

A strategic study at Infrabel

FROM AUDIT TO LONG TERM PLANNING

Jan Cocquyt

Infrabel – Strategy & Enterprise Steering

UIC Asset Management Conference

April 2019



Agenda

1. The challenge

2. The audit mission

3. Looking back & Looking forward

The challenge for Belgium

	Length of lines (km)	Line km per million people	Modal split passengers (% train km)	Modal split freight (% ton km)	Utilisation Tr.Km/Km line
NL	3,058	180,1	10,9%	6,0%	48.053
BE	3,607	318,9	7,7%	11,6%	26.637
AT	4,917	565,8	11,4%	31,5%	31.261
UK	16,253	248,6	8,7%	8,4%	34.642
FR	28,364	424,9	9,5%	10,9%	15.683
DE	38,990	474,5	8,5%	18,8%	28.212

There are opportunities for improvement

.....and the willingness to change increases

Networksize

Average; but “big” compared to NL

Modal split

- Passenger : low
- Freight : average

Utilisation

Relatively low (slightly better than FR)

Punctuality

Funding / Governance

The challenge for Infrabel

Business As Usual

- Financially driven (60/40)
- Operational improvement programs (I-AM 2020, SMARTER-M, new TMS,..)
- Diligent , “bon père de famille”

New strategy

Input for discussion (Board)

New strategy on the long term (Gov.)

Visualise our
constraints & opportunities



Phoenix
Project

Can we go on as before ?

Agenda

1. The challenge

2. The audit mission

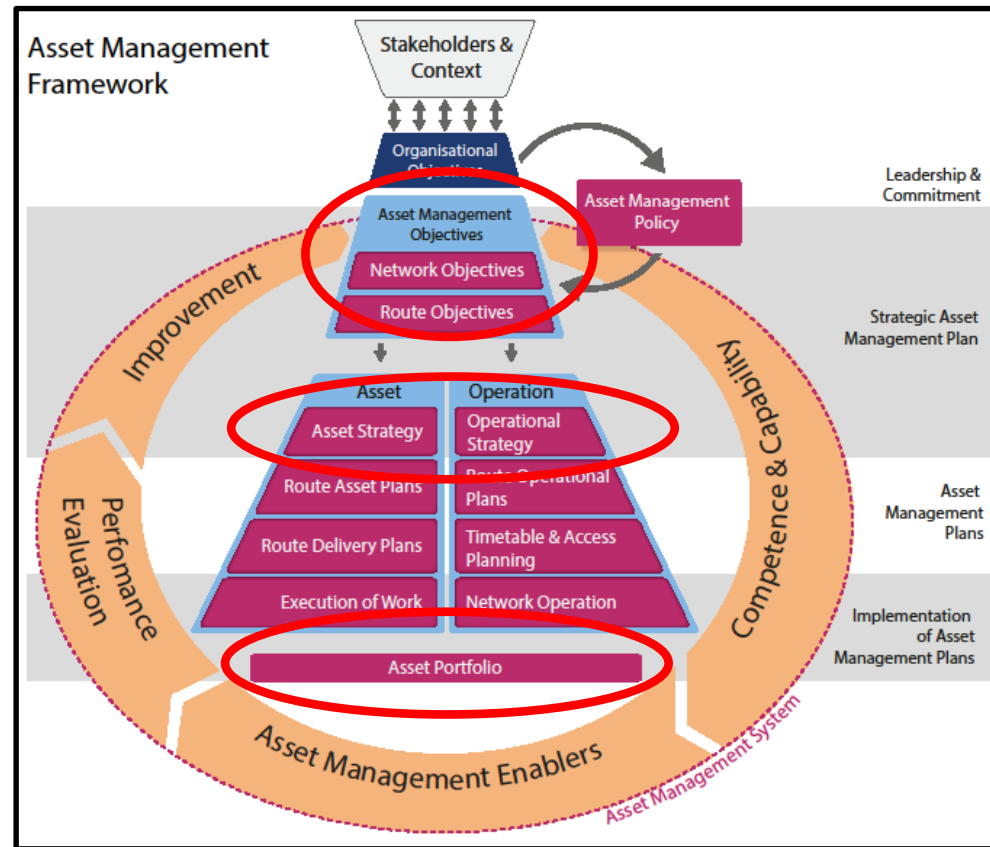
3. Looking back & Looking forward

What kind of mission ?

Mobility development scenarios

Replacement needs
Maintenance needs

State of the network



Demand evolution
Capacity utilisation

State of the traffic

A strategic multi-scenario analysis : horizon 2040

Why an audit ?

The main advantages

- Methodological approach based on operational realities
- Objective & challenging
- International neutral expertise / simulation tools



www.imdm.ch

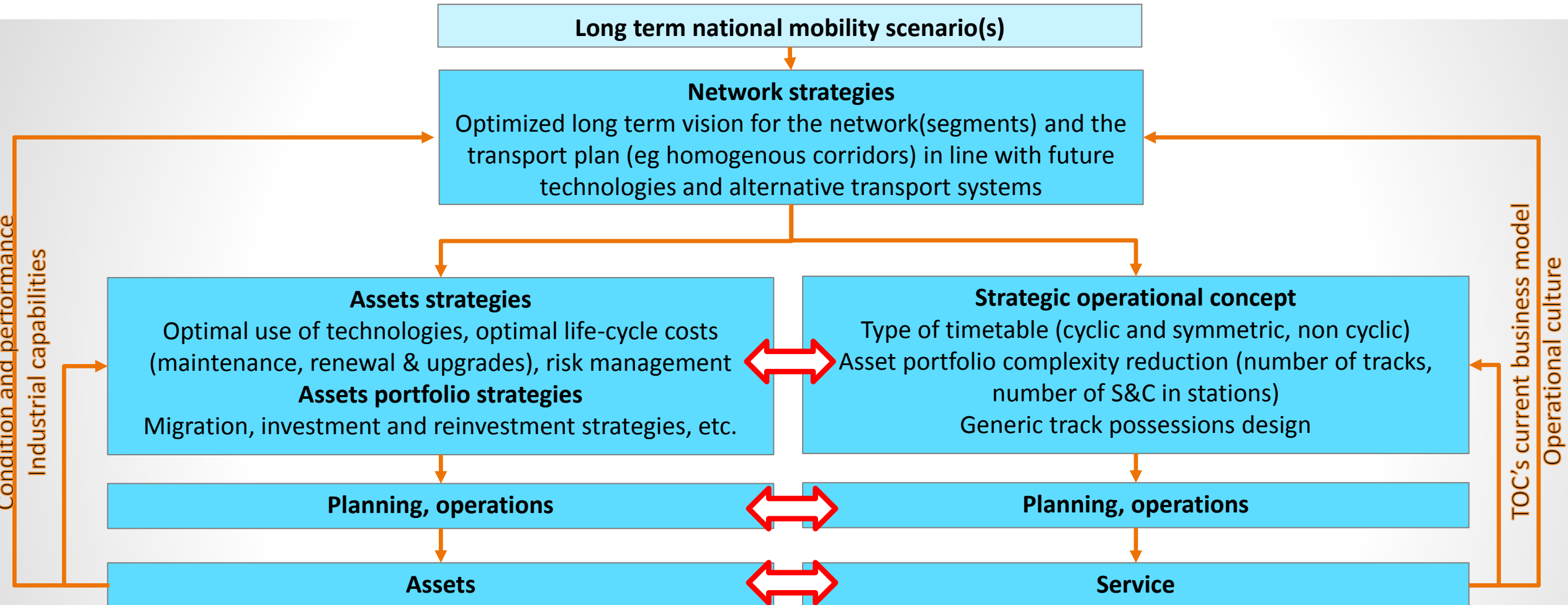
Infrastructure Management Decision Making



www.sma-partner.com

Railway System Planning

Optimizing the future value of our network



Line-segmentation is used as driving force to define adequate strategies⁸

2 audits deliverable until now

D1) Evolution of the state of the network

D2) Evolution of the use of the network

The mission's objectives

“The reference”

Replacement investments
Recommendations
Reference scenario 2040

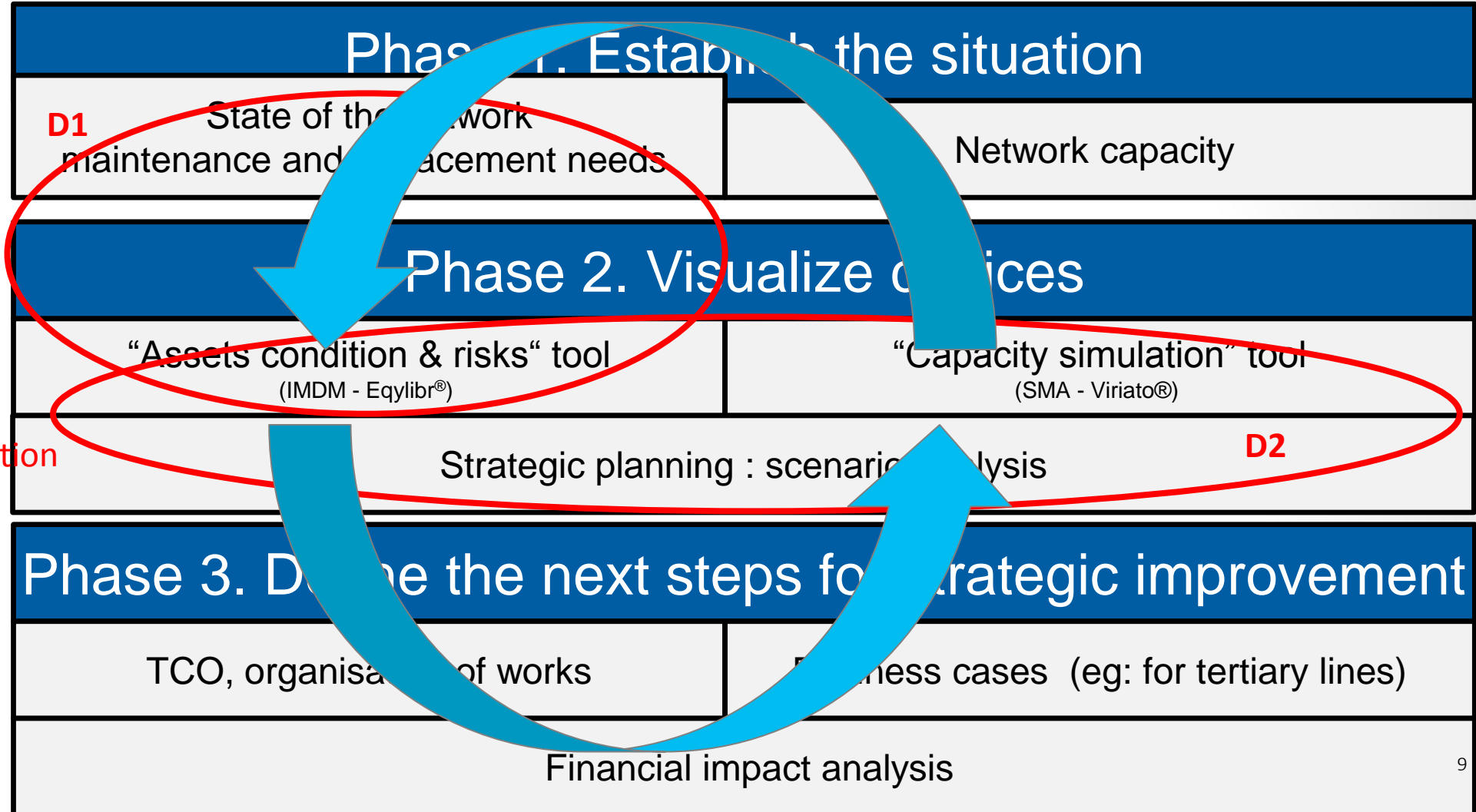
“Scenario analysis”

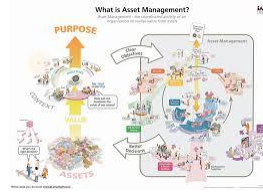
Simulation-tools

Scenario building & evaluation

“Apply the strategy”

Decision making
to support the strategy





D1 : Evolution of the state of the network

(Delayed) renewal

Asset inventory

+

- Technology & automatization
- Asset base
 - Extensions & suppressions
 - Rationalisations



**Risk based output
(auditors judgement)**

- step by step adjustments
- safety first
- strategic line segmentation

Scenarios

- Resource constraints
- Budget constraints

Traffic evolutions

- Charge (growth)

D1 : Evolution of the state of the network

Theoretical scenario : renewals based upon aging without constraints



Industrial scenario : renewals based upon aging with industrial constraints

- As of 2020 additional CAPEX needed to guarantee safe network.
- 60/40 CAPEX repartition non tenable without structural adjustments

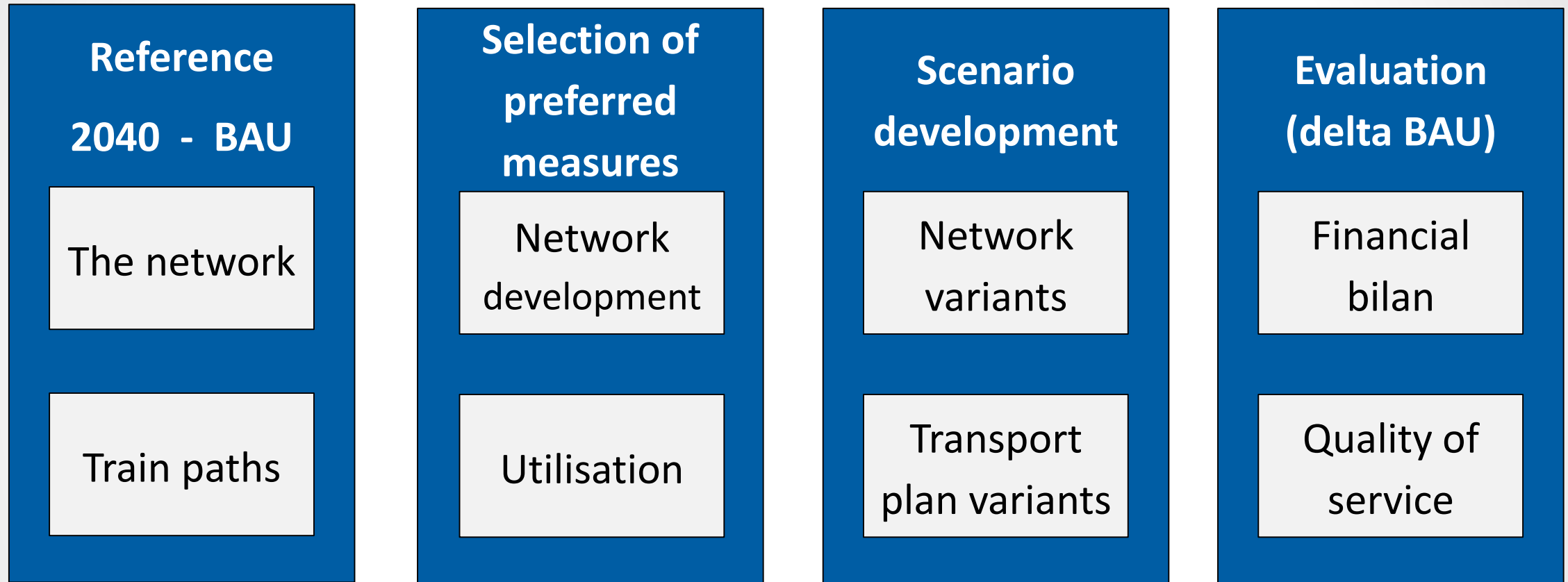


Limited budget scenario : budget remains constant after 2020 (= reference BAU)

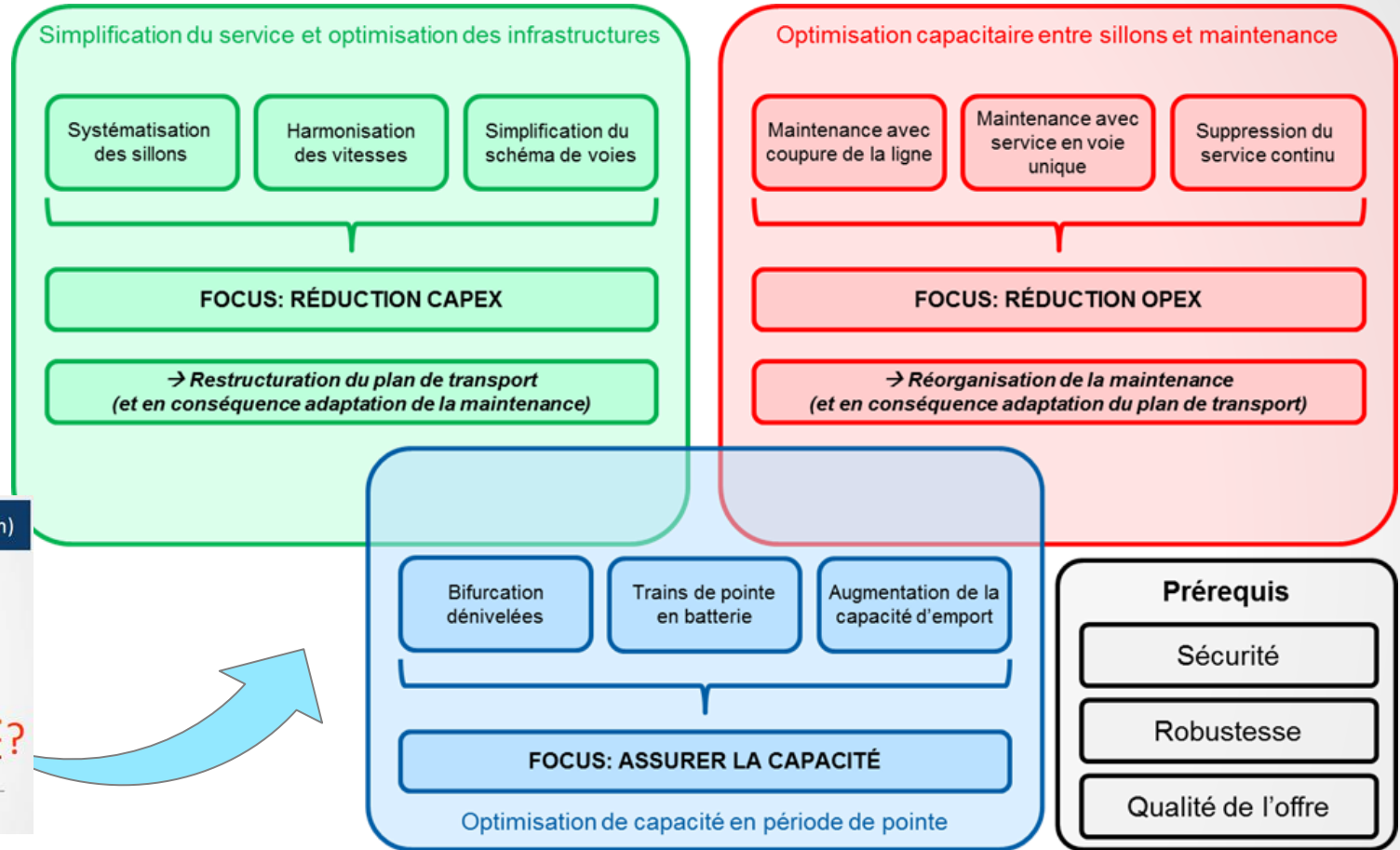
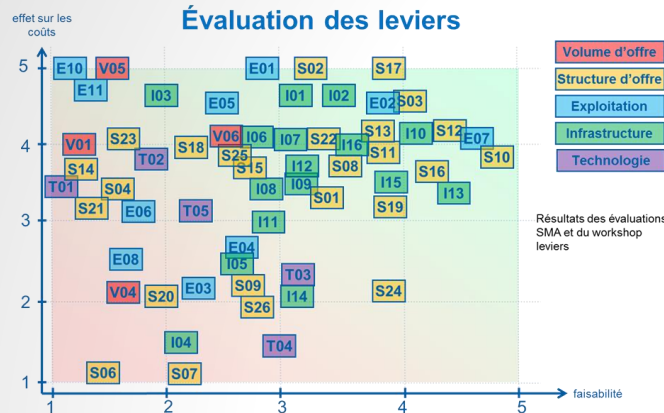
- up to 25% of the fine meshed lines will have exceeded the economical lifetime in 2047

D2 : Evolution of the use of the network

1. Cost reduction
2. Increase utilisation (asset reduction and/or traffic increase (corridors))
3. Quality of service (safety / punctuality)



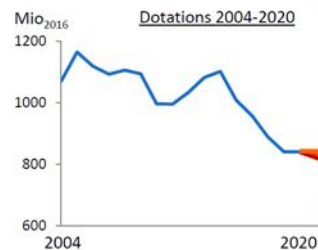
D2 : Evolution of the use of the network



1 Productiviteit : MAX

Massification
I-AM.2020
New Ways of Working
NewTM
DIGITALISATION
SMARTER-M
Suppression appareils de voie

2 Financiering : 3 scenario's (minimum)



2 contrasting scenarios for a first iteration

Indicative results of first iteration

D2 : Evolution of the use of the network

No additional network extensions (except the ongoing)

	Scenario focus OPEX	Scenario focus CAPEX
OPEX budget	Reduction by increased productivity (day work windows)	Reduction by elimination of switches
CAPEX budget	-	reduction by elimination of switches
Transport plan changes	Same logic as today	Disruptive, important impact in stations
Volume in peak (increase 2040 vs 2018)	+ 36%	+ 57 %
Capacity to meet future demand	Not OK	OK (except certain lines to BXL)
Robustness	No improvement, no deterioration	Slightly better

Minus

- Low utilisation
- Single line exploitation

Minus

- Low flexibility (corridors)
- Resistance against change in transport plan

Agenda

1. The challenge

2. The audit mission

3. Looking back & Looking forward

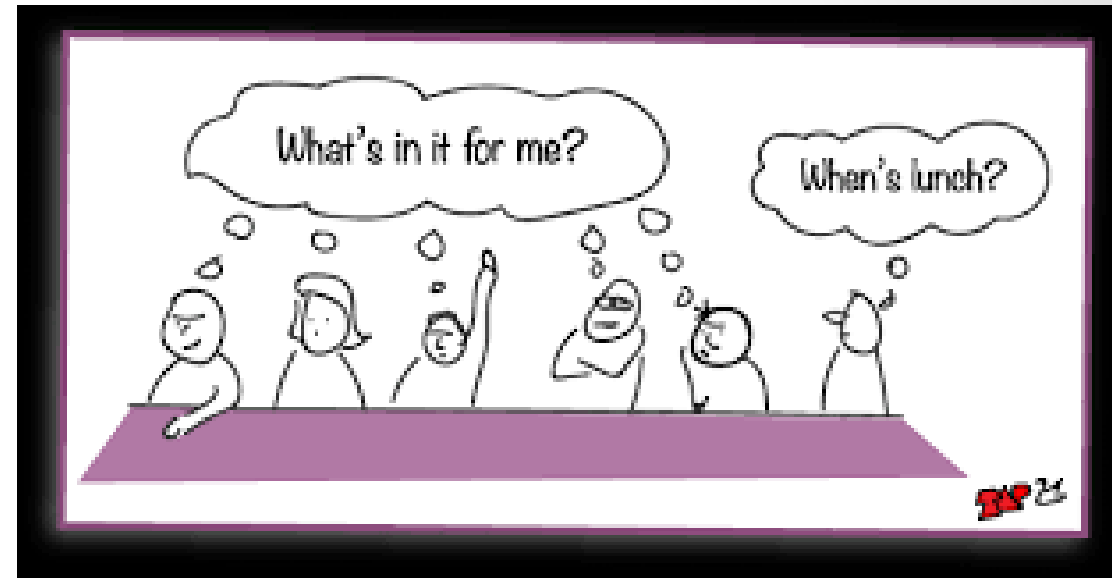
A look back

Main success factor

- Implication of management & experts
- Implication of the board
- The auditors

Achievements

- Awareness !
- Future (budget)scenarios defined by transport choices
- Development of a coherent financial asset model (OPEX & CAPEX). Permitting to calculate budgets by asset needs (risk based) instead of “due diligence”



And a look forward

Next steps

- Further improve simulation capabilities
 - Tools & data
- Act on recommendations
 - Improve decision making (LCC, R&R)
 - Long term exploitation & network vision
 - The future role for public transport & rail
 - Roles & responsibilities – building blocks (cfr. scenario choice)

Our roadmap for Asset Management is taking shape

1

Implementation of RAIL ASSET MANAGEMENT

- Clear objectives – better decisions.
- Maximise the value of the rail assets.

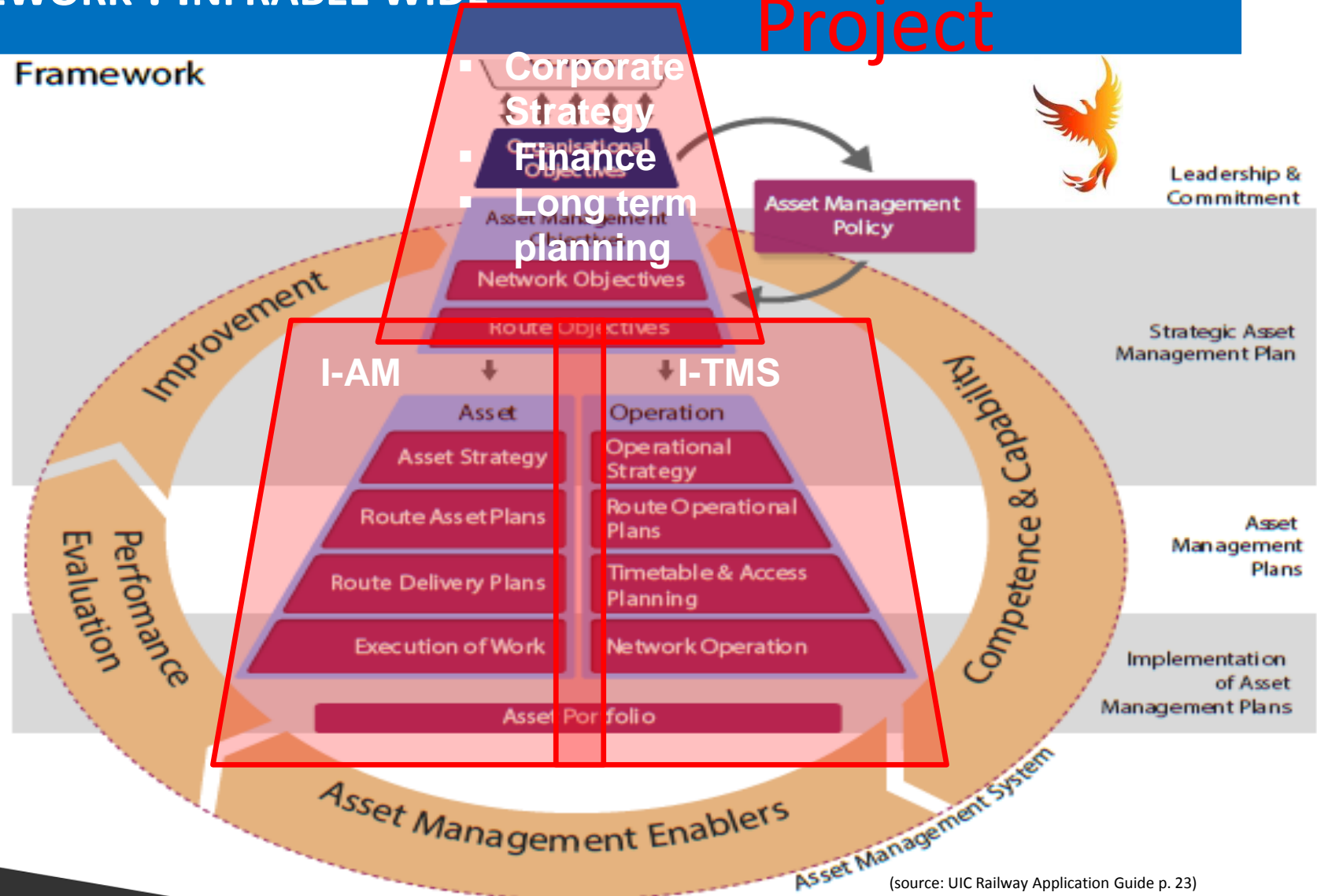


2 THE UIC AM FRAMEWORK : INFRABEL WIDE

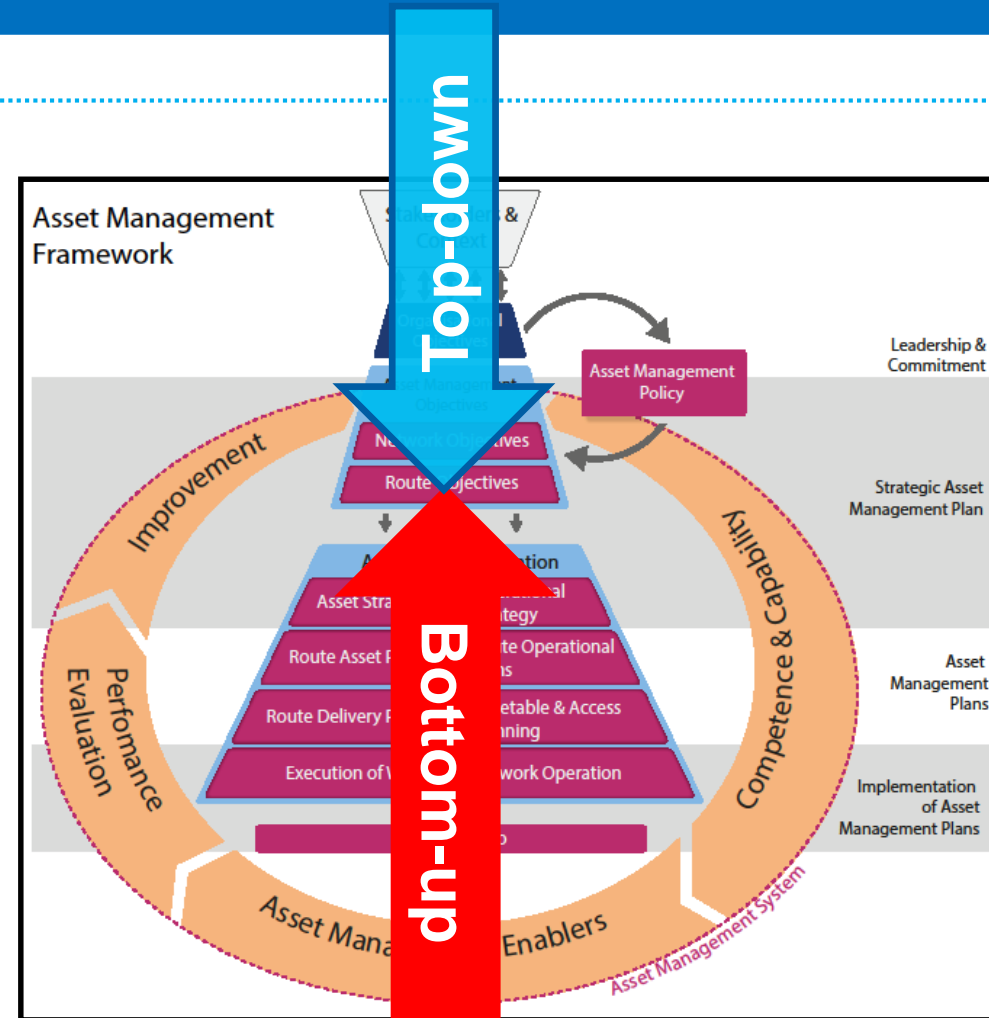
Phoenix Project

AM Framework ≠ I-AM

Framework



3 THE UIC AM FRAMEWORK : TWO STREAMS



STRATEGIC CHOICES & DECISION CRITERIA

Line segmentation

Robustness Long term vision Corridors

Transport plan

Rationalisation

OPERATIONAL EXCELLENCE

Massification
I-AM.2020
New Ways of Working
NewTM
DIGITALISATION
SMARTER-M
Suppression appareils de voie

As yet no formal roadmap

But we continue nurturing our “maturity” growth path

- Understand what’s it about by using it (implicit)
- Prepare the basics (more explicit)

***Maturity is not when we start speaking big things
it is when we start understanding small things.***

Thank you