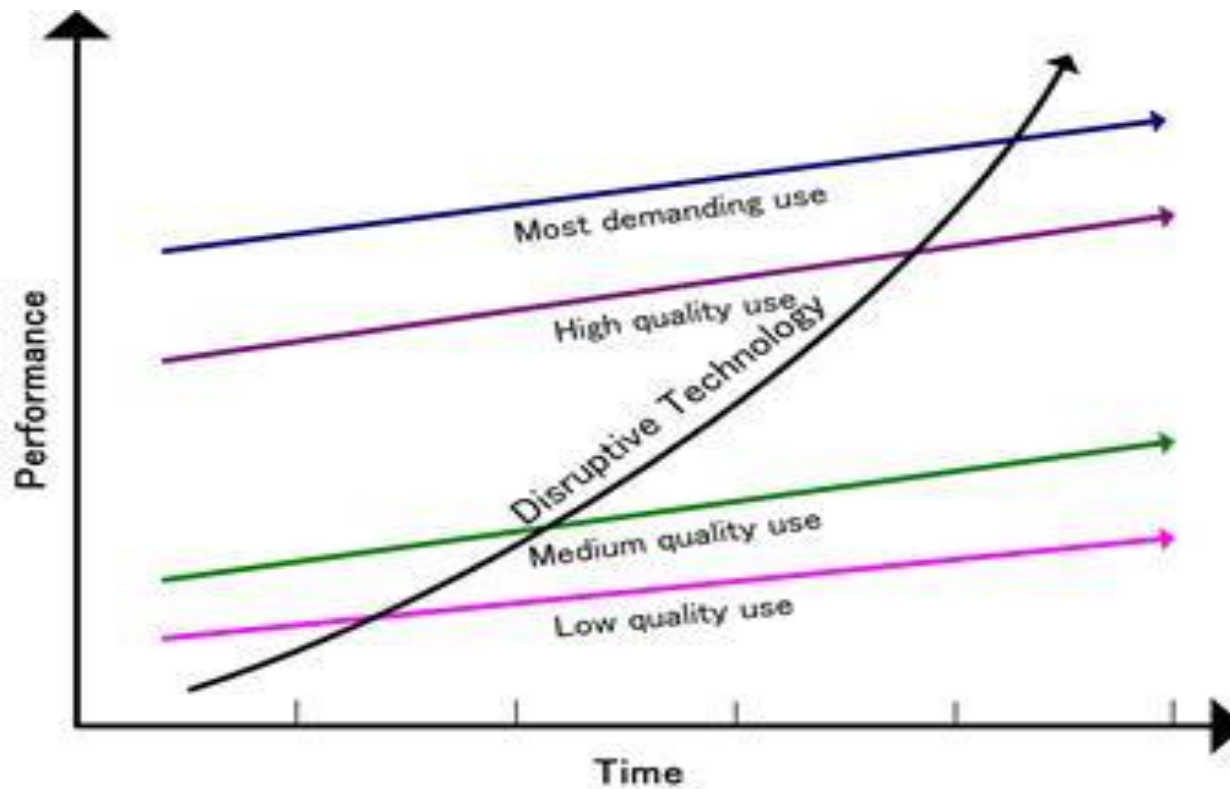
"The technological changes that damage established companies are usually not radically new or difficult from a technological point of view. They do, however, have two important characteristics: First, they typically present a different package of performance attributes—ones that, at least at the outset, are not valued by existing customers. Second, the performance attributes that existing customers do value improve at such a rapid rate that the new technology can later invade those established markets"

[Joseph Bower](#)

"When the technology that has the potential for revolutionizing an industry emerges, established companies typically see it as unattractive: it's not something their mainstream customers want, and its projected profit margins aren't sufficient to cover big-company cost structure. As a result, the new technology tends to get ignored in favor of what's currently popular with the best customers. But then another company steps in to bring the innovation to a new market. Once the disruptive technology becomes established there, smaller-scale innovation rapidly raise the technology's performance on attributes that mainstream customers' value."

Strategies for IMs

General Disruptive Technology Trend



Strategies for IMs

Some IMs strategic perspectives

- To make optimal use of existing assets and digital possibilities .
- To increase the connectivity, better connected inter-modal freight nodes
- Autonomous driving or automatic pilot ATO
- Sensoring via internet of things, increase reliability en decrease cost of assetmanagement
- Speeding up European development of interconnected systems as ERTMS 3 of higher
- Use of commercial of the shelf technologies in the sector to reduce costs More flexibility in timetabling planning
- Business re-engineering of freight services
- To reduce the operating cost improving safety,
- from enhance traffic management to automatic traffic management

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Decision on priorities of PRIME Subgroup Digitalization

Subgroup Digitalization will work on a trial installation of the future infrastructure manager and will present a test facility in 2017

PRIME Plenary decides to cooperate and focus the work of PRIME Subgroup Digitalization on the following already existing projects and tools:

- Building Information Model (BIM)
- Simulation & Optimization (ETA, Timetabling, Temporary Capacity Restrictions, ATO)
- Data Analytics
- Big data sensing/inter customer experience/modern technology to improve customer experience in stations

PRIME Plenary decides to ask PRIME subgroup Digitalization to check for which subjects the support of EU KOM is needed and address the results to EU KOM

PRIME Subgroup recommends to PRIME Plenary members to work with startups; successful examples will be shown in 2017

Opportunities for European Collaboration

Subject : BIM/PLM (Building Information Modeling)

Business Value : 4 /4

Feasibility : 2 /4

Business Domains **	
Eng.	1
Maint.	2
Access	2
Capa.	3
Traffic	3
Finance	2
XX	
XX	

Short Description (Business need, Solution, Collaboration)

- Organize and provide solutions for collaborative processes and sharing of information, internal and with partners, for continuity and consistency all along the life cycle of Infrastructure (from functional objects to physical assets)
- Transformation and change in organization is under responsibility of each IM / partner.
- Such project implies the design of a collaborative framework, based on standards, shared catalogs and services,
- Defining those standards and building this framework should be done at sector level, involving IMs and manufacturers Europe wide, with the right governance to ensure sustainability of this powerful leverage for business performance.

Business Stakes

- Keep leadership in Europe
- Benefit experience, share investment
- Speed up deployment, leverage standardization

Opportunities

- Strong experience within European IMs and manufacturers
- Benefit of Aerospace experience (Airbus), taking part to EuroDigiRail project and platform

Key Success Factors

Work together at early stage, to build alignment in vision and governance

Main Threats

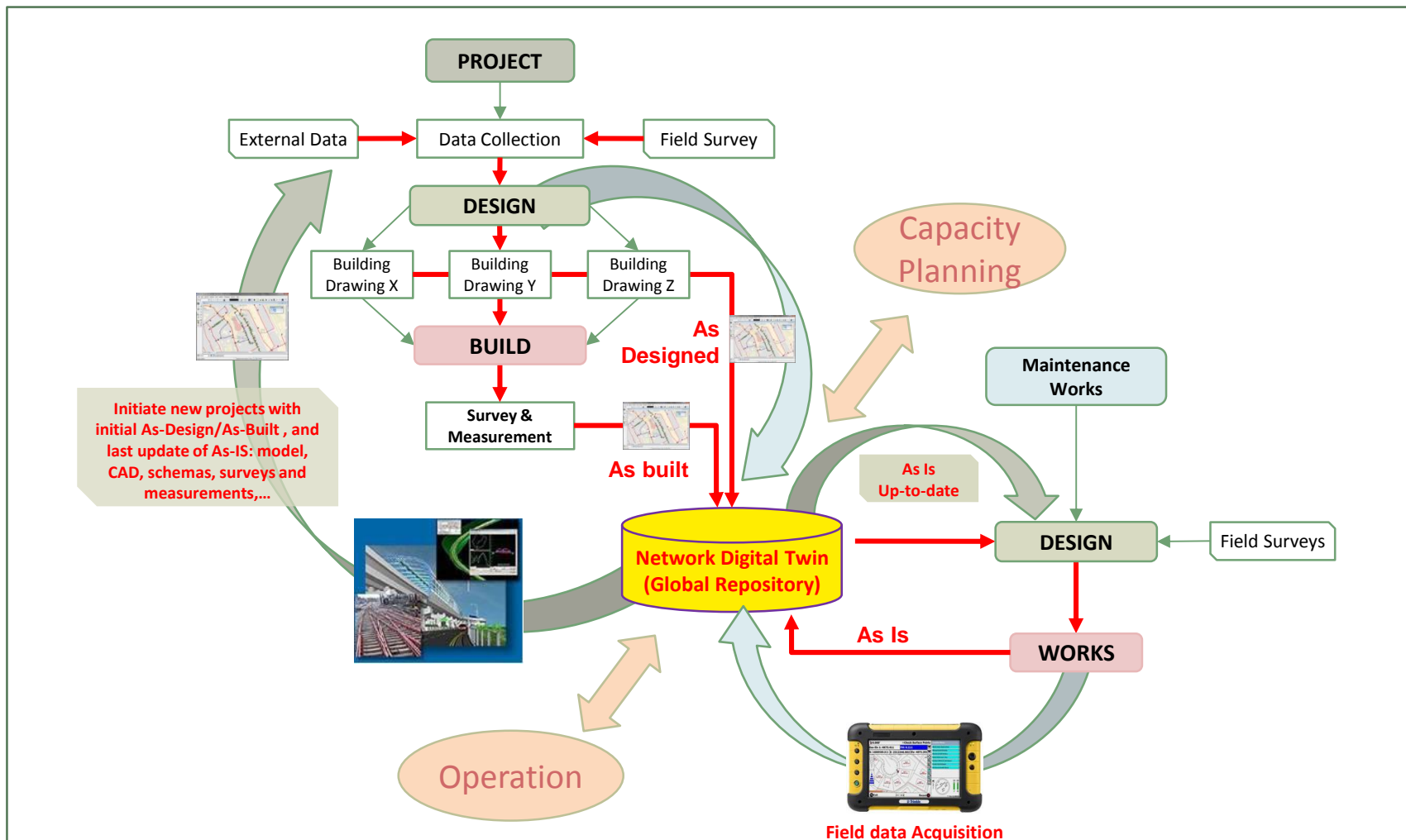
- Leadership of BIM by software providers more than by IMs
- Loss of knowhow, and therefore leadership in Life Cycle Management, for IMs if not leading the digital model".
- China running alone and quick on IFC4-IFC Rail...

* Ranking Business Value (1–low to 4-High) Feasibility (1-Complex to 4-Simple)

** Business Domain involvement: 1 (Lead) 2 (Contribute) 3(Concerned) 0(not involved)

BIM (Building Information Modeling)

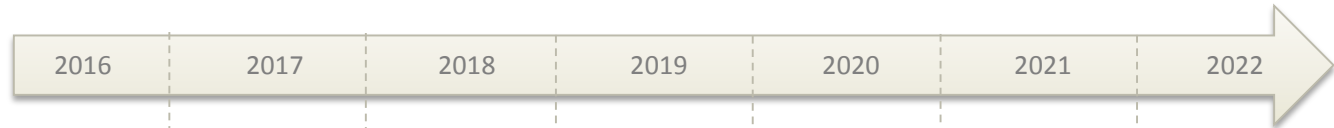
Organize and provide solutions for collaborative processes and sharing of information, internal and with partners, for continuity and consistency all along the life cycle of Infrastructure and its operation (from functional objects to physical assets)



BIM / PLM (Building Information modeling /Product Life Cycle Mngt)

BIM / PLM

Organize and provide solutions for collaborative processes and sharing of information, internal and with partners, for continuity and consistency all along the life cycle of Infrastructure and its operation (from functional objects to physical assets)



Strategic line

- Build standards for processes, data exchanges, e-catalogs,...
- Build European Platform
- Ensure autonomy and decoupling....

Benefits

- Efficiency and Quality in project design, planning and operation
- Optimize Strengthen European manufacturers.

Think Large - Act Small

Collaboration should speed up response to businesses, and not induce slowdown on national projects

Road Map



Opportunities for European Collaboration

Subject : Simulation/Optimization for Train Operation

Business Value : 4 / 4
Feasibility : 2 / 4

Business Domains **	
Eng.	1
Maint.	0
Access	3
Capa.	2
Traffic	2
Finance	0
XX	
XX	

Short Description (Business need, Solution, Collaboration)

- Provide solutions for simulation of operational behavior of railways system and subsystems , i.e. infrastructure and mobiles. To be used consistently by all stakeholders, at each level of IM organization and industrial partners, from Network Design to Train Operation.
- Design calculation engine for elementary components, to be combined for simulation of complex sub-systems, and global system.
- Ambition is wide, the success of such project goes through a strong decoupling of multiple sub-projects, ensured to operate consistently as designed on a common framework.
- It implies the design of a shared skeleton and standard interfaces, i.e. a model to share common concepts between multiple sub-projects
- Defining those standards and building this framework should be done at sector level, involving IMs and manufacturers Europe wide, with the right governance to ensure sustainability of this powerful leverage for business performance.

Business Stakes

- Provide a major leverage of acceptance in disruption
- Build a technological advantage for European Industry

Opportunities

- A robust framework with RailTopoModel
- Strong experience within European IMs and manufacturers

Key Success Factors

A few IMs to share, build and communicate the vision

Main Threats

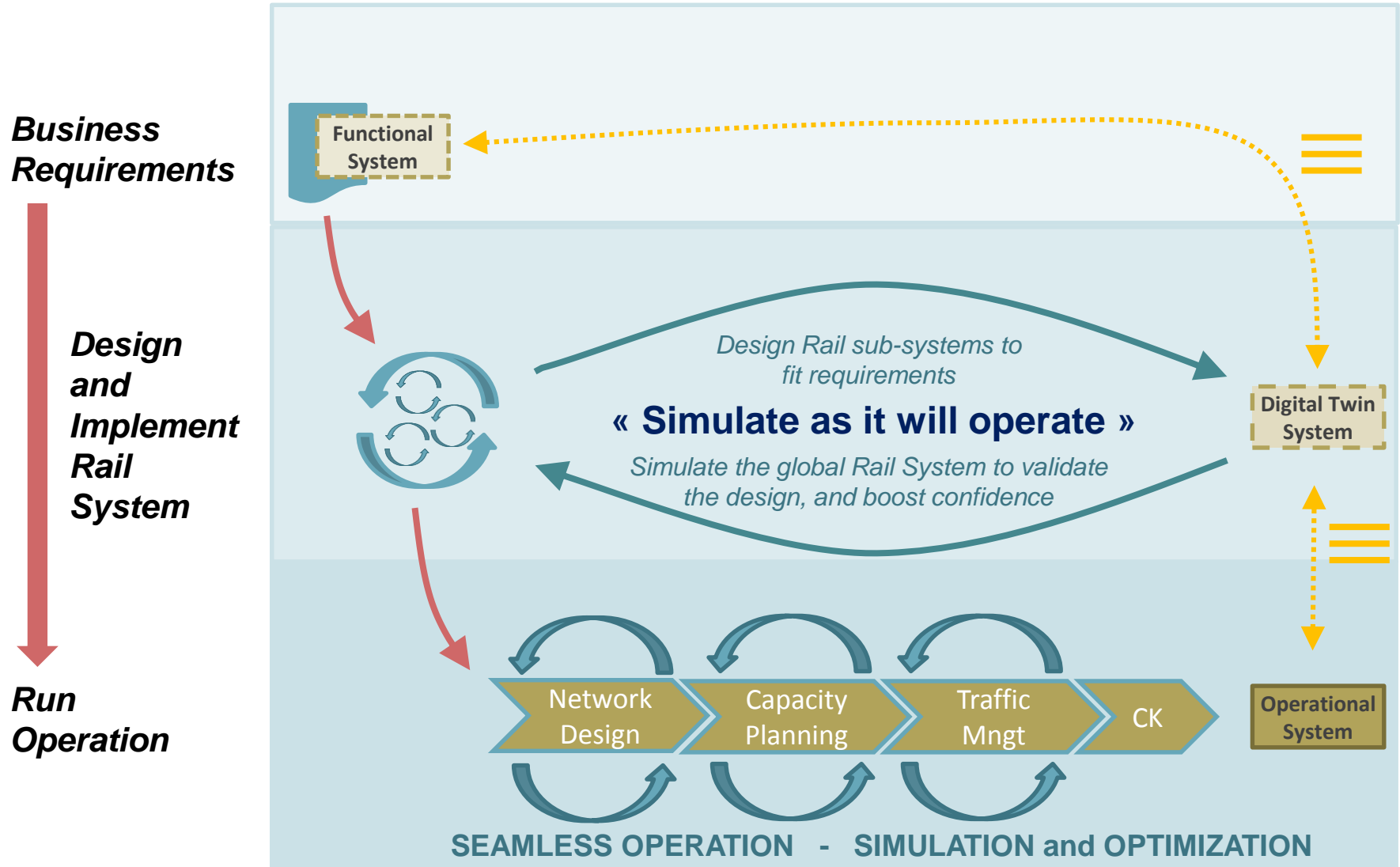
Each IM, each department, each manufacturer... keep working on his own proprietary solutions for ... short term benefits.

* Ranking Business Value (1–low to 4-High) Feasibility (1-Complex to 4-Simple)

** Business Domain involvement: 1 (Lead) 2 (Contribute) 3(Concerned) 0(not involved)

Simulation and Optimization: from Design to Operation

Provide solutions for simulation of operational behavior of railways system and subsystems , i.e. infrastructure and mobiles. To be used consistently by all stakeholders, at each level of IM organization and industrial partners, from Network Design to Train Operation.



SIMULATION



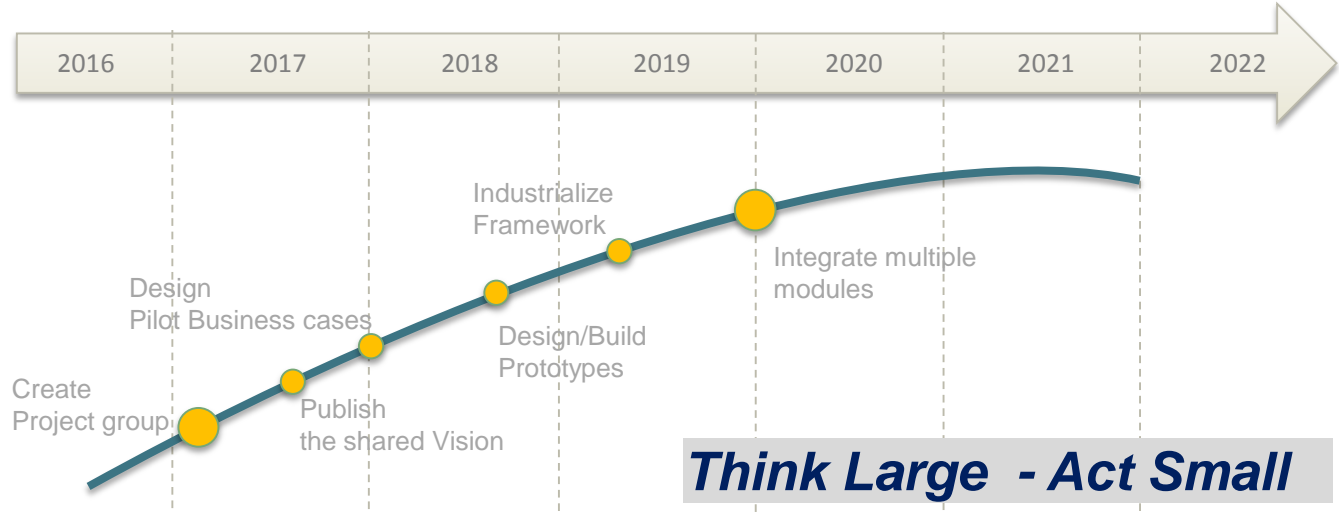
Provide solutions for simulation of operation, for each subsystems and global railways system. To be used consistently at any operational level, from Network Design to Train Operation.

Strategic line

- Define a standard model for business and developers
- Ensure acceptance at national level
- Organize modularity and interoperability

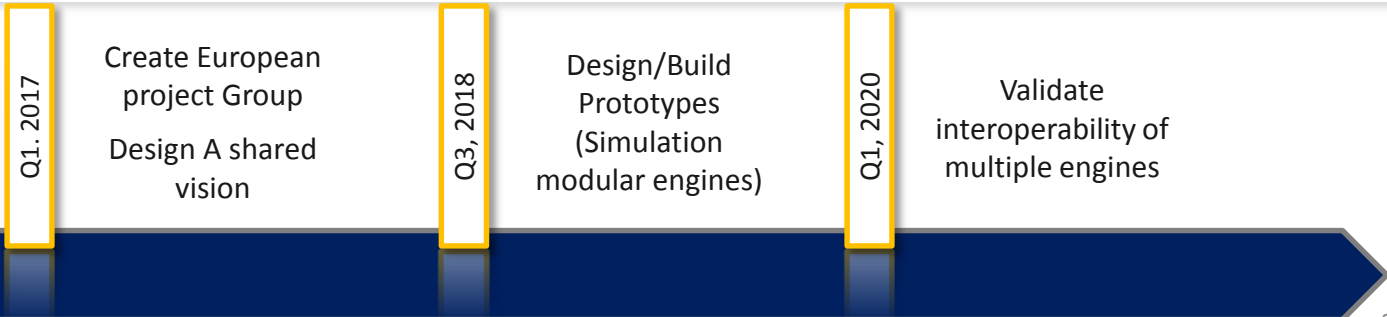
Benefits

- Powerful scalable solutions
- Fit each need: local, global.
- Foster acceptance of disruptive scenarios



Organize modularity, scalability, decoupling,... for acceptance by all bodies (IMs, SW vendors,...)

Road Map



Opportunities for European Collaboration

Subject 3 : Data Analytics (examining data to draw conclusions, allows companies and organization to make better business decisions)

Business Value : 4 /4
Feasibility : 2 /4

Business Domains **	
Eng.	3
Maint.	4
Access	2
Capa.	2
Traffic	2
Finance	3

Short Description (Business need, Solution, Collaboration)

- Analyze technical data from all IM's to define predictive and mathematics rules, methodologies and market strategies to use conclusions for optimizing works (make railway more efficient). Re-design sensors, include non-structure-information, etc. to generate data will be use in this analysis. Priority actions:
 - DAM (DIGITAL ASSETS MANAGEMENT) – ZERO STOCK:** Define and catalog railway asset, unify technology to re-use technical solutions and make predictive formulas to prevent and optimize maintenance by sharing knowledge's and real experience. Common interface and sensor-languages.
 - CMP (CENTRAL MARKET PURCHASE):** analyze demand-planning, offers, capabilities, integration, lesson learns to maximize the purchase (rappel, conditions, logistics, ...). Define European Service Level Agreement.
 - DAFP (DEMAND ANALISYS FOR PASSANGERS AND FREIGHT):** Business Intelligence Inter-european predictive analysis with non-structure external data (weather, social media, etc.).

Business Stakes

- Increase sector knowledge's.
- Best practices and sharing investment
- Reduce cost. Common-standard technology

Opportunities

- Technology are available. Real benefits with use of Business analytics tools (BA). Design technology for real problems
- Increase efficiency, save money to re-invest. Re-use Best practices.

Key Success Factors

- Sponsor by IM technical , Purchase departments
- Share results (success stories and failures cases)

Main Threats

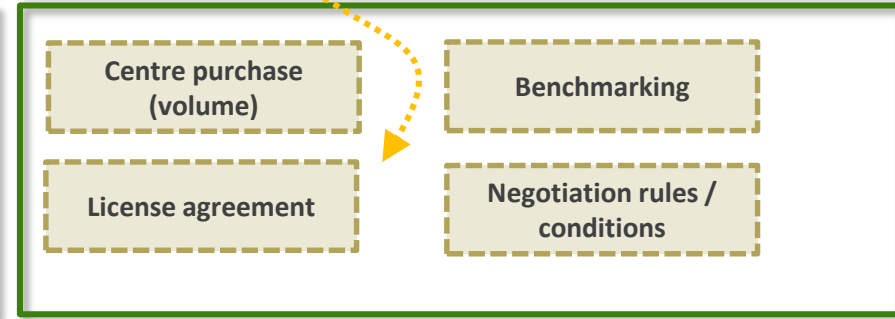
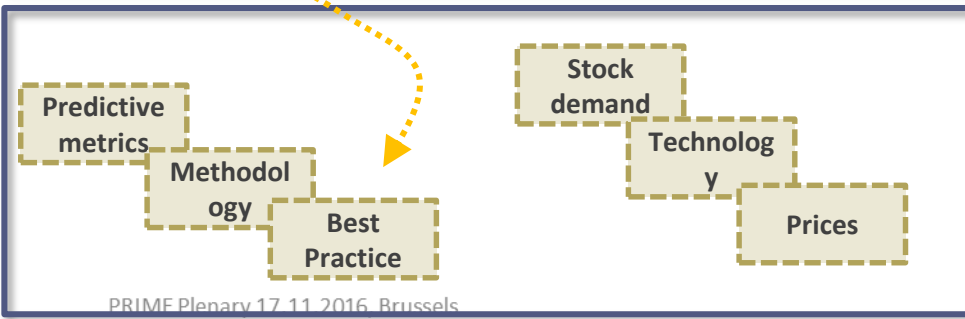
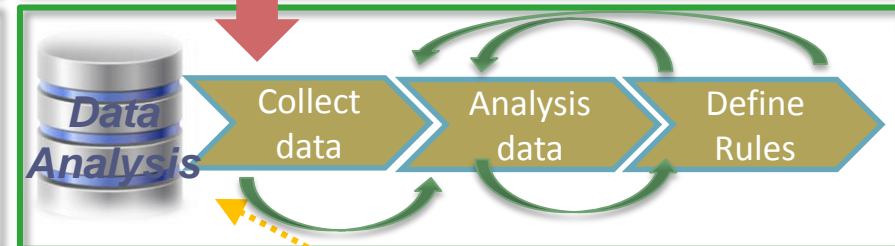
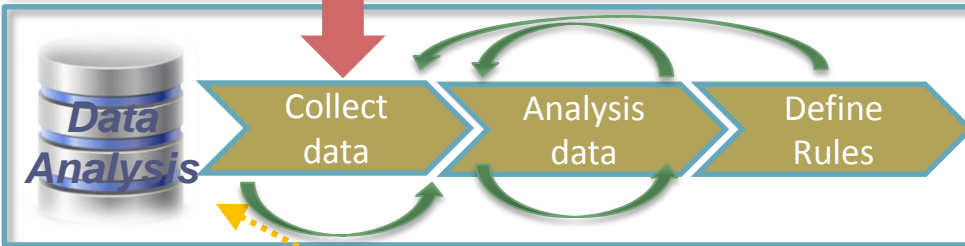
- Each company is focus in his own problems.
- Different sensors, with heterogeneous languages and protocols. Multiple solutions in European Railway
- Private knowledge's

* Ranking Business Value (1–low to 4-High) Feasibility (1-Complex to 4-Simple)

** Business Domain involvement: 1 (Lead) 2 (Contribute) 3(Concerned) 0(not involved)

Circle flowchart. Re-use data

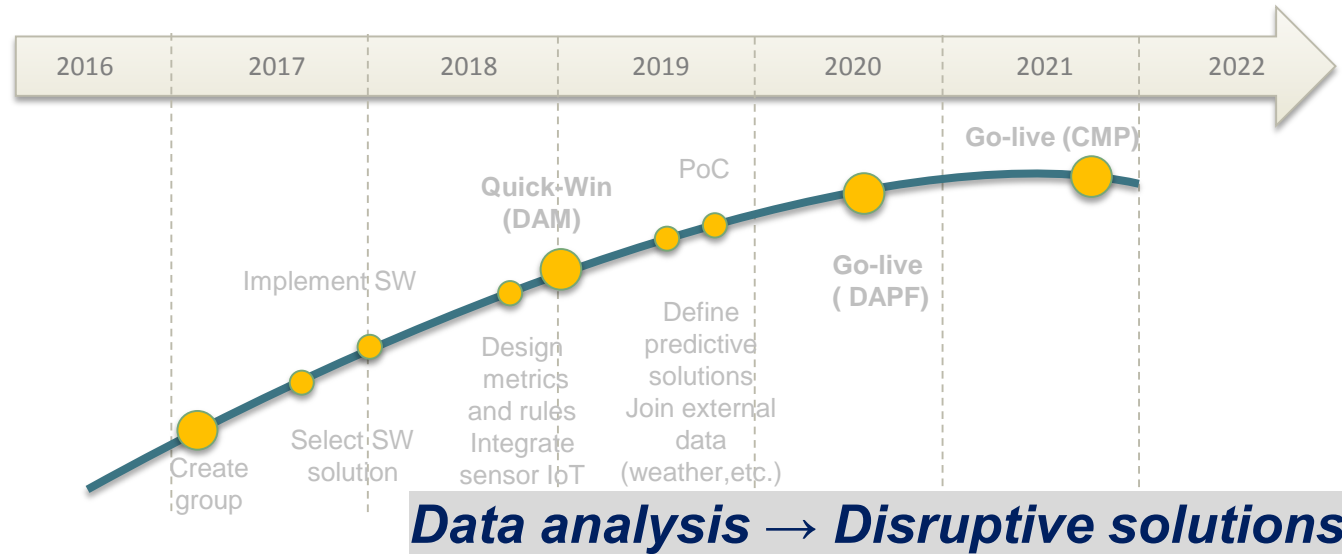
Provide conclusion derivate from data analysis to help organizations to make better decision and reduce cost. Move warehouse to manufacturers and demand only the unit that you need, where you need, including logistic route, time-to-market and more information (ZERO warehouse in IM's).



Technology to improve “Customer experience“



Data Analytics



Strategic line

- Highest IM knowledge (DAM)
- Predictive rules (DAM) to optimize maintenance
- ZERO Warehouse (DAM)
- Optimize cost (CMP)

Benefits

- Homogeneous sensorisation
- Negotiation power with manufactures
- Reduce cost

Analysis information gives new vision and help to optimize process to be more efficient

Road Map



Opportunities for European Collaboration

Subject 4 : Smart Station (Bigdata sensing/inter customer experience/modern technology to improve “Customer satisfaction”)

Business Value : 4 /4
Feasibility : 3 /4

Business Domains **	
Eng.	1
Maint.	2
Access	4
Capa.	2
Traffic	3
Finance	3

Short Description (Business need, Solution, Collaboration)

- Deploy ‘Smart station context’ focused in digital services for customers.
- Define and certify a IoT common-language to make more easy to re-use technical solution around European countries.
- Create common platforms to share information about IM’s (transit, timetable, ...) , apps (intermodal information), end-user preferences,
- Create cross-digital-security system to share relevant information on-time

Business Stakes

- Common IoT reduce time-to-market and make easy solution re-use
- Best user experience (IM work together in same way)

Opportunities

- Increase power negotiation with big technical companies (apple, Trivago, Urber, ...)
- Define European Commission legality environment
- Re-use technology / Solutions

Key Success Factors

- Sponsor (IM’s and European Commission)
- Collaborative model with external partners and operator

Main Threats

- IM priorities with different point of view
- Roadmap and quick-win benefits
- fast market changes vs IM roadmap

* Ranking Business Value (1–low to 4-High) Feasibility (1-Complex to 4-Simple)

** Business Domain involvement: 1 (Lead) 2 (Contribute) 3(Concerned) 0(not involved)

Smart-Station

Collaborate with users, customers and partners to identify what future come in, and design station around it. Makes user feel better and use more station services, increasing travel security.

Users and passengers info



City information



Digital Solution



Actual information

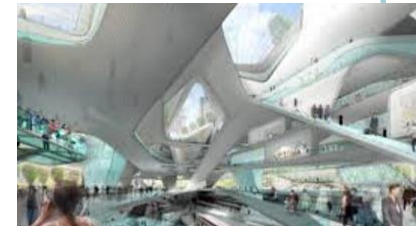
Next advertisement

Cognitive future

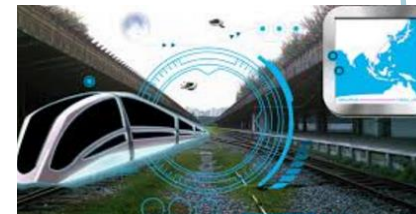
New apps



New stations



New communications



New stores



New services



Technology to improve “Customer experience“



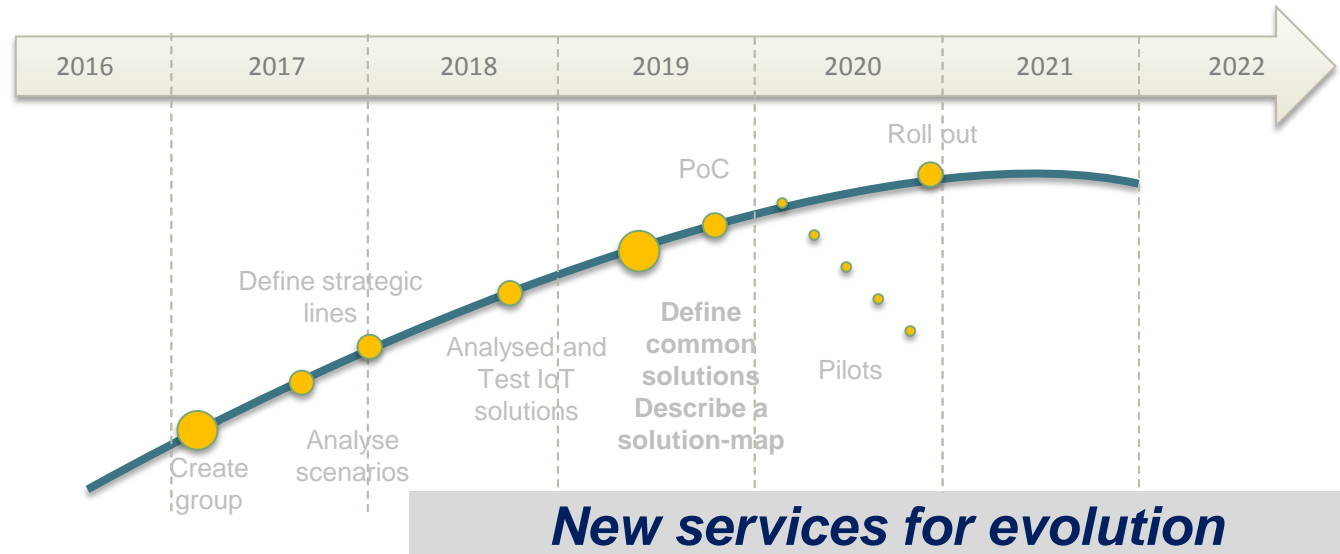
Big data sensing / inter customer experience/modern technology to improve customer experience in stations / infrastructure use

Strategic line

- Focus on customer
- Integrate user sensor (IoT)
- New digital services
- European Security frame

Benefits

- Increase customer satisfaction
- Integrate solutions
- Cognitive dialogue



Collaboration should speed up response to businesses, and not induce slowdown on national projects

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Decision on implementing an „e-catalog“ for projects and tools

PRIME Plenary decides to implement an “e-catalog” for already existing “projects/tools” as a platform for exchange and best practice under the following conditions*:

- Website hosted by RailNetEurope
- Hosted on a standard technical solution already existing at RNE
- Website governed by PRIME
- Without “RNE-Logo”
- Linked with PRIME
- For the time being only open for PRIME members**

* If there is no majority for the „RNE Solution“ at PRIME Plenary an „EU KOM“ solution will be further examined.

** If PRIME would like to have it completely or partly open it can be done without any technical problems.

e-Catalog of Digital Projects

Objectives

Considering the success of first Digital Fair, and our ambition to stimulate cross fertilization between Prime Stakeholders, WP2/WP3 project teams proposed to initiate a live e-Catalog where business needs could meet similar projects and/or experiences from other parties.

Structuring features

➤ Accessibility, user friendliness

A web application, wiki type, open to all in read mode (no Login/PW), easy to maintain by authorized bodies, easy to manage by governance team (access granting,..)

➤ Simplicity

- List view: list of projects and main relevant information, with filtering/sorting features for an efficient search
- Page mode: one page per project for detailed presentation

➤ Scalability

- The solution should ease future generic enrichments (e.g. add new field in the imposed template, create key words and searching feature,...)

e-Catalog: Functional specification

2 main views

- List: one line per project
- Project sheet: One page per project

Project Detailed Sheet			List of Projects		
Field Name	Description	Data Type	List	Filter	Sort
Project ID	Catalog reference	Internal counter (incremental)	x		
Project Owner	IM/RU/.. code	Choice on list of official EU codes (1)	x	x	x
Project Name	Short Project name	Open text (50 c)	x		
Project Description	Long Description	Open text (500 c)	x		
Related to	Link to main project	Project ID (link)			
Project Status	Life Cycle status	Choice on closed list of values (1)	x	x	x
Domain	Business Domain	Choice on closed list of values (1)	x	x	x
Criteria A	xxx	Choice on open list of values (2)	x	x	x
Criteria B	xxxx	Choice on open list values (2)	x	x	x
External References		Open text zone for additional description, including URLs			
Attached documents		Imbedded documents			
Comment		Open text	x		

(1) closed list of values: under control of business administrator → administration screens to be implemented

(2) criteria on open lists of values: open fields, usage to be defined by project group

e-Catalog: Proposed Solution

Proposal from the Subgroup Digitalization (provided by RNE)

➤ Accessibility, user friendliness

- E-Catalog is not limited to RNE members, URL can be defined.
- Including a read-only mode (no Login/PW),
- Easy to maintain and manage by authorized bodies, Layout is based in PRIME.

➤ Simplicity / Scalability

- List of projects and main relevant information (filtering/sorting features for an efficient search)
- One page per project for detailed presentation
- Future generic enrichments are possible (e.g. add new field in the imposed template, create key words and searching feature,...)

The screenshot shows the PRIME e-Catalog interface. At the top, there is a navigation bar with the PRIME logo, a search bar, and a 'Login' button. Below the navigation bar, the main content area is titled 'e-Catalog'. It features a filter bar with five dropdown menus labeled 'Project Owner', 'Project Status', 'Project Domain', 'Criteria A', and 'Criteria B', each with the placeholder text 'Choose some options'. An 'Apply' button is located to the right of these filters. Below the filter bar is a table with the following columns: PROJECT ID, PROJECT OWNER, PROJECT NAME, PROJECT DESCRIPTION, PROJECT STATUS, PROJECT DOMAIN, CRITERIA A, CRITERIA B, COMMENT, PRIORITY ORDER, and a 'view' link column. The table contains two rows of data.

PROJECT ID	PROJECT OWNER	PROJECT NAME	PROJECT DESCRIPTION	PROJECT STATUS	PROJECT DOMAIN	CRITERIA A	CRITERIA B	COMMENT	PRIORITY ORDER	view
6	IM	Business model for Infrastructure.	<p>Usages:</p> <p>Provides foundation for robust and scalable IT developments, ensuring capacity to support cross departement/company processes</p> <p>Family:</p> <p>RailTopoModel</p>					UIC IRS to be published April 2016 (UIC Conference April 19th, Paris)		view
5	RU	next steps	detailed project desc	Closed	General Matters	A1	B3	some comment		view

e-Catalog: assessed solutions

Scenario	Pro's	Con's	Comments	Next steps
EC EDM Solution	Ready to implement	Functionally poor, not user friendly Risk for rejection	Scalability ?	Check availability of a more advanced solution in EC IT Catalog
RNE Collaborative portal	Railway community Shared investments	PRIME independency (URL) ? Availability to non-members of RNE ?	Such solution is under development at RNE for other usages	Check functional coverage; Validate answers to Con's (Prime URL, specific template,...)
Market SaaS Solution (e.g. Google Drive, MS SharePoint,...)	Ready to implement Richness, scalability	Security and IP Policies (if US based)		Search for European based SaaS solution
One IM Prime member welcomes Prime on his collaborative portal solution (a specific website)	PRIME independent website	Temporary solution	No confidentiality issues as this Prime collaborative site is only for publishing to the Prime community	Identify potential provider <i>All</i>
??				