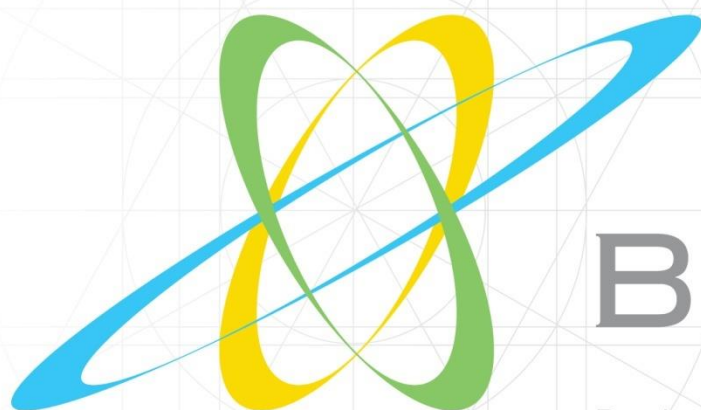




BENEFIT

Business Models for Enhancing Funding
& Enabling Financing for Infrastructure in Transport

Deliverable 6.10: BENEFIT Final Event Report



**European
Commission**

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Grant Agreement No.: 635973

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Glossary

Within BENEFIT certain terms are used throughout. These are described here.

Public Private Partnership(s): Notwithstanding existing formal definitions of this procurement/delivery model, in the BENEFIT project a Public Private Partnership is considered a project (of public interest) receiving private (co)financing, under a contract that bundles at least construction and operation. The contract also may include the allocation/transfer of project risk(s).

Funding Scheme: A funding scheme is considered to be any combination of private and public income generated by or towards the infrastructure over its life cycle. These may include any combination of user contributions (tolls, fees, fares etc.) or public contributions based on direct and indirect taxation etc. Public funding may also take on the form of availability fees, shadow tolls etc.

Financing Scheme: A financing scheme is considered to be any combination of public and/or private financial investments or instruments (e.g. guarantees) required by the infrastructure project over its life cycle.

Business Model: The business model describes the business case of the overall investment in the project. Depending on the context, it may be narrowed, including merely the service(s) of the infrastructure project(s) considered, or it may be widened, including other planned and commonly designed activities which aim to capture other “planning gains” (and other value-adding services) and/or exploit synergies across different sectors (e.g. transport, energy, ICT). These synergies are a direct reference to the concept of innovative procurement and other novel approaches to infrastructure delivery, now in the pilot phase.

Key Elements: Elements are groups of contextual variables which influence the performance of the funding scheme and financing scheme of a transport infrastructure project. Elements, as noted in Figure 1.1.1 [of the proposal/contract], are the implementation environment (socio-political, micro- and macro-economic, institutional, regulatory, etc.); the transport mode (functionality; natural and contractual exclusivity, etc.); business model structure; funding scheme; financing scheme and governance and institutional arrangement (risk allocation; decision making processes; ownership rights, etc.).

Typology: A typology is a group of factors that aims to describe the characteristics of Key Elements (see above definition). These factors are defined, developed and quantified through the use of relevant Indicators (see definition below) in order to capture particular project behaviour. Example: A negative private investment environment can be captured by factors within the implementation context typology. The group of factors leading to the demonstration of this behaviour may consist of: poor growth forecast, lack of enabling legal framework etc. Typologies have been generated for every element (context) that has been found to influence transport infrastructure projects by leveraging empirical information from the collective BENEFIT database (country profiles and project cases) through field and desk research. Typologies and their underlying Indicators have been based on quantitative and qualitative analysis.

Decision Matching Framework: This is the Analysis and Decision Framework that has been developed by the BENEFIT project. The framework contains typologies influencing the overall performance of a project. The Matching Framework describes the system of infrastructure delivery.

Transport Infrastructure Resilience Indicator: Is a new proposed indicator measuring the ability of a Transport Infrastructure project to withstand, adjust and recover from changes within its structural and implementation elements with respect to its ability to deliver specific outcomes (such as cost and time to completion, expected traffic and expected revenue targets). The Transport Infrastructure Resilience Indicator is linked to an underlying rating system whose categories reflect the likelihood of achieving pre-specified target outcomes and express the level of vulnerability of the project to external adverse implementation conditions and internal structuring weaknesses.

Indicators: The BENEFIT Matching Framework typologies are expressed through indicators which take values in the range [0, 1]. As indicators tend to the value 1, they represent a project structure that has less risk and lower cost to the project. The indicators used within BENEFIT are described below:

*The **Financial Economic Indicator*** measures more than just the macro-economic and macro-financial context of a country, but more broadly the *business environment* and can be seen as a proxy of *the level of productivity of a country*. The Global Competitiveness Index of the World Economic Forum was selected to describe this indicator.

*The **Institutional Indicator*** refers to political, regulatory and administrative factors ranging related to political stability and capacity, as well as absence of corruption; legal and regulatory framework (in terms of rule of law, regulatory quality), including the liberalization of transport market regulations; and public sector capacity as measured by government effectiveness. For most of these factors, relevant governance indicators of the World Bank Governance Indicator (WGI) are used, besides the OECD ECTR indicators regarding transport.

*The **Cost Saving Indicator*** is a composite indicator including: Ability to construct (Level of civil works/ technical difficulty; Capability to construct; Construction risk allocation as per contractual agreement; Assessment of optimal construction risk allocation based solely on the capability to construct); Ability to monitor/control/plan and provide political support of the respective (public) contracting authority; Adoption of innovation and its successful application; Life cycle planning and operation (Life cycle planning verification; Capability to operate; Operation risk allocation as per contractual agreement; Assessment of optimal operational risk allocation based solely on the capability to operate).

*The **Revenue Support Indicator*** is a measure of the project's ability to generate revenues. It is a composite indicator that includes: The level of competition of the new (greenfield) and existing (brownfield) parts of the project; revenue from transport and non-transport sources managerial assessment.

*The **Reliability/Availability Indicator*** represents the level of physical and operational reliability and availability of the infrastructure and the transport service.

*The **Governance indicator*** refers to factors setting the governance scene within a project. In this respect, it is defined by the contractual conditions and the process leading to them.

*The **Remuneration Attractiveness Indicator*** represents the various income sources with their assessed risk and potential cost coverage.

*The **Revenue Robustness Indicator*** represents the various revenue sources with their assessed risk and potential cost coverage.

*The **Financing Scheme Indicator*** reflects an expanded version of the weighted average cost of capital included in the project from both public and private sources (1-WACC_{ad}).

Snapshots: Are time-specific sets of typology indicator values describing a project case at various points in its life cycle.

Abbreviations

MF	:	Matching Framework
TIRI	:	Transport Infrastructure Resilience Indicator
S-TIRI	:	Static Transport Infrastructure Resilience Indicator
D-TIRI	:	Dynamic Transport Infrastructure Resilience Indicator
O-TIRI	:	Overall Transport Infrastructure Resilience Indicator
FEI	:	Financial – Economic Indicator
InI	:	Institutional Indicator
GI	:	Governance Indicator
CSI	:	Cost Saving Indicator
RSI	:	Revenue Support Indicator
RAI	:	Remuneration Attractiveness Indicator
RRI	:	Revenue Robustness Indicator
MEAI	:	Market Efficiency & Acceptability Indicator
FSI	:	Financing Scheme Indicator
IRA	:	Reliability-Availability Indicator
fsQCA	:	Fuzzy-Set Qualitative Comparative Analysis
IA	:	Importance Analysis
CRA	:	Credit Rating Agencies
PPP(s)	:	Public Private Partnership(s)

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1 Introduction

1.1 Introduction to the BENEFIT Project

BENEFIT seeks to take an innovative approach by analysing funding schemes within an inter-related system. Funding schemes are deemed to be “successful” (or not) depending on the Business Model that generates them as well as their stakeholders and policy contexts. The performance of the Business Model is affected by the implementation typology and the transport mode context – together with other contextual changes over time and space, including changes in overarching policy frameworks. It is matched successfully (or not) by a financing scheme. Relations between actors are partially described by a governance model (contracting arrangements). These are key elements in Transport Infrastructure Provision, Operation and Maintenance, as illustrated by Figure 1.1.1.

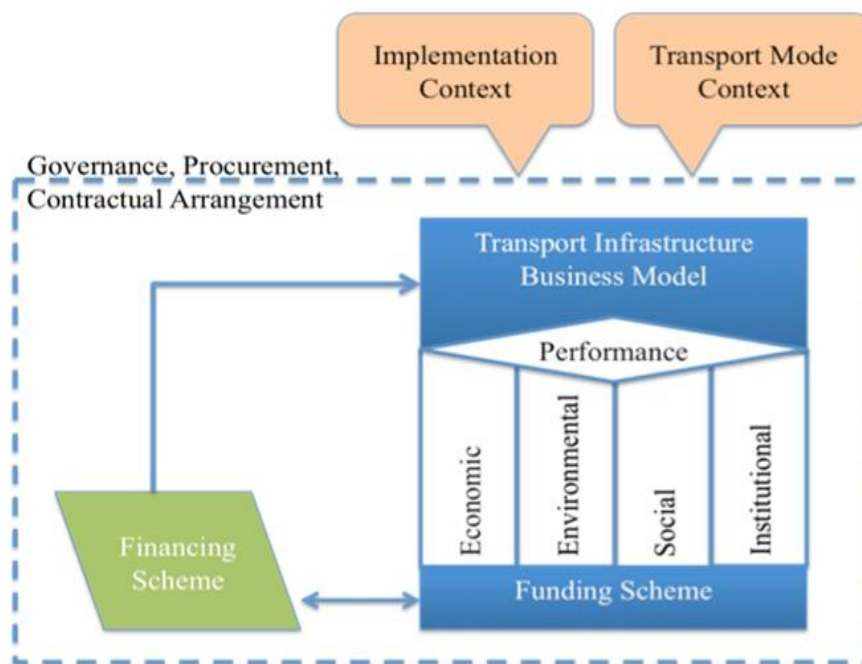


Figure 1.1.1 BENEFIT Key Elements in Transport Infrastructure Production, Operation and Maintenance

Success in relation to the application of a particular business model is seen here as an assessment of the appropriate matching of elements. Within BENEFIT funding and financing schemes are analysed in this respect. Describing these key elements proposed through their characteristics and attributes and clustering each of them into typologies is the basis of, first, developing a generic input/output model. Identifying best matches and their inter-relations (matching principles) leads to move from a generic model to a Decision Matching Framework that is developed to provide policy makers and providers of funding (and financing) extensive comparative information on the advantages and limitations of different funding schemes for transport infrastructure projects and improve the awareness of policy makers on the needs of projects serving an efficient and performing transport network within the Horizon 2050. Moreover, the model allows policy makers to identify changes that may be undertaken in order to improve the potential of success, such as improving the value proposition of the business model.

In developing this model, BENEFIT takes stock of project profiles known to its partners in combination with a meta-analysis of relevant EC funded research and other studies carried out with respect to funding schemes for transport (and other) infrastructure and direct contact with key stakeholder groups.

More specifically, BENEFIT uses the published project profile descriptions of **seventy-five** transport infrastructure projects funded and financed by public and private resources from nineteen European and four non-European Countries covering all modes of transport. It also exploits twenty-four European country profiles with respect to contextual issues (institutions, regulations, macroeconomic and other settings) influencing funding and financing of transport infrastructure. This data has been produced within the framework of activities undertaken by the OMEGA Centre for Mega Projects in Transport and Development and the COST Action TU1001 on Public Private Partnerships in Transport: Trends and Theory. In addition, BENEFIT, through its partnership and respective experts, consolidates almost twenty years of successful European Commission research with respect to issues related to transport infrastructure and planning, assessment and pricing of transport services. In this sense, the approach is supported by the tacit knowledge and insights of the BENEFIT partnership with respect to infrastructure projects in transport.

By applying the Decision Matching Framework, BENEFIT undertakes:

- An ex-post analysis and assessment of alternative funding schemes (such as public, PPP and other) based on existing experiences in different transport sectors and geographical areas and their assessment with respect to economic development, value for public money, user benefits, life-cycle investment, efficiency, governance and procurement modalities, etc.; and provides lessons learned, identification of the limitations of the various schemes and the impact of the economic and financial crisis.
- An ex-ante (forward) analysis and assessment of the potential of transport investments and the related funding schemes, including innovative procurement schemes still in a pilot phase, to contribute to economic recovery, growth and employment, in view of future infrastructure needs with a 2050 horizon for modern infrastructure, smart pricing and funding.

BENEFIT is concluded within twenty one¹ months and bears the following stakeholder focus and policy scenarios:

- Transport infrastructure business models and their project rating: Improved value propositions lead to funding schemes with enhanced creditworthiness enabling viable financing, balancing of project financing and funding risks, increasing the value basis of stakeholders and highlighting the potential of transport investments.
- Transferability of findings with respect to lessons learned, limitations and the impact of the economic and financial crisis through the introduction of typologies for particular sets of stakeholders under different scenarios.
- Open-access case study database in a wiki format, allowing for continuous updates and providing a knowledge base serving both practitioners and researchers.

¹Twenty two months following the last BENEFIT project grant agreement amendment.

1.2 Scope of BENEFIT Final Event

The organisation and realisation of the BENEFIT Final Event forms an integral part of WP6, which was dedicated to raising awareness, providing information, engaging stakeholders and promoting BENEFIT, and, more specifically, of Task 6.3-Communication and Events, according to which, and as stated in the project proposal:

“BENEFIT will conclude activities with a final conference to widely disseminate findings and outcomes”.

To this end, BENEFIT activities culminated in the **BENEFIT Final Event**, a public launch of the project's results and outcomes, with the explicit scope to **disseminate and discuss its collective findings in terms of both key conclusions drawn and recommendations put forward**. This constituted BENEFIT's overall public highlight, presenting all final results and outputs to an international audience that included members of the Advisory Group, the consultation groups, as well as experts from academia, industry and other stakeholders with a view to spread the project's outreach far beyond its life span.

This present report describes the objectives, structure, activities, discussions, and main results of the BENEFIT Final Event.

1.3 Report Structure

Following this introductory Chapter 1, the report is structured as follows:

Chapter 2 presents the goals of the BENEFIT Final Event as well as a summary of the programme, general organisation and attendance.

Chapter 3 describes the objectives and the structure of the sessions organised.

Chapter 4 reports the key discussions of the group sessions together with BENEFIT responses and clarifications.

Chapter 5 ends the report, listing the general conclusions derived from the event.

Annexes support the core report and include auxiliary material. More specifically:

Annex 1 presents the programme of the event.

Annex 2 presents the presentation held in Day 1 on the BENEFIT project, its analyses and key findings

Annex 3 presents the presentation held in Day 2 on the BENEFIT lessons learned and policy recommendations.

Annex 4 includes the supporting material provided to the participants.

Annex 5 presents the registration list.

Annex 6 presents the participants list.

Participants who did not wish their contact information published, are only listed with their name initials.

2 BENEFIT Final Event Goals and Organisation

2.1 Goals

The main goals of the Final Event was to present the final findings of BENEFIT with a focus this time on the key conclusions derived following the completion of the project tasks, as well as the recommendations put forward as these were set out in D5.3. The underlying rationale behind the Final Event was to steer discussions towards new financing schemes and the applicability of the BENEFIT findings, and more specifically, the usefulness and contribution of the BENEFIT Policy Guiding Tool: The Transport Infrastructure Resilience Indicator (TIRI) and its rating system.

More specifically, a special focus was placed on the Transport Infrastructure Resilience Indicator (TIRI) Rating methodology developed during the final months of BENEFIT, which was not presented in the other two main communication events, i.e. the policy dialogues (see D5.2), held within the course of the project.

Consequently, presentations, sessions and theme discussions were organised in accordance with the above objectives and goals.

2.2 Programme and Organisation

The BENEFIT Final Event took place in Brussels, Belgium, in the 14th and 15th of September 2016. The programme is presented in Annex 1. A 2-half day event was held, each half day divided into a presentation session followed by dynamic discussion group sessions in the form of Round Tables and World Cafés. The Final Event was organized by UAEGEAN with the valuable support of the University of Antwerp (host country) and TIS.

In **DAY 1**, following the opening notes from Professor Werner Rothengatter, Member of the BENEFIT Advisory Group and Mr Carlo Corposanto (EC DG MOVE RTD), Project Officer, a presentation was delivered by the BENEFIT Team on the project's collective streams of analyses and key findings (included in Annex 2). The presentation included the introduction to the project and the BENEFIT Matching Framework, the indicators, and the main results derived from the qualitative and indicator quantitative analyses. Finally, participants were introduced to the Transport Infrastructure Resilience Indicator (TIRI) and related rating with the scope to set up the background for guiding discussions in the five Round Table workshops that followed, whose focus was the BENEFIT Matching Framework Policy Guiding Tool and TIRI Rating.

DAY 2 began with a presentation by the Project Coordinator (included in Annex 3) on the BENEFIT lessons learned and policy recommendations derived from the project, followed by two World Café rounds, focusing discussions of the different conclusions and recommendations of the project (see D5.3), as well as the applicability of the BENEFIT Policy Guiding Tool.

The structure, content and results of the above discussion groups are presented in detail in Chapters 3 and 4. The Final Event concluded with the BENEFIT team providing a summary of the key points of the discussions held in a general assembly setting, open to questions and comments.

2.3 Attendance

Information with respect to the BENEFIT Final Event was circulated in the **June 2016 Newsletter** as well as in the **Transport and Regional Economics newsletter** disseminated by the respective Partner of the University of Antwerp. Wide dissemination through web-mailings took place again at the:

- End of July 2016
- Mid of August 2016
- End of August 2016 (also employing the University of Antwerp, TPR mailing list)
- Early September 2016

Invitations to selected individuals were sent out for registration to the BENEFIT Final Event to the consultation groups as well as expert groups from the academia and industry and other stakeholders in the second half of July 2016.

110 Participants registered for the event from a variety of sectors of the transport infrastructure provision industry (public authorities, operators, international/national organizations and consultancy firms). Registrations were followed up by individual mails to confirm participation. **57** participants attended the first day, while **39** the second.

The registration and participant lists are presented in Annexes 5 and 6, respectively. Upon registration, participants were handed booklets of printed material that included the agenda of the BENEFIT Final Event, their personalised schedule for the different discussion groups, as well as the supporting material required for the exercise conducted during the first day's Round Tables.

3 Discussion Groups

The BENEFIT Final Event was organized around two main dynamic discussion group sessions, the Round Tables held on the first day and the World Café rounds of the second day. This Chapter describes in detail the objectives of the sessions and their structure. The key discussions in the sessions are reported in the next Chapter 4 of this report along with BENEFIT project responses and clarifications.

3.1 Day 1: Round Tables

3.1.1 Objectives

The Round Tables were set up to include Project Rating Demonstration Rounds, in order to test and validate the different elements of the Transport Infrastructure Resilience Indicator (TIRI) Rating and pave the ground for accelerating the outreach of such a decision-making tool. In addition, the discussion themes were oriented towards obtaining insight into the following:

- The way that the Transport Infrastructure Resilience Indicator (TIRI) Rating can contribute to and influence actual policy and planning processes.
- Requirements for improving the Transport Infrastructure Resilience Indicator (TIRI) Rating of a project.

3.1.2 Session structure

In the Round Tables sessions, 5 breakout groups were set up. In each group, the process included two rounds of Project Rating Demonstration through the presentation of two indicative cases also included in the BENEFIT Deliverable D5.1. by two “case owners” of the BENEFIT Consortium Team. The aim was for data to be progressively presented as included in the construction of each indicator, in order for participants to gain an understanding of which factors go into the calculation of each indicator and the way by which scenarios can be built. Indicator values would be used to estimate the TIRI rating score for each of the specified project outcomes (cost-to- (construction) completion, time-to- (construction) completion, actual vs forecast traffic and actual vs forecast revenue) based on provided TIRI rating assessment tables. The changes in users’ input resulting in alternate sets of indicator values would demonstrate the respective improved or worsened TIRI rating for each case scenario.

Each group session was chaired by a member of the consortium who guided the discussion, introduced questions and also acted as rapporteur. Table 1 presents the distribution of case studies, presenters and chairs/rapporteurs among the 5 round tables. Partners not presenting or reporting were also present at the different round tables and participated in the discussions held.

Table 1-Round Tables Groups

Round Table No	Cases/Country	Main mode	Delivery scheme	Project Case Presenter	Table Head & Rapporteur
1	Road 01	Road	PPP	Champika Liyanage	Goran Mladenovic
	Road 02	Road	Public	Miljan Mikic	
2	Road 03	Road	PPP	Marco Brambilla	Rosario Macario
	Tram 01	Tram	PPP	Pierre Nouaille	
3	Road 04	Road	PPP	Federico Inchausti Sintes	Thierry Vanelslander
	Tram 02	Tram	PPP	Eleni Moschouli	
4	Tunnel 01	Tunnel	PPP	Kay Mitusch	Hans Voordijk
	Road 05	Road	Public	Ibsen Cardenas	
5	Metro 01	Metro	Public	Agnieszka Lukasiewicz	Aristeidis Pantelias
	Bridge 01	Bridge	PPP	João Bernardino	

Participants were supplied with all input information per case BUT without project title and Indicator results. Additional material provided included the set of the TIRI rating assessment tables per mode, as well as a scoring sheet to register indicators and outcome ratings per various scenarios trialled and run through during the exercise. The supporting material provided to the participants is presented in Annex 4.

Two rounds were foreseen, as follows:

- First round: In this round participants get to understand indicators etc. and how scenarios may be built (duration 50 mins).
- Second Round: In this round participants are introduced to new cases but are aware of the background (duration 30 mins). Scenarios to improve on outcomes are introduced.

Although the discussion method did not restrict the structure, presenters and rapporteurs were oriented to guide discussions by bringing forward the following questions to the participants:

1. Does the TIRI rating assist in identifying how to improve the likelihood of a project achieving specific outcomes?
2. May the TIRI rating:
 - a. be applied in improving the tendering process?
 - b. be used in assessing alternative scenarios, especially in cases of renegotiation?
 - c. assist in monitoring project health?
3. Can practitioners take good value from the use of such a Policy Guiding Tool?
4. What are the main difficulties in using the TIRI rating in policy definition and implementation?

3.2 Day 2: World Café Rounds

3.2.1 Objectives

The discussion of the DAY 2 was oriented towards the BENEFIT Lessons Learnt, Policy Recommendations and applicability of the BENEFIT Policy Guiding Tool. The idea was to commence with setting a conclusion/lesson as a main topic to the group and steer discussions to recommendations and the applicability of the BENEFIT Policy Guiding Tool. The main objective of this exercise was to obtain insight into the structure of new financing schemes and the contribution of the BENEFIT Policy Guiding Tool. More specifically, the objective was to obtain feedback on the two following issues:

1. What would be the characteristics of a new financing scheme?
 - a. Low risk financing
 - b. Competence based project structure
 - c. New competences to address new activities/value propositions (innovation) >> new actors needed in the market >>> new sponsors
2. How would the BENEFIT Policy Guiding Tool (TIRI rating) support the above effort?

3.2.2 Session structure

The setting for the group sessions of Day 2 was a World Café, a format that had already been adopted in the BENEFIT 2nd Policy Dialogue and deemed successful and highly productive (see D5.2). Initially, three breakout groups with 3 topics introduced in each round and only one table change was foreseen, as depicted in Figure 2.

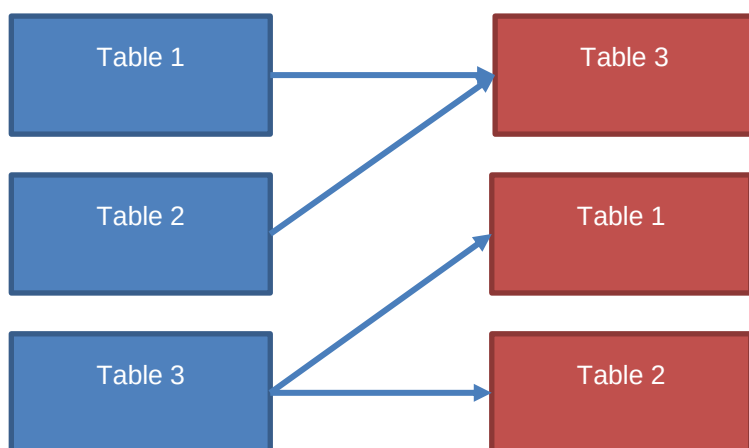


Figure 2- Table switching in World Café

Two BENEFIT partners were present at each table as chairs, while another partner was assigned the role of the rapporteur. Partners not moderating or reporting were also present at the different tables and participated in the discussions. Table rotation plans were predefined for each participant and BENEFIT partners. The original plan was modified due to the limited number of participants attending the second day, resulting in the set-up of two tables per round, as depicted in Table 2.

Table 2-Word Café set-up

Table	Topic	Chairs	Rapporteur
Round 1			
1	Implementation Context Indicators	G.Mladenovic / M.Brambilla	I.Karousos
2	Appropriate Risk Allocation	H.Voordijk / J.Campos	E.Moschouli
Round 2			
1	Funding & Financing Schemes Indicators	A.Pantelias/J. Bernardino	E.Moschouli
2	Data Collection & Sharing Issues	T.Vanellander / C.Liyanage	P.Moraiti

3.2.2.1 Round 1

In the first round of the World Café, the two tables addressed two key conclusions. Again, although not restrictive, a script was provided to chairs to guide discussions. The topics and related questions are presented in the following.

Topic 1 (Table 1):

The financial economic conditions in the country of implementation influence the likelihood of a project reaching its specified outcomes (cost and time to completion, forecast vs actual traffic and revenues).

Research within BENEFIT identified that:

1. Supportive institutions may compensate for a lesser financial economic context.
2. Project governance may also compensate for less supportive institutions.
3. A mature project with a good implementation structure under good project governance has a high probability of reaching its pre-specified outcomes.

Would you agree with the above?

Should you not agree:

- Do all projects in lesser financial economic conditions fail in terms of reaching pre-specified objectives?
- What would improve their potential of achieving (some) outcomes?

Should you agree:

Market observation: Following the 2008 year-mark, there has been a trend of Road PPPs being awarded in countries with positive financial economic conditions. Countries previously active (now countries with slow growth) have either reduced their participation or even exited the market.

Notably, the previously active countries, or other countries with slow growth, were/are also the countries with greater road infrastructure needs.

- How can we incentivise the PPP market to re-endorse/ endorse projects from slow growth countries?
- Could the BENEFIT Policy Guiding Tool (TIRI rating) prove useful in this effort? How?

Topic 2 (Table 2):

Appropriate risk allocation has been found to improve the likelihood of reaching project outcomes. More specifically, it was found that when risk is appropriately transferred to the private sector, demand forecasts have been more accurate (if not conservative).

Within BENEFIT, appropriate risk allocation has been assessed as the combination of the position of the infrastructure project in the transport network (also considering its scope: business development vs service provision) and the competence of the private partner. In addition, it was also found that:

- In PPPs, more than appropriate risk is transferred over to the private sector leading in many cases to “risk allocation creep”, i.e. while risk is transfer against risk premiums, in the end the public sector ends up bearing the risk.
- The amount of government guarantees put in place to support PPPs has been such that the financing of these projects resembles public financed projects.

Under these conditions, are PPPs viable solutions?

What would need to change in order to make them viable?

- A discussion of ex-ante vs ex-post risk assignment – some claim that it is cheaper to address the cost of risk eventuating than pay risk premiums;
- Competence – builder; operator; contracting authority – but how can the tender outcome be secured? How are appropriate concessionaires secured in ports?

How can the BENEFIT Policy Guiding Tool be used in support of appropriate risk allocation?

3.2.2.2 Round 2

The second round focused on the following topics:

Topic 1 (Table 1):

The BENEFIT Matching Framework employs the **Revenue Robustness Indicator** and the **Remuneration Attractiveness Indicator** to represent:

- The Project's revenue streams associated with the risk of the respective revenue streams and the cost coverage these revenues achieve.
- The project's income streams associated with the risk of the respective income streams and the cost coverage these incomes achieve.

Notably, while income and revenue streams may differ, in most PPPs they are found to coincide.

Along with the Financing Scheme Indicator, these three indicators were found to induce incentives and trade-offs between potential outcomes. Given this fact, the three indicators may be used to create the conditions to achieve particular outcomes.

- How can decision makers exploit this? Public? Private?
- How would the BENEFIT Policy Guiding Tool (TIRI rating) support the above effort?
- Could the BENEFIT Policy Guiding Tool (TIRI rating) be used to identify strategic behaviour?

Topic 2 (Table 2):

Systematic recording and sharing of transport (and other) infrastructure project information has once again been recognized as a limitation in the understanding of factors influencing performance. There is also evidence, that the lack of systematic recording and sharing of project information leads to loss of experience and lessons learnt.

What are the barriers to a data collection system?

Would the BENEFIT Policy Guiding Tool (TIRI rating) be improved through more detailed data/input?

- Advantages / disadvantages of its present configuration (may be applied using publically available data so useful for planning and outsider stakeholders/ less accurate)
- Advantages / disadvantages of developed based on more detailed data (more cumbersome / more accurate)

4 Discussions

The present chapter reports on the discussions conducted and issues raised by participants during the Final Event Round Table Sessions (Day 1) and World Café Rounds (Day 2). Issues raised are complimented with BENEFIT project responses and clarifications.

4.1 Day 1: Round Table Session Results

The exercise was carried out successively for the majority of cases, with main issues arising being clarified during the sessions. Nevertheless, in certain groups, time constraints did not permit the completion of the run-through for both cases originally foreseen, nor the trial of alternative scenarios. A common hindering factor was the excessive time used to explain the information needed to calculate the value of each indicator as well as the way to use the rating tables

Participants' feedback and key findings are summarised in the following, grouped under two categories: (i) advantages and current usability of TIRI rating, and (ii) issues for clarification. The second group includes the BENEFIT clarifications.

4.1.1 Usability and added value of the TIRI Rating

The following key points were made with respect to the added value of the Transport Infrastructure Resilience Indicator Rating (BENEFIT Policy Guiding Tool).

The TIRI Rating:

- Could assist in making the tendering process more efficient.
- Appears useful for considering high-level risks and enabling discussion / planning on what actions to take to mitigate these, as well as in cases of contract renegotiations during the project construction or operation phase.
- Appears useful for building different "financing" scenarios taking into account that public financing and private financing have different goals.
- Can work at the front end of projects as a follow-up to early project assessment tools (such as EAST – Early Assessment and Sifting Tool) in order to give confidence to decision makers as per their decisions and plans.

4.1.2 Issues for Clarification and BENEFIT Response

A number of issues surfaced during the discussions requiring clarification. These are listed below along with the BENEFIT project response.

The predictive character of the TIRI rating was difficult to understand.

Response: Currently, as described in D3.2, the TIRI rating has not assessed a large number of projects, so it is difficult to assign a quantitative likelihood value to each rating. Therefore, currently, the TIRI rating can only provide a qualitative assessment, as Credit Rating Agencies do with respect to creditworthiness.

Mechanisms behind the TIRI Rating:

- Unclear aim of the different questions considered to collect information for the various indicator calculations.

Response: Each indicator represents a group of influencing factors of similar impact/effect. These have been theoretically constructed based on analytical considerations and literature review. The indicators have been validated and verified throughout the BENEFIT project. The questions put forward systematically

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collect specific information to be included for the calculation of each indicator. Information on the indicators, their validation and verification (and also revisions) may be retrieved from BENEFIT Deliverables D2.2; D2.3; D2.4; D4.2 and D4.4.

- Danger of questions interpreted in different ways resulting in answers that cannot be comparable.

Response: Within the BENEFIT partnership, a specific protocol was put forward in order to collect information. This also included descriptions and interpretations. The BENEFIT data collection protocol may be found in the BENEFIT Deliverable D2.1.

- Unclear how the separate answers on the questions about governance and the group of indicators are aggregated into one value.

Response: As noted above, information on the construction and calculation of the BENEFIT Indicators may be retrieved from BENEFIT Deliverables D2.2; D2.3; D2.4; D4.2 and D4.4.

Finally, regarding the various **indicators**, the following issues were highlighted for further clarification:

Cost Saving Indicator:

- Exact meaning of Cost Saving Indicator.

Response: The Cost Saving Indicator takes its name from the Osterwalder's Business Model Generator as it includes all factors that may lead to the reduction of costs (see BENEFIT Deliverable D2.2). In essence, the Cost Saving Indicator constitutes a measure of project efficiency.

- Local player option may be penalising very competent players which, although local, have high expertise, particularly in urban transit (how do we differentiate between a London local authority and a small rural city one?).

Response: The London Local Authority (Transport of London) cannot be (and is not) considered a local actor. Questions and assessments are setup to be answered by knowledgeable actors and experts in the transport market, who have knowledge on the international position of transport infrastructure delivery players and actors (See BENEFIT Deliverables D4.2 and D4.4 for verification and justification). Furthermore, Transport of London is the contracting authority. With respect to the contracting authority, competence is assessed separately with respect to a number of features including past experience in project delivery; ability to manage stakeholders etc.

- Critical type of competence may not be captured pertaining to negotiating process. There is a need to capture different parties' capability to negotiate effectively, as this is critical for contracts.

Response: Critical renegotiation skills are only considered, as such, for the contracting public authority. The (renegotiation) skills of private actors are considered to be commensurate to their market position (see BENEFIT Deliverables D4.2 and D4.4 for verification and justification).

- Force majeure may be an issue that affects projects. Is there a way to differentiate between pure force majeure and other types of problems that have occurred due to stakeholder incompetence and have escalated to force majeure-type situations?

Response: Force majeure has not been considered separately in the BENEFIT approach, as this risk is usually addressed through governance (Governance Indicator with respect to flexibility conditions) and the national institutional framework.

- Include life cycle cost, apart from the project life cycle planning.

Response: Within BENEFIT, we were not able to collect in many cases detailed numerical information and the model has been geared to address differences rather than absolute values. In this context, addressing life cycle costs, does not provide added value, while life cycle planning serves the respective purpose.

Financial-Economic indicator:

- Question on how macro-economic conditions and financial market conditions are taken into consideration (by two separate sub-indicators). The question started from the observation that during the time of financial crisis the macro-environment and the financial markets may be diverging, so being captured by a single indicator would not be accurate.

Response: The Financial-Economic indicator, despite its name, measures more than just the macro-economic and macro-financial context of a country, but more broadly the *business environment* and can be seen as a proxy of *the level of productivity of a country*. As described in Deliverable D3.1, the Global Competitiveness Index of the World Economic Forum, was selected to describe this dimension of the implementation context. The overall “competitiveness index” of the World Economic Forum aims to measure *the capacity of the national economy to achieve sustained economic growth over the medium term, controlling for the current level of economic development*. It includes predominantly:

- A macro-economic dimension, capturing the government budget balance, gross national savings, inflation, general government debt and the country credit rating,
- A financial market development pillar (measuring among others the availability and affordability of financial services, ease of access to loans, soundness of banks, and venture capital availability).

But also:

- Information on supporting contextual elements and policies, including the goods market efficiency, labour market efficiency, technological readiness, market size, business sophistication and innovation in a country.
- The availability of some basic requirements in terms of education, health of the population and overall infrastructure, as well as
- Limited business-oriented aspects of the institutional environment (such as property rights, intellectual property protection, efficiency of legal framework in settling disputes, strength of auditing and reporting standards).

Revenue Support Indicator:

- How are non-compete clauses taken into consideration? If they are not honoured or violated, then they would be affecting the revenue projections of a project (sometimes this is a political decision and not a project-related one).

Response: The indicator considers the level of exclusivity not only based on the position of the infrastructure in the network but also based on exclusivity introduced through contractual terms (e.g. non-compete clauses). The indicator values are not static. They change over time (and are captured by different snapshots). Therefore, violations may be reflected in the changing value of the indicator over time.

Governance Indicator

- Governance indicator found relatively easy to use. Regarding a question on the role of EU legislation on governance, it was pointed out that the effect of this legislation is indirectly measured and reflected in the answers on the governance questions.
- The difference between Institutional environment and Governance is unclear.

Response: The Governance Indicator and, in extension, Governance, concerns the “rules of conduct” stemming from the contractual arrangement.

The Institutional indicator shows the extent to which the political, legal and regulatory, and administrative context in a country is stable and of a high quality. It includes three dimensions:

- The “political” sub-dimension “political capacity, support and policies” which is composed by three main governance indicators of the World Bank:
 - Political stability and absence of violence,
 - Control of corruption and
 - Voice & accountability.

When combined these three indicators give a good overview of the general political situation in a country. In short, the political stability and absence of violence basically captures the likelihood of political instability and/or politically-motivated violence, where the voice and accountability reflects a country’s citizens’ ability to participate in selecting their government. Also, the control of corruption index delineates the extent to which public power is exercised for private gain.

- The “regulatory” sub-dimension “legal and regulatory framework” which is also composed by the World Bank Indicators:
 - Rule of law and
 - Regulatory qualitycombined with the inverse of the aggregated OECD indicators of:
 - Regulation in energy, transport and communications (ETCR) on the regulatory restrictiveness of markets.

The ECTR index of the OECD in reverse represents the extent of liberalization of these markets. Again, these three elements paint a rather comprehensive picture of the judicial and regulatory context of a country. Whilst the rule of law index represents the extent to which agents have confidence in and abide the rule of society, the regulatory quality index captures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

- The “administrative” sub-dimension “public sector capacity” has only one indicator, namely
 - the government effectiveness developed by the World Bank.

This index mainly reflects the level of effectiveness of government in terms of the quality of public service, the quality of civil service, the quality of policy formulation and implementation and the credibility of the government’s commitment to such policies.

4.2 Day 2: World Café

4.2.1 Topic 1: Discussion on the effect of the financial and macro-economic conditions and implementation context on the project outcomes.

The following issues were brought up:

- The first round of discussion was mostly related to the importance of strong institutional context and good governance for project performance in the case of financial economic crisis. However, there was a lack of understanding of macro financial-economic indicator (FEI) that was used to indicate the impact of crisis.

One view expressed was that public institutions in the case of crisis could support projects only by putting more money. During discussion it was explained that public subsidy is included in the Financing Scheme Indicator (FSI) and would reduce the cost of capital.

A key argument was that the projects survived the crisis with smaller changes in outcomes because institutions were capable of either subsidizing the infrastructure sector directly or as part of a stimulus package (which is typically aimed at infrastructure anyway).

Response: The issues presented above show a poor understanding of the Financial–Economic and Institutional indicators, as participants relied on their own intuitive interpretation and not on the definitions of the indicators as provided by BENEFIT. More specifically, as noted previously, the Institutional indicator does not relate to the issues referred to above. Moreover, subsidies or any other public contribution would feature in the Financing Scheme indicator.

- A question was asked repeatedly on the statistical analyses performed suggesting that this is the reason the Institutional indicator appears as important.

Response: A qualitative analysis of all cases was performed in addition to fsQCA, importance and econometric analyses. The Institutional indicator (InI) always appears to be relevant and/or important. Reference to the relevant project deliverable (D3.2) was made for further detailed information on the composition of both indicators (FEI & InI).

- A simple narrative that could connect FEI and InI could be that in developed countries, project proposals are more robust as they are developed more maturely, i.e. better institutions do not approve non-mature projects. Also, mature projects are more resilient, therefore, can survive the crisis with smaller changes in outcomes, while in developing countries, proposed projects are not institutionally supported and, thus, show less resilience to the crisis. Nevertheless, there is a long path to prove the latter.

Response: BENEFIT findings do provide evidence in support of the above narrative.

- In the second round, it was discussed that the investments could be incentivised through policy decisions (without solving the slow growth problems of the country) and the Juncker plan was outlined as a tool that is intended to assume the first level of risks of projects under macro-economic pressure. Related to that, the tool developed in BENEFIT could be used for screening the projects, albeit at a higher level.

Response: Again this approach would feature in the Financing Scheme indicator.

- There was another question on how government guarantees can be captured by the model.

Response: Government debt guarantees would reduce the cost of capital, and increase the value of the Financing Scheme Indicator (FSI). Revenue guarantees are not directly captured by the FSI but could be captured through the funding scheme indicators (RAI & RRI) Subsidies are captured through a particular category of public sector capital.

- One option mentioned that would increase the competence of the contracting authority is to involve external experts, but that option has limited effect.

Response: The competence of both public partner and contractor is captured through the Cost Saving indicator (CSI), which can reflect the public sector's capability for (re)negotiations and agreements. The existence/contribution of external advisors could be reflected in the CSI indicator through a higher value.

- It was also discussed that not all transport modes were exposed to the crisis in the same level. The example is urban public transport which can benefit to some extent from the crisis, since there might be a shift of passengers from other modes.

Response: For this reason, the Financial–Economic indicator is not considered in the Urban Transit rating methodology.

- Finally, regarding the example of hospital projects in the UK, the reason behind the good performance of these projects despite the crisis, may also be the use of availability remuneration schemes.

Response: The BENEFIT project concerns transport infrastructure. However, the concept may be transferred to other sectors. In any case, within BENEFIT it was found that low risk remuneration schemes (such as availability fees) do improve the potential of reaching both demand and revenue targets.

4.2.2 Topic 2: Discussion on appropriate risk allocation

- The discussion in the first round focused on political sensibility and if and how this could be captured in a model that's based on rational assumptions.

Response: BENEFIT contributes to the issue of appropriate risk allocation by clarifying the following elements:

1. Risk allocation is incorporated in the analysis of all project elements (funding, financing, payments structure etc.).
 2. The operator's competences must be included explicitly.
 3. There may be substantial differences by mode (e.g. the case of ports)
 4. Tendency to risk allocation creeping identified.
- Regarding specific examples of risk allocation creep, two participants identified a project on schools and school safety in the UK, whereby risk allocation is improved by starting initially with the private sector and later transferring the cost to the public sector.
 - Demand Risk is of the highest importance for both parties. A number of examples from different countries were discussed:
 - Netherlands: contractors do not take their licenses on time in new projects and with penalties being imposed for projects not being delivered on time, public sector takes on more risk now;
 - Geotechnical and excavations risks in a brownfield section in a developing country was intended to be a private sector risk, but was finally transferred to the public sector. Although the private sector affects rounds of negotiations, it went to the public authority. The latter highlights the importance of competence of negotiation of the public sector, because it was in a developing country.
 - The above highlight that risk allocation is increasingly becoming a stronger strategic tool for the private sector, while pressure is imposed on the government, resulting typically in an arrangement that includes the increase of the level of public subsidies.
 - Finally, it was concluded that the reality of risk allocation has to do with the political sensibility of each case; example Metrolink. If risk is allocated to the private partner, one should ensure the capability to negotiate (political sensibility of the project). Duration of contract does not prevent this behaviour.
 - The key question in the second round was whether PPP incentives work well towards improving outcomes. The answer put forward is that this depends on risk allocation and the rules of the game, namely:
 - Shifting construction risk to private party works.
 - Shifting traffic risk using revenue-based concessions is a more difficult question.

Response: Within BENEFIT allocating demand risk to the private party is considered "appropriate" only if the infrastructure is conditioned to a "high level of control" and the private party has the respective competence to manage demand risk.

- Opportunistic and strategic behaviour from the perspective of clients and contractors was highlighted as a pertaining issue. Traffic demand is systematically and largely over-forecasted for roads; but private companies are not mistaken to enter losing games persistently, as most of the time, they do not lose money. This seems to be related to strategic behaviour and also to having access to adequate financing (present overoptimistic demand forecasts to obtain more money from banks). Moreover, there is also collusion to pursue strategic goals from the public sector (avoiding constraints related to budget and budgetary treatment). Hence, strategic behaviour has to be seen from both sides, private and public, while there is an obvious learning curve for parties involved.

Response: By assessing whether risk allocation has been appropriate, the BENEFIT project reveals such misallocations. In addition, the respective affected indicators appear with smaller values.

- Another point made was related to the reluctant private investments after the crisis, perhaps because when financing is available, they can be faster used with traditional procurement (as PPPs typically require long periods to set up).

Response: The choice of the method of procurement is considered as input for the BENEFIT analysis framework. Selecting traditional procurement over PPP delivery may indeed affect the amount of private investment directed to infrastructure but this is something the lies beyond the scope of the analysis done within BENEFIT. Within BENEFIT, the objective is to assess the likelihood of achieving project target outcomes. This is achieved for both traditional and PPP project delivery.

- Other key issues that emerged from this discussion:
 - The “cost to completion” needs to be clearly defined (e.g. is it life-cycle cost?), as it affects risk allocation.

Response: The cost and time to completion refer to construction cost and time to completion. This is depicted in all BENEFIT Deliverables and in the data collection protocol.

- The PPP term is mentioned throughout BENEFIT, but no further explanation on what type of project is given. Perhaps terminology/definition should be revisited.

Response: Within BENEFIT, a PPP project is considered a project also receiving private financing, with the construction and operation phase bundled and due to the previous provisions, with transfer of some project risk to the private sector.

4.2.3 Topic 1: Discussion on Policy Tool indicators

From the discussion on the importance and relevance of the three Policy Tool indicators (RAI, RRI & FSI), the following key conclusions were drawn from both World Café rounds:

- The BENEFIT Policy Guiding Tool appears useful for considering trade-offs. In an ideal scenario, it could be used by public-sector policy makers to drive decisions by investigating various sensitivities.
- The name of indicators created confusion and side-tracked discussion. Various participants felt that the Policy Tool refers to something “bigger” which is not captured by these indicators, nor the TIRI rating tool in general.
- BENEFIT to consider revisiting the term “policy” indicators with more appropriate terminology in order to avoid confusion (i.e. strategic management indicators).

Other issues brought forward include the following:

- Public guarantees on financing are positively rated through the financing indicator (FSI): The more public guarantees, the better the FSI value, the better the project rating? This means that the most heavily guaranteed projects achieve better outcomes. But is this a good practice?

Response: All indicators have been set-up to represent low cost and low risk as their value tends to 1. In general, for all indicators as their value tends to 1, it implicitly suggests that the project is better positioned to reach its target outcomes. **This does not apply to the so-called “Policy Indicators” (FSI, RAI and RRI).** Taking values on either side of the value range [0,1] does not necessarily suggest better or worse likelihood of achieving performance targets. Their combination of values is what drives the outcome and primarily the trade-off between cost and time to construction completion and traffic and revenue targets. Hence, a project heavily supported by the Public Sector does not imply a good project only based on the value of the Financing Scheme indicator.

- Public guarantees on revenues are negatively rated through the funding indicators (RAI & RRI): The higher the public guarantees, the lower the incentives to perform.

Response: A public guarantee on revenues is represented by lower risk. This does not necessarily imply better or worse conditions with respect to incentives as, as noted above, **it is the combination of values of the three “policy indicators” (FSI, RAI and RRI)** that would drive the incentive for a particular outcome or respective trade-offs.

- When the RAI value is low (more demand-based funding schemes), this does not mean that the project is worse, but that different performance incentives are given to the contractor to achieve project outcomes (cost, time, traffic & revenues).

Response: In order to identify the trade-off that may be considered, one needs to view **in combination the values of the RAI, RRI and FSI indicators.**

- The BENEFIT rating tool is not quantitative enough to characterize this trade off in detail.

Response: The BENEFIT Policy Tool is currently classifying projects into four basic rating categories (A, B_{EX}, B_{EN} and C). B_{EX} and B_{EN} have two notches (+ and -), while A and C have only one additional notch. The overall classification is currently qualitative and corresponds to a specific qualitative assessment of the origin and extent of project vulnerability. Credit Rating Agencies provide project ratings of similar nature albeit with probabilities attached to their various categories which have been made possible to elicit due to the larger project sample that they have had access to compared with BENEFIT.

- Private finance is not needed only for liquidity but is also needed for increased efficiency; but the rating tool is not an efficiency measure.

Response: Credit Rating Agencies consider measures of liquidity and debt bearing capability. The BENEFIT TIRI rating provides a measure of projects' likelihood of attaining their performance targets by assessing their managerial efficiency. A key indicator representing the measure of efficiency is the Cost Saving indicator.

- What is the usefulness of this tool? For example, the tool might point to poor InI, poor FEI and poor GI values. So, as we cannot change the context easily, we try to improve governance. But isn't that what everyone is already trying to do?

Response: The BENEFIT Policy Guiding Tool will also point to the project structure (indicators CSI and RSI) and also to the combination of the Policy Indicators RAI, RRI and FSI. Over time, the ability to influence project structural indicators (GI, CSI and RSI) is reduced. However, by adjusting simultaneously and in combination the values of RAI, RRI and FSI decision makers can drive the project towards specific outcomes (see BENEFIT Deliverable D3.2).

- Local context factors which affect project outcomes are probably missing from the assessment.

Response: Each stakeholder values what is important for their project(s) from their own perspective and priorities. The decision-maker can weigh the TIRI rating scores per project outcome (cost, time, traffic, revenue) and transport mode/infrastructure in accordance with their individual priorities and strategic goals.

4.2.4 Topic 2: Barriers to Data Collection/Sharing in BENEFIT context

The explicit and laborious actions of the BENEFIT project were described to the participants regarding data collection and standardisation from the very beginning of the project, including established contacts with related stakeholders, targeted at overcoming the issues of subjectivity, data quality and comparability (see also Deliverable D2.1).

Key conclusions from both discussion rounds include the following:

- Qualitative analysis of data is difficult due to the subjectivity attached to it. There are two types of subjectivity to be considered herein, i.e. data gaps and interpretation. Interpretation needs to be considered carefully to check conflicts of interest from different stakeholders.

Response: BENEFIT data has been collected based on a specific protocol. This protocol was originally established during the COST Action TU1001. Most BENEFIT partners were both familiar with and contributed to its development. After data collection, all cases were reviewed by a third partner and all information pertaining to indicator calculations was reviewed by the partner responsible for each indicator. In this context, data was thoroughly reviewed and verified (see Deliverables D2.1 and D4.2).

- Lack of transparency of data, especially when it comes to public projects.

Response: The issue with data on public projects is not transparency but systematic recording. This has been explicitly identified in the BENEFIT project.

- Lack of comparability and consistency of data (how was data obtained from different countries and projects harmonised in BENEFIT?).

Response: There is no lack of comparability and consistency of data collected. All data was collected based on a specific protocol (see Deliverable D2.1).

- Parsimony (not increasing the variables collected for each case except if needed)

Response: The protocol, apart from a coded section, was also based on a narrative, with the intention to provide a full understanding of the project. The list of information elements needed was generated and continuously improved over a period of four years starting from the COST Action TU1001. Due to the amount of data needed to complete project cases, the OMEGA Centre project cases were not used in the indicator analysis due to missing information. The same applied for cases collected by partners not previously in the COST Action TU1001. For example, sufficient information could not be collected for Italian project cases.

- Representativeness (PPP vs public, and the lack of rail and waterways, which are strongly represented in the future EU investments).

Response: BENEFIT employed a multi-analyses approach in order to limit the effects of lesser representativeness of its project case sample. A sufficient number of project cases with respect to rail could not be collected. More specifically, the sample of **rail project cases were overall eight**. All were used for the respective qualitative analysis but **only three cases** could be used for indicator calculation and analyses using indicators. Of the five cases for which respective information could not be collected, four were cases from the OMEGA Centre and one case collected within BENEFIT. The remaining 3 projects could not form the basis of reliable analysis within BENEFIT.

Finally, the following issues were identified for future consideration:

- Continuation of data collection after BENEFIT and the continual update of data/case studies.

Response: From its initiation BENEFIT has set up a wiki where all project cases are publically available and may be updated. Based on the wiki modus operandi, new project cases may be added over time.

- Mechanisms to store data and experience for future use.

Response: The BENEFIT wiki provides the primary source of data storage and updating.

- Applicability of data and outputs of BENEFIT to all types of projects; possibility of a future stage to include other types of projects/data to the BENEFIT context (e.g. new technologies, fuel types, energy projects affecting transport infrastructure projects).

Response: The BENEFIT conceptual model is applicable to all sectors. However, the indicators describing the conceptual model for each sector need to be reviewed. Many would need to change and be re-assessed. Most importantly, project cases would be needed to identify the respective combinations of indicators supporting the achievement of particular outcomes.

- Adaptability of the data/outputs of BENEFIT to future changes (e.g. BREXIT and its influence on EU policies).

Response: Changes affecting competitiveness will feature in the Financial-Economic and Institutional indicators.

- Making the data/outputs publicly available?
- Application and use of data/outputs: WHO will use it, HOW will they use it?

Response: While all BENEFIT official outputs are publicly available (all project deliverables have been posted on the project's website) individual data sources and analysis databases may need to be further reviewed in terms of intellectual property issues before they can be released. This is a process that will be considered in the coming months, after the termination of the project. The intention behind BENEFIT's work and applications (e.g. Policy Decision tool) has been their gradual adoption by interested project stakeholders that wish to assess the likelihood of their projects' reaching their intended outcome targets in terms of cost and time to (construction) completion and the attainment of traffic and revenue forecasts.

5 Concluding Remarks

The BENEFIT Final Event was the culmination of a dedicated Dissemination and Exploitation Plan prepared from the onset of the project and aimed at widely disseminating and promoting project results to appropriate target groups, while also setting a solid basis for the project's future exploitation. The Event met successfully the above general objectives, as well as its specific objectives that related to obtaining feedback on its collective results in terms of conclusions drawn, recommendations put forward, and, most importantly, the applicability of the BENEFIT findings and the usefulness and contribution of the BENEFIT Policy Guiding Tool.

Discussion group sessions in the format of both round tables and World Café rounds were proven a beneficial and fruitful exercise for both the BENEFIT Consortium team and the participants. Despite some skepticism expressed by participants on a number of issues, the potential usability and added value of the BENEFIT Policy Guiding Tool was confirmed, albeit limited to certain cases/areas. Interesting discussions were also held on the conclusions derived by the project. In addition, participants provided valuable feedback with regard to issues for further consideration and suggestions for improvements that will be taken into consideration by BENEFIT to the extent possible.

It should be noted, however, that several issues put forward by participants could be attributed to their lack of familiarity with the BENEFIT terminology, research approach and analysis. It is evident that the BENEFIT Policy Guiding Tool – the Transport Infrastructure Resilience Indicator and its rating methodology – have multiple “stereotypes” to overcome as well as past practices in data and project case analysis (lock-in effects).

Without doubt, BENEFIT put forward an innovative approach, generating new knowledge and achievements, while no other similar work has been reported with the thoroughness of the BENEFIT analysis. The latter observation inevitably creates the need for time to be allowed for this new knowledge to be processed, assimilated and applied further.

A final objective of the Final Event was to examine capitalisation opportunities and prospects for the project past its lifetime in order to optimise the value of the BENEFIT tangible and intangible results, enhance their impact and facilitate their integration at multiple levels.

In light of the above, one strong message that was obtained from the Final Event was the **need for clearer communication** of the BENEFIT terminology, results and application features. Therefore, clarifications must be provided with respect to the definitions of terms, addressing the sample employed for the analysis, the specific methodologies applied, as well as the BENEFIT Policy Guiding tool developed. Chapter 4 of the present report constitutes a step in this direction.

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Annex 1. Programme



**BENEFIT FINAL EVENT
14 & 15 September 2016**

Venue: Boudewijngebouw
Koning Albert II-laan 20 bus 2, 1000 Brussel

AGENDA

Day 1: Wednesday, 14 September 2016

- 12:30 – 13:00 Registration
- 13:00 – 13:30 Welcome
- The Importance of Transport Infrastructure Financing
 Prof. Werner Rothengatter, Opening Note
- The BENEFIT Horizon 2020 Project
 Carlo Corposanto, European Commission, DG RTD
- 13:30 – 14:45 The BENEFIT Project: Analyses and Key Findings
 Chair: Prof. Werner Rothengatter
- 14:45-15:00 *Coffee Break*
- 15:00-16:30 Round Table Workshop
 Let's Rate Our Transport Infrastructure Projects!
- 16:30-17:00 The BENEFIT Policy Guiding Tool: Discussion
 Chair: Cesar Queiroz
- 17:30 ***Join Us for Drinks¹***

Day 2: Thursday, 15 September 2016

- 09:30 – 10:00 Introduction to BENEFIT Lessons Learnt & Recommendations
 Athena Roumboutsos, Project Coordinator
- 10:00 – 11:00 Discussing BENEFIT Lessons Learnt & Recommendations: World Café Round 1
- 11:00 – 11:15 *Coffee Break*
- 11:15 – 12:15 Discussing BENEFIT Lessons Learnt & Recommendations: World Café Round 2
- 12:15 - 13:00 Discussion Summary, Conclusions and Recommendations
 Chair: Dejan Makovsek
- 13:00- 13:15 *Closing*
- 13:15 – 14:00 *BENEFIT Goodbye Lunch***

End of BENEFIT Final Event

¹ La Belle Epoque, Rue du Progrès 5, B-1210 Bruxelles, <http://www.lavraibellepoque.be>

Annex 2. Presentation of Day 1

Business models for ENhancing funding and Enabling Financing of Infrastructure in Transport

Final Event
Brussels, 14 & 15 September 2016



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The BENEFIT Team



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OULUN YLIOPISTO



University of the Aegean



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Department of Transport and Regional Econ
University of Antwerp



PA&M

Public Administration & Management
University of Antwerp



Contents

- Introduction
- The BENEFIT Matching Framework
- Findings
- Transport Infrastructure Resilience Indicator – Rating the project outcome targets



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Introduction



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BENEFIT Goals

- Lessons Learned
 - Limitations to Funding & Financing Schemes
 - Impact of Crisis
- * Ex-ante – Policy Guiding Tool



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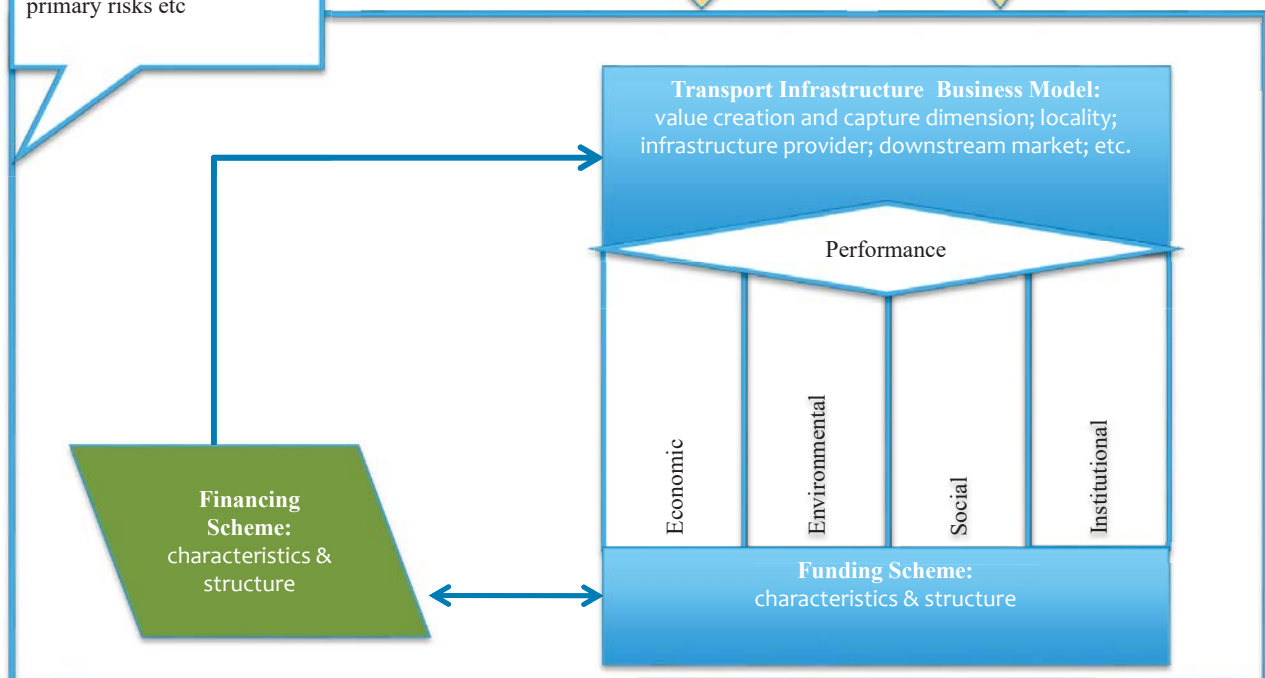


The BENEFIT Concept

Governance, Procurement, Contractual Arrangement:
initiating public authority & decision and regulating ability; the procurement process and the contractual agreement; allocation of primary risks etc

Implementation Context:
societal; economic-financial; investment climate; political, policy and administrative capacity; legal and regulative; etc

Transport Mode Context:
transportation function; exclusivity; link vs node, respective regulations etc.



The BENEFIT Matching Framework

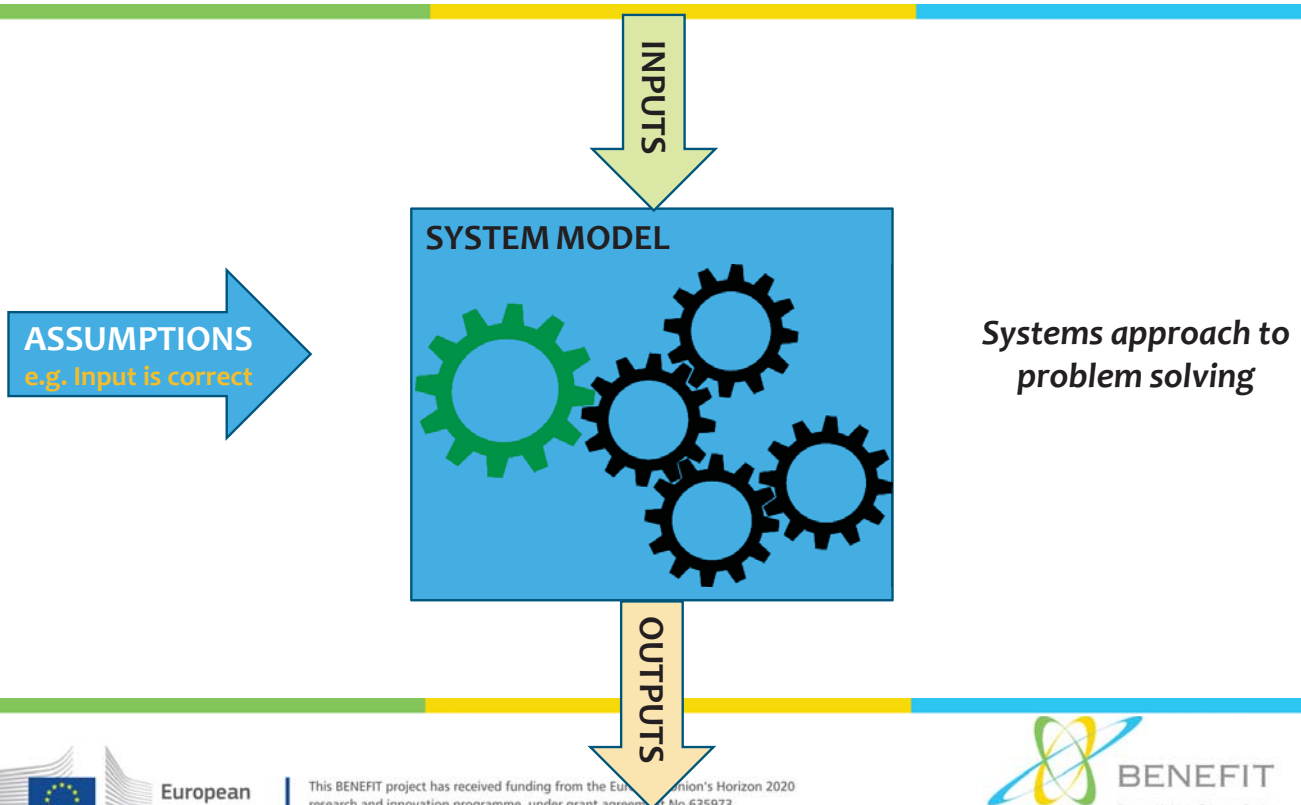


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Basic concept



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Model inputs

- Goals:
 - Transport-related (e.g. relieving congestion, increasing mobility, etc.)
 - Wider policy goals
- Method of procurement (Public vs PPP)
- Defined goals determine:
 - Project technical characteristics:
 - type of infrastructure
 - scale, size
 - materials, etc.
 - The magnitude of the investment to be made

Model outputs

- Level of achievement of:
 - project management targets (i.e. “iron triangle” considerations)
 - forecast traffic
 - forecast revenues
 - transport goals
 - other benefits (economic, environmental, societal, institutional)

Model attributes and assumptions

➤ Model attributes:

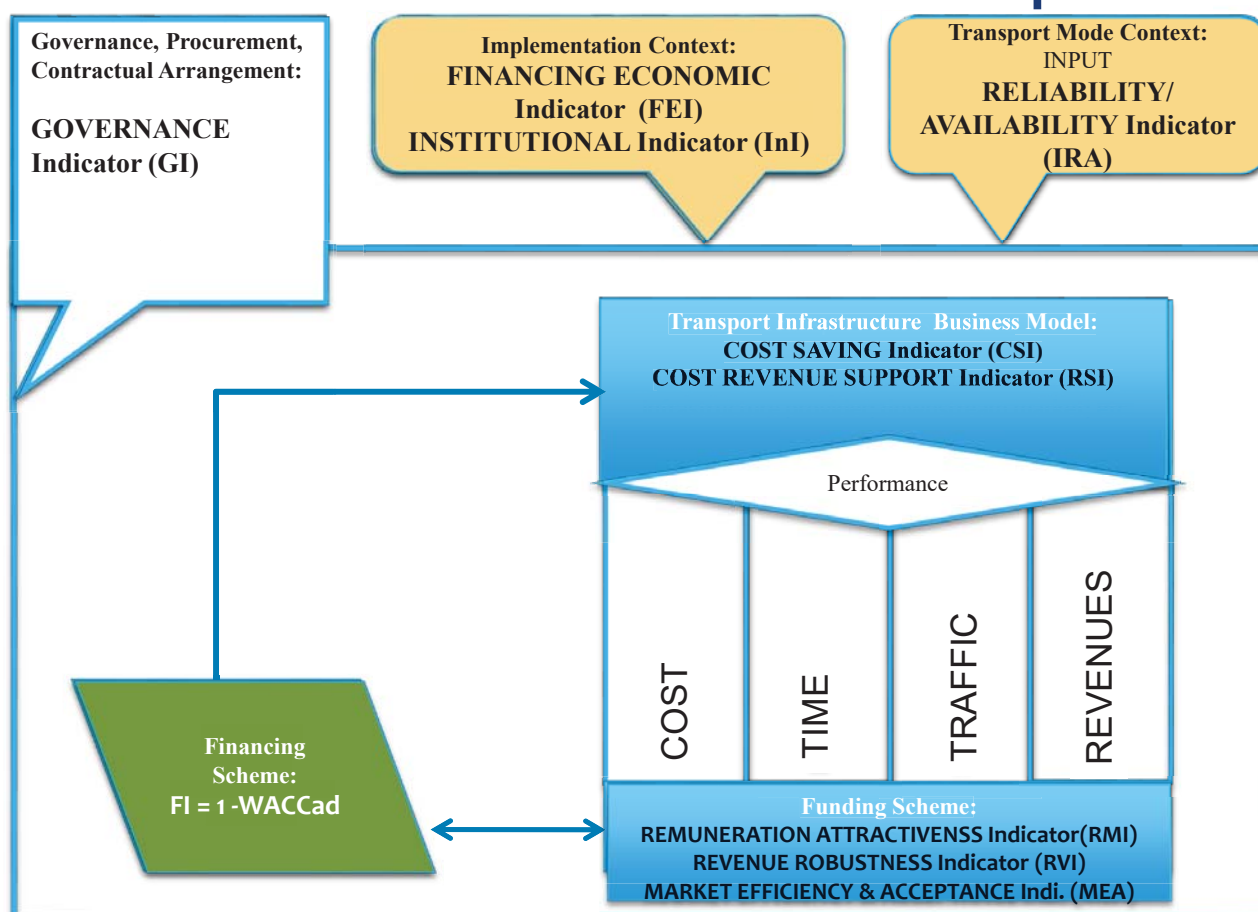
- Structural, Comparative, Dynamic and Heuristic

➤ Model assumptions (selection):

- Agency-independent and stakeholder-agnostic
- Project promotion through rational decision-making process
 - Clear raison d'être
 - Cannot consider politics
 - Irrational/suboptimal decisions shown as system imbalances
- PPP and publicly financed projects are treated similarly
- Optimal project structuring based on low-cost and low-risk principle (risk allocation based on competence)

Foundations

The BENEFIT Indicator Space



Implementation Context Institutional Context Indicator (InI)

Variables	Composition
Political capacity, support and policies	Political stability & absence of violence index ; Control of corruption index; Democracy index
Legal and regulatory framework	Rule of Law Index; Regulatory quality index; Liberalization of transport markets (The OECD indicators of regulation in energy, transport and communications (ETCR) isolating the indicators related to transport)
Public sector/public sector capacity	Government effectiveness index; Government efficiency score (part of the global competitiveness index);

Implementation Context

Financial-Economic Context Indicator (FEI)

Variables	Composition
Macro-economic situation	Macro-economic environment score (part of the global competitiveness index)
Financial conditions	Financial market development score (part of the global competitiveness index)



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Transport Mode Context (IRA)

	Variables
Transport Mode Context	Reliability; Availability
System Inputs	Items that do not vary
	Type of infrastructure
	Size
	Location



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Business Model

Cost Saving Indicator (CSI)

Variables	Composition
Ability to construct	Level of civil works/ technical difficulty; Capability to construct; Construction Risk Allocation
	Assessment of optimal construction risk allocation
Ability to monitor /control/plan	Public/Contracting authority Capability in planning, monitoring
Adoption of Innovation	Innovation (binary)
	Successful, or not, application of innovation
Life Cycle Planning	Life cycle planning- bundling of phases and maturity of planning
Ability to operate	Capability to operate; operation risk allocation



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Business Model

Revenue Support (RSI)

Variables	Composition
Level of Coopetition (or Control)	Business Scope; Project Exclusivity; network configuration impact
Potential to secure revenue/demand through (1) prime infrastructure (2) brownfield (3) other transport infrastructure	Greenfield ; brownfield; other transport infrastructure
	Demand / Revenue Risk Allocation
	Capability to operate
	Demand Risk allocation - Assessment of demand risk allocation
Revenues from other non-transport activities	Share of non-transport activities based on project revenue description +



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Funding Scheme

Remuneration Attractiveness Indicator (RAI)

Variables	Composition
Cost recovery	Expected revenues as % of full project costs;
Risk of income	Share of each income stream on total revenues; Type / Risk of each income source

Revenue Robustness Indicator (RRI)

Variables	Composition
Cost coverage	Expected revenues as % of full project costs
Risk of revenues	Share of each revenue stream on total revenues; Type / Risk of each revenue source

Funding Scheme Market Efficiency & Acceptability (MEAI)

Variable	Composition
Market and environmental efficiency	Pricing scheme; Transport mode; Indexation
Public acceptability of funding scheme	Type of Funding Agent(s); Revenues allocated to desirable objective

Financing Scheme Indicator (FSI)

Indicator

1- WACC^{adjusted}

Debt capital / Loans; Equity capital; Type of financiers (banks, institutions, etc.)



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Governance Indicator (GI)

Contractual flexibility & control

Enabling updating of service terms and enabling price changes

Enforcing termination without cause

Efficiency/ effectiveness

Encouragement of competition between bidders

Integration of design and construction

Allowing incentives for performance

Sharing of revenue risks

Collective estimation of investments

Rising costs risk allocation to and completion penalties for the contractor

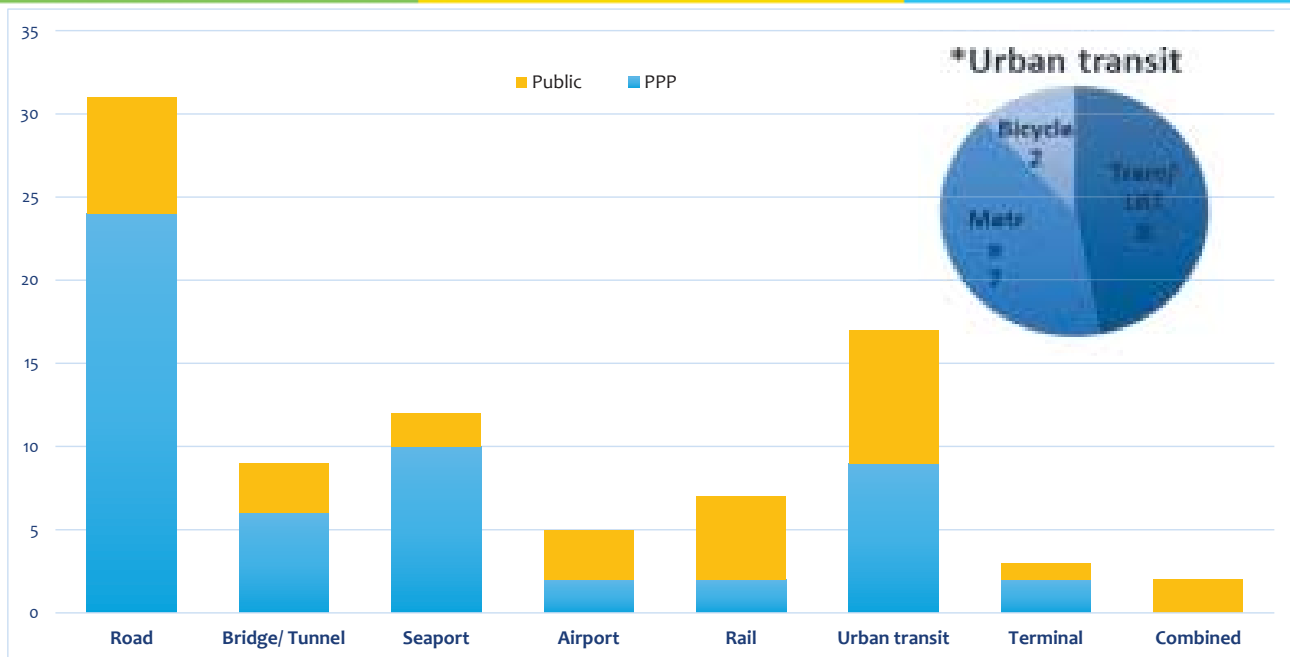


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Data set

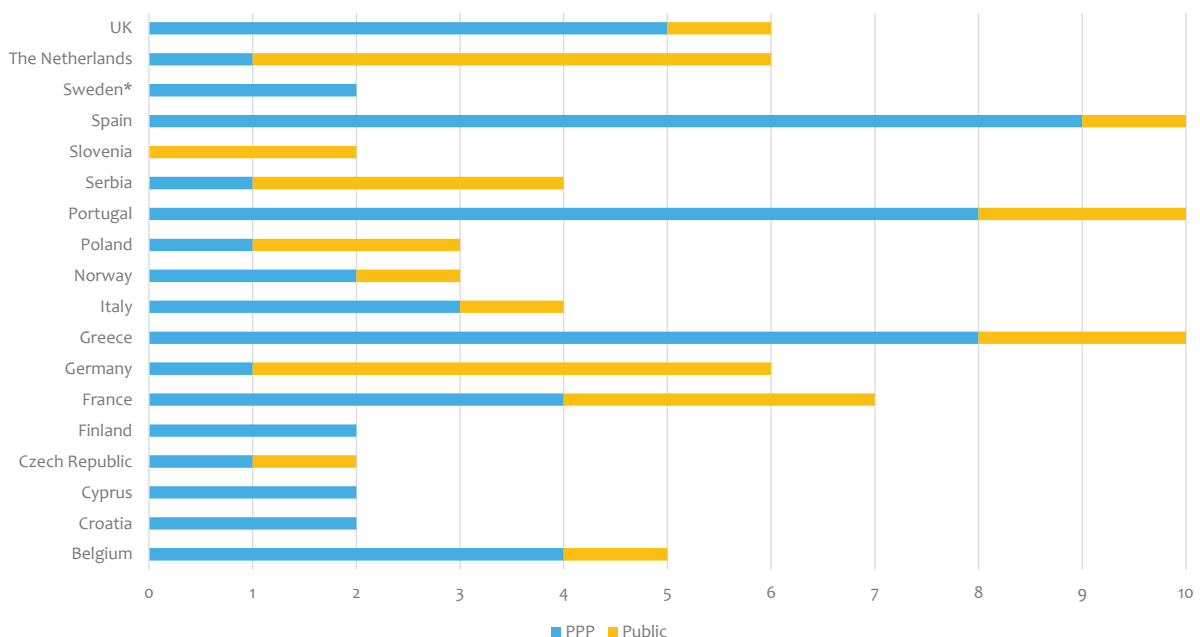


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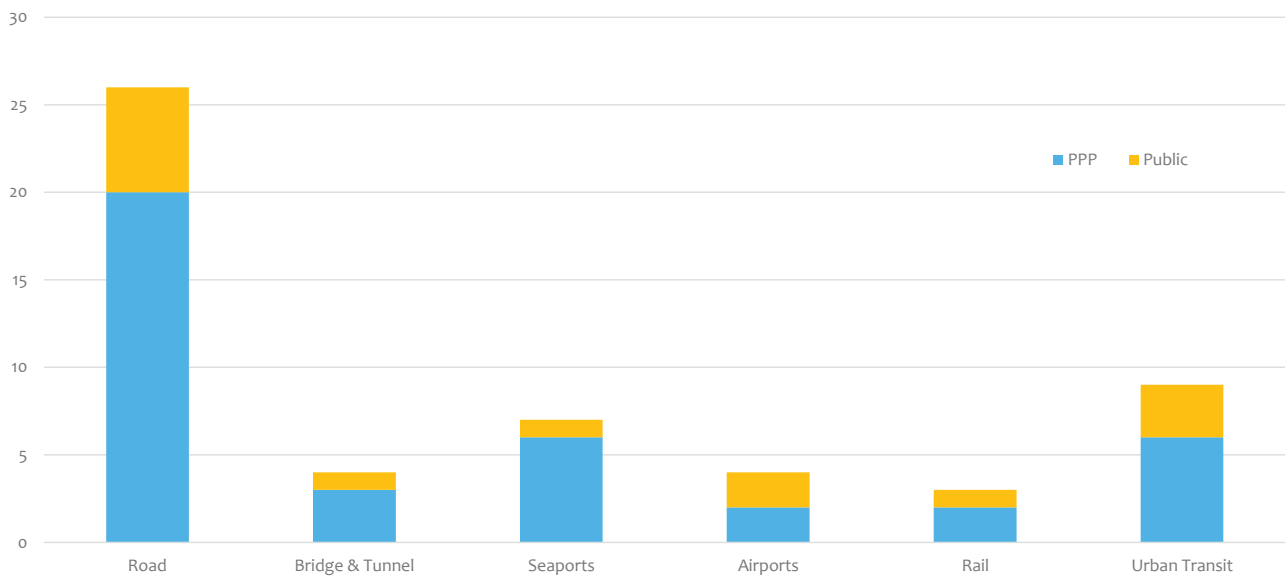


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Data set expressed in Indicators

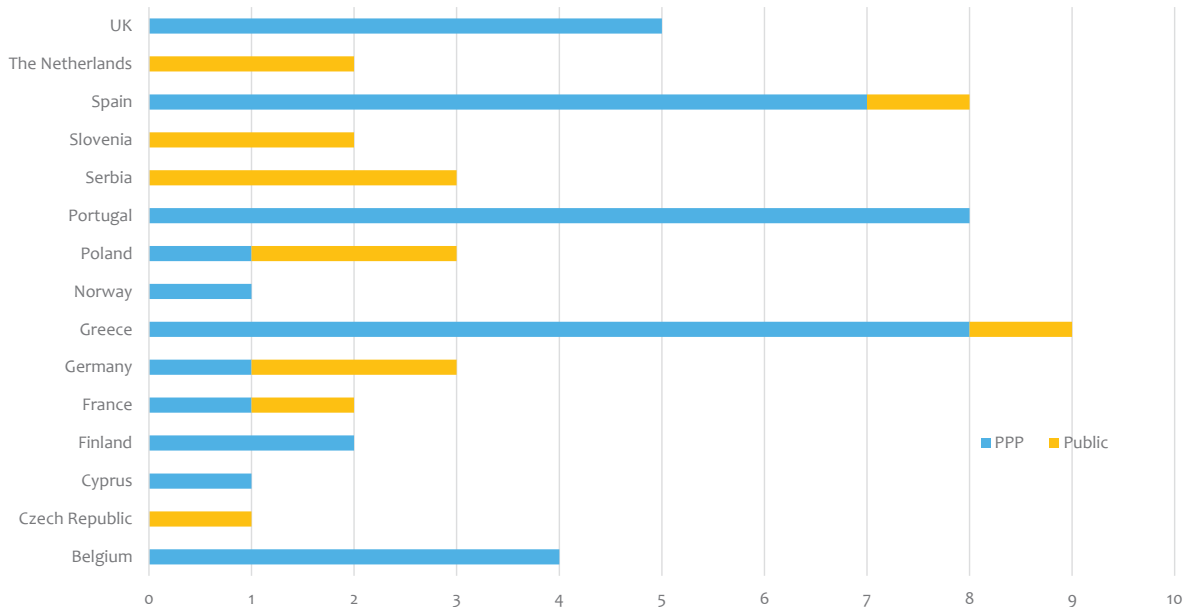


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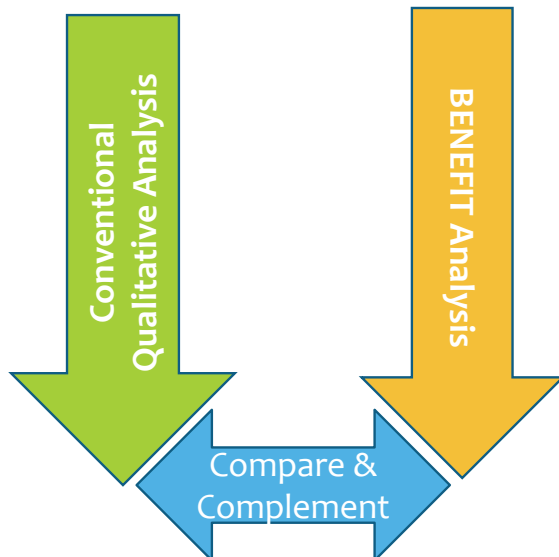
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Analysis Methodological Approach

Case Studies



- Per outcome
- Financing Scheme



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	Desc. Stats	Qualitative Analysis			Limitations	Indicator Quantitative Analysis		
	All cases				Selected Cases	Indicator Cases		
						fsQCA	IA	Ec/m
Full Sample	✓					✓	✓	✓
Completion before Crisis						✓	✓	✓
Completion after Crisis						✓	✓	✓
Road		✓	✓	✓		✓	✓	
Bridge/Tunnel		✓	✓	✓				
Urban Transit		✓	✓	✓			Analyses Conducted	
Rail		✓	✓	✓				
Airports		✓	✓	✓				
Ports		✓	✓	✓		✓		
Non-Roads						✓		

**Analyses
Conducted**



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Findings



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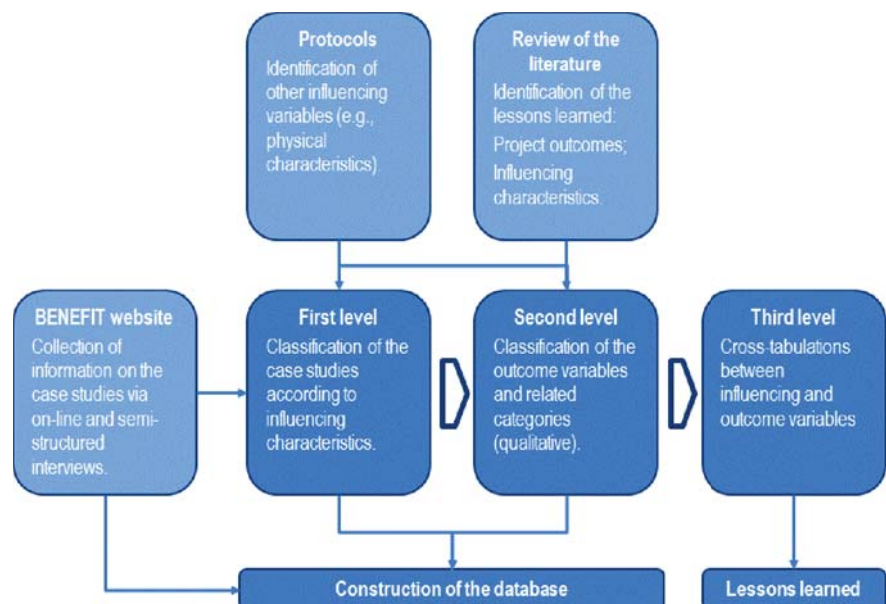
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Descriptive Statistics

Methodology

- * Analysis performed in form of a stepwise approach (see figure).
- * The database assembled included 81 case studies, of which 53 PPP and 28 public (road relative majority, 43%).
- * Identification of the influencing variables done on the basis of preliminary literature review.
- * Corresponding influencing variables identified and selected from the sections of the protocols.
- * Preliminary check on data availability performed on both quality and quantity of available information.



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Descriptive Statistics

Findings

- * PPPs seemed to meet more the investment cost targets than public financed projects.
- * PPPs are more inclined to overestimate forecasts at a higher rate, compared to the public financed ones. This result might be potentially explained by the higher charges levied to the users to achieve cost-coverage.
- * Projects featuring a low level of complexity could be more likely to show outcomes that materialise according to forecasts. This did not apply to size of the investment. Complexity was analysed through different influencing variables, including type of development (greenfield; brownfield or mixed), physical description (node and link) and the size of the investment (in ranges per value of the investment) .
- * User-specific projects (such as dedicated railway lines, freight terminal, etc.) are more likely to perform better than those conceived for mix use (i.e. motorways, non-dedicated railways, etc.).
- * Projects seem to perform better when boundaries are well delineated on spatial, technical (in relation to complexity) and modal (in terms of specialisation) aspects.



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Qualitative Analysis

- * Ad hoc
- * BENEFIT Matching Framework
- * Indicator Assessment



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Qualitative Analysis: Roads

- * Dataset

- * 31 projects total, 24 PPP & 7 Public
- * Located in 15 European countries
- * Awarded from 1987 to 2012
- * 13 Greenfield, 8 Brownfield, 10 Both
- * 9 projects below 400 M€, 13 between 400 and 1000 M €, 9 above 1000 M €



- * Qualitative analysis performed in two stages:

- * General assessment
- * The impact of crisis



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Qualitative Analysis: Roads Findings

- * **Cost and time overrun:** majority of projects in **southern countries**
- * **PPP road projects: better performing** regarding cost and time overrun
- * **Brownfield PPP** and **greenfield Public** road projects: delivered more successfully regarding cost
- * **Cost overrun** (mainly medium sized projects): scope changes, expropriation and archaeology problems, economic crisis, other technical issues
- * Small projects **more delayed:** expropriation problems, design changes, technical and archaeology issues, but also bankruptcy of the contractor
- * **Traffic forecast** typically **more optimistic** for **PPP projects**. Traffic overestimation more present on **medium and large size** projects
- * **PPP road projects: better traffic performance** when delivered as **brownfield projects**. No similar observation can be made for public projects



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Qualitative Analysis: Roads

Impact of Crisis Findings

- * **The consequences of the crisis** on the poorly performing projects: renegotiation, reduced scope, increased Gvmt participation, user paid tolls, claims, time overrun, drop in AADT and revenues, imbalance of risks sharing, and cash flow difficulties.
- * **Critical success factors**: **long term planning**, **top priority** projects, **realistic traffic** projections, **medium size** projects, **strong regulatory body** and Gvmt support, **responsible and well experienced concessionaire**, **innovations**
- * New PPP deals in Europe since 2008 (based on extended proprietary database):
 - * Shift from demand based to availability based funding scheme
 - * New countries with high institutional development and positive macro-economic projections have entered the market.
 - * Countries typically present have reduced their participation or even exited the market.



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Qualitative Analysis:

Bridge and Tunnel Projects

Analysed cases:

- * 6 tunnels
- * 4 bridges

Infrastructure of bridges and tunnels is inherently exclusive, monopolistic in nature, facilitating the crossing of natural barriers

- * relatively long duration of the period from conception to completion
- * projects planned and financed by the private party (PPP model) are planned rather realistically in terms of deadlines of construction, and prudently in terms of construction costs and future revenues



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Qualitative Analysis: Bridge and Tunnel Projects

- * PPP Projects are typically underestimated in the range of forecasted vehicles' traffic
- * the project political sensitivity has a huge repercussion on projects timing
- * bridges and tunnels need support on a governmental/national level (locally driven usually fails)
- * Resilience on crisis
 - * Minor decline of traffic in comparison to whole country
 - * Rather quick recovery of PPP private partners after crisis



Qualitative Analysis: Urban Transit

- * Methodology
 - * A sample of 13 cases:
2 metros, 9 tramways and 2 free bike sharing systems
 - * Some special features of public transport:
 - * Assessment of a specific line is hard to isolate from the whole network
 - * Operation phase is as important as construction phase and link between the them is frequently a source of trouble

How successful studied projects are?



How outcomes or characteristics justify this choice?



Are indicators able to translate these phenomenons?

Qualitative Analysis: Urban Transit

- * Findings

- * Construction:

- * Cost overruns and time delays are rather well captured by snapshots
 - * Projects significantly over budget often suffer from a lack of initial preparation

- * Operation:

- * Revenues sources in public transport show a little diversification (they are directly linked to the level of ridership)
 - * Contracts with high level of integration (DBOM), which are long-term contracts, are often too strict to answer to changes in user needs
 - * Risk sharing, penalties... defined in contract have to be seen as theoretical

Qualitative Analysis: Rail

- * Limited sample of 1 PPP case and 3 public-financed cases, but yet...
- * ...many types of rail systems:
 - * Inter-city, High-speed, Local inter-urban, Urban light rail, Metros and underground systems, Dedicated freight systems...
- * Rail PPPs cannot be bundled under one category!
- * Rail systems require substantial integration of other infrastructures and radically affect the surrounding built environment, because stations, terminals and shunting yards take lots of space and are capital intensive.

Qualitative Analysis: Rail

Matching framework outcomes (opening or beginning of operation)	Combiplan Nijverdal (public)	The Hague Central Station (public)	Liefkenshoek Rail Link (PPP)	Malpensa Airport Rail Link (public)
Cost	Over budget	As expected	As expected	n.a.
Time	Delayed	Delayed	Delayed	Delayed
Traffic volumes	Below forecast	As expected	As expected	n.a.
Transport goals	As expected	As expected	Below expectations	n.a.
Other economic outcomes	As expected	As expected	As expected	n.a.
Social outcomes	As expected	As expected	As expected	n.a.
Environmental outcomes	As expected	As expected	As expected	n.a.
Institutional outcomes	As expected	As expected	As expected	n.a.
Renegotiations	None	None	None	n.a.

Qualitative Analysis: Ports

- * In general, all projects can be considered as successful cases apart from one.
- * Despite the projects share a common mode (ports), it is difficult to draw conclusions given the differences in each project.
 - * Two out of six ports are focused on passenger's transport whereas the rest of ports are focused on traffic of containers and cargo.
 - * Each case took places in different countries and under different circumstances.
- * The causes behind the success or failure of these projects seem to rest on the foundation of the **aim of the projects**.
- * Before analysing important issues related to the tendering process or the traffic forecast among other aspects, the **analysis of the strengths and real necessities** of the projects seem to be key to the future success; at least in ports projects.

Qualitative Analysis: Airports

- * Benefit airport sample is small and diverse.
- * Delivered during a period where two major disruptive elements can be identified in the European air transport business – the growth of the low-cost carriers and the economic crisis.
- * Airports are complex projects requiring **competent public authorities** to achieve construction time and cost outcomes.
- * Construction failures are main reason pointed out for cost overruns and delays.
- * Additional reasons are uncertainties over funding and award value.
- * The major factor of good airport project outcomes in terms of traffic and revenue is **airport connectivity**
- * Traffic outcomes are naturally influenced by implementation context, but demand risk allocation provides incentives or disincentives for the operator to manage this.
- * Airport business models have a wide range of value adding activities/services - requiring **competent operators**
- * Flexibility and entrepreneurial freedom in business development are critical for airports in dealing with an economic crisis.
- * Implementation context also needs to be compatible with these levels of operating flexibility



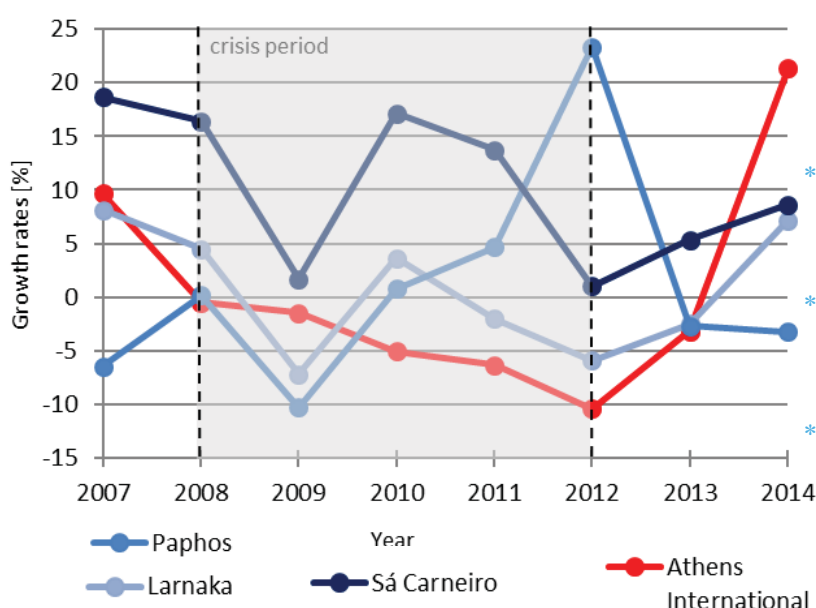
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Qualitative Analysis: Airports

Yearly air passenger growth rates (%)



- * Benefit airports represent size effects found in literature on impact of crisis:
 - * Smaller-sized airports feel the crisis later
 - * Traffic growth rates of smaller-sized airports fall more abruptly
- * Strong low-cost entry and increased tourism activity allowed positive growth rate during the crisis (for one case)
- * Revenue levels were kept as expected in the larger airport through promotions, incentives, and enforcing cost controls
- * Beyond the traffic, size seems to be representing:
 - * **Connectivity and network impact** – the extent to which it can be considered a hub
 - * Whether the airport is supporting the travel flows of a stronger regional economy



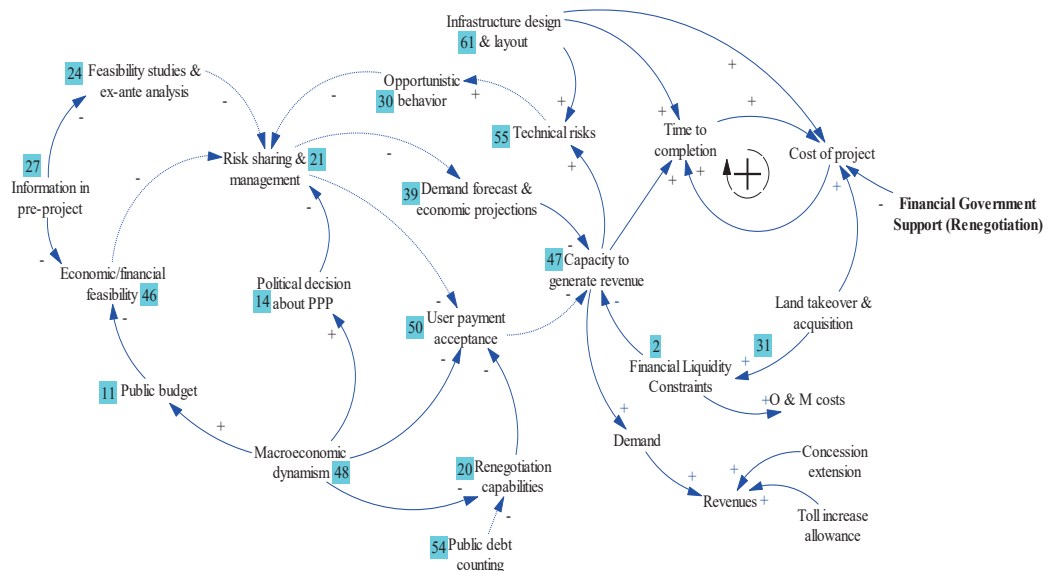
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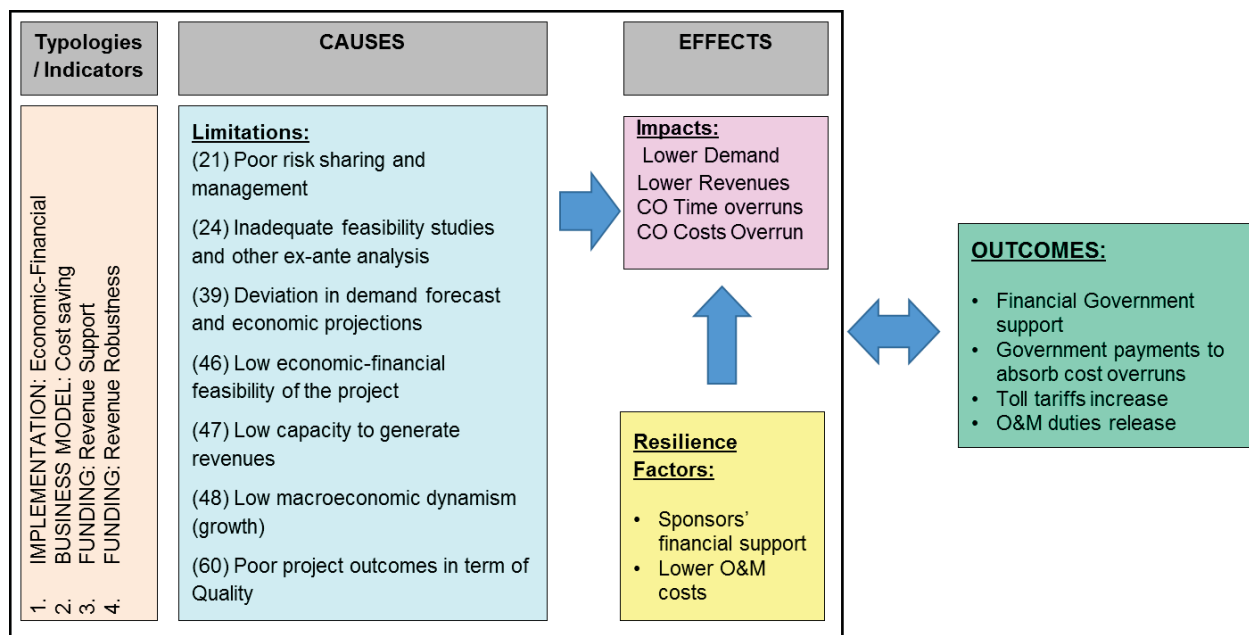


Limitations: Cause & Effect mapping (Causal Loops)

Radial 2



Limitations: Cause & Effect mapping (Findings)



Indicator Analysis: fuzzy set Qualitative Comparative Analysis

* fs QCA

* software: fs QCA 2.5

* finds similarities & differences in outcome across comparable cases by comparing configurations of conditions

* **small N cases** or **intermediate N cases** (40-50 cases)



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Indicator Analysis: fsQCA- Full sample

H: High, L: Low, G: Good

U: Unfavorable, P: Poor

TARGET	Combinations of factors explaining success and failure					
On Cost	H ability to save costs	G institutional context	H ability to cover costs through revenues	Politically attractive & acceptable funding scheme	G contract	Heavily subsidized by Public
Over Cost	Mainly privately financed	U country's financial characteristics	U contract			
Over Time	P contract	L risk & H cost coverage remuneration scheme				
On Traffic	H ability to save costs	L risk & H cost coverage remuneration scheme				
Below Traffic	G contract	U institutional context	Non attractive remuneration scheme to investors			
On Revenues	G contract	H ability to cover costs through revenues	G institutional context	Mainly privately financed		



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Indicator Analysis: fsQCA- Completion after crisis sample

TARGET	Combinations of factors explaining success and failure		
On Cost	G institutional context	G financial-economic context	
Over Cost	Mostly publicly financed	U institutional context	Not attractive remuneration scheme
Over Time	1. U institutional context		
	2. P contract		
On Traffic	G institutional context	L risk & H cost recovery remuneration scheme	G contract
Below Traffic	Heavily subsidized by Public	U institutional context	H risk remuneration scheme
On Revenues	G institutional context	G contract	



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Indicator Analysis: Importance Analysis - Approach

Sub-samples Analysed:

Whole Sample (51 cases)
PPP Sample (35 cases)
Road Sample (22 cases)
Completion of Construction before the Crisis (2008 year-mark)
Completion of Construction after the Crisis (2008 year-mark)

Analysis method characteristics

Importance as a function of probability, influence and uncertainty.
Tests for causality and Bayesian networks



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Indicator Analysis: Importance Analysis - Findings

Cost	Time	Revenue
Projects terminated after crisis		
1. The institutional context 2. Exclusive position in the network, and business development orientation 3. Contractual governance 4. The ability to save costs	1. Contractual governance 2. The remuneration Scheme 3. The institutional context 4. Exclusive position in the network, network and business development orientation	1. Contractual governance 2. The remuneration Scheme

Indicator Analysis: Econometric Models

- * Two models were conducted:
- * Logistic model
- * Bivariate probit
- * In both models, the endogenous variables take discrete values:
- * These models allow to treat the endogenous variable as a probability

$$revenue \begin{cases} 1 & \text{if revenue is exceeding forecast or as forecasted} \\ 0 & \text{if revenue is below or far below forecasted} \end{cases}$$

$$traffic \begin{cases} 1 & \text{if traffic is exceeding forecast or as forecasted} \\ 0 & \text{if traffic is below forecasted} \end{cases}$$

$$cost\ underrun \begin{cases} 1 & \text{if cost is below budget or on budget} \\ 0 & \text{if cost is over budget} \end{cases}$$

$$time\ underrun \begin{cases} 1 & \text{if time is ahead of schedule or on time} \\ 0 & \text{if time is delayed} \end{cases}$$

Indicator Analysis: Econometric Models - Findings

- * The results vary depending on the model analyzed.
- * Both, both endogenous (i.e. “IRA”, “governance”, “revenue support”, among others) and exogenous (i.e. the macroeconomic context, the economic crisis) factors explain the probability of success; both in term of cost underrun and time underrun; as well as in terms of revenue and traffic forecasted.
- * Two time periods can be distinguished:
 - * when focusing on the time lapse between the moment when the project is awarded and period when the infrastructure has not been finished yet, the biggest attention should be oriented to monitor the following factors: “ira”, “governance” and “revenue support”.
 - * when analyzing the long term, “ira”, “cost savings”, “remuneration attractiveness” and “revenue robustness” provides the highest effect on the probability of success in term of revenue and traffic.

Policy Dialogues

- * Organized sessions with expert practitioners from different groups, with different interests
- * Presentation, dissection and discussion of pilot cases
- * Held at two different project stages when there would be a critical need for bridging the project's research and the world of practitioners
- * To grasp and confirm insights on their position and reactions in face of different transport project situations
- * To test and validate the different elements of the Decision Matching Framework, paving the ground for the final BENEFIT recommendation

First Policy Dialogues

Stakeholders' reaction to the matching framework

Feedback and guidance for framework development

Second Policy Dialogues

Supporting and clarifying findings based on the matching framework

Supporting the final BENEFIT policy recommendations

Policy Dialogues

- * Feedback from first Policy Dialogues related to:
 - * The stakeholder-neutrality of the model
 - * The complementary, supplementary and feedback effects between indicators and outcomes
 - * The need for a project narrative to accompany the framework collection of numerical indicators
 - * The need for complementarity of the BENEFIT decision-support tool with the widely accepted infrastructure appraisal models
 - * The challenge of representing the strategic behavior of actors with the framework
 - * The representation of the local political environment
 - * The difficulties in comprehensively representing the risk sharing in projects with the framework

- * Feedback from second Policy Dialogues:
 - * Overall, participants' opinions are compatible with BENEFIT findings
 - * Participants mentioned additional indicators to explain project outcomes:
 - * Political support for the project
 - * Project size in terms of investment and complexity
 - * Participants identified indicators that are relevant for improving project resilience to economic crises:
 - * Implementation context
 - * The revenue support aspect of the business model
 - * Governance including its efficiency and effectiveness, as well as the flexibility aspect
 - * For unique structures such as bridges and tunnels, the cost saving aspect of the business model
 - * For enhanced business models present at airports, the financing scheme, and the revenue robustness



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Road Infrastructure

	Cost	Time	Traffic	Revenue
FEI	Strong positive or negative influence	Positive or negative influence (limited by GI and InI)	Very strong Positive or negative influence	
InI	Pre-requisite	Pre-requisite (Acts in combination with GI)	High value may limit effect of FEI	
GI	Needed (compensates for low CSI)	Pre-requisite (Acts in combination with InI)	High value may limit effect of FEI	Support: High Value
CSI	Needed (compensates for low GI)	Needed	High value may limit effect of FEI	Support: High Value
RSI	Support			Expected for High Value
RAI		Driver: Low values	High value may limit effect of FEI	Support: High Value
RRI		Driver: Low values		Key Indicator
FSI	Driver: High values			Expected for High Value



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Bridge & Tunnel

	Cost	Time	Traffic	Revenue
FEI	High Value important. Low Values may be off-set by high values of the other indicators			
InI	High Value	High Value	High Value (prerequisite for Low RAI)	High Value (prerequisite for Low RAI)
GI	High Value	High Value	High Value (prerequisite for Low RAI)	High Value (prerequisite for Low RAI)
CSI	High Value	High Value	High Value (prerequisite for Low RAI)	High Value (prerequisite for Low RAI)
RSI	High Value (High LoC Important)	High Value (High LoC Important)	High Value (High LoC Important)	High Value (High LoC Important)
RAI		Low Value (May compensate for RRI)		
RRI		Low Value (May compensate for RAI)		High Value
FSI	High Value	High Value	High Value	High Value



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BENEFIT
Business Models for Enhancing Funding
& Enabling Financing for Infrastructure in Transport

Urban Transit

	Cost	Time	Traffic	Revenue
FEI				Only with respect to advertisements
InI	High Value	High Value	High Value	High Value
GI	High Value	High Value (May be combined with CSI)	High Value (May be combined with CSI)	High Value
CSI	High Value	High Value (May be Combined with GI)	High Value (May be Combined with GI)	High Value
RSI	High Value	High Value	High Value (With emphasis on LoC)	High Value
RAI			Support	High Value
RRI			Prerequisite	Prerequisite
FSI				
	All indicator above should have high values			At least two of the above indicators should bear a high value.



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BENEFIT
Business Models for Enhancing Funding
& Enabling Financing for Infrastructure in Transport

Airports

	Cost	Time	Traffic	Revenue
FEI	High Value important	High Value important	High Value - Connected to international Financial – Economic conditions	
InI	High Value	High Value	High Value	High Value
GI	High Value	High Value	High Value	High Value
CSI	High Value	High Value	High Value	High Value
RSI	High Value (High LoC Important)	High Value (High LoC Important)	High Value (High LoC Important)	High Value (also alternative revenues)
RAI		Low Value (May compensate for RRI)		
RRI		Low Value (May compensate for RAI)	High Value	High Value
FSI	High Value	High Value		



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Ports

- * Cost and time to completion: high values of the Cost Saving, Governance, Revenue Support and Institutional indicators *but* positive outcomes may be reached even if these conditions are not met.
- * Traffic and revenue outcomes depend on the international strategies of shipping lines and hinterland connections
- * Financial–economic should refer to the logistics chains
- * **BENEFIT Indicators need to be adjusted for Ports**

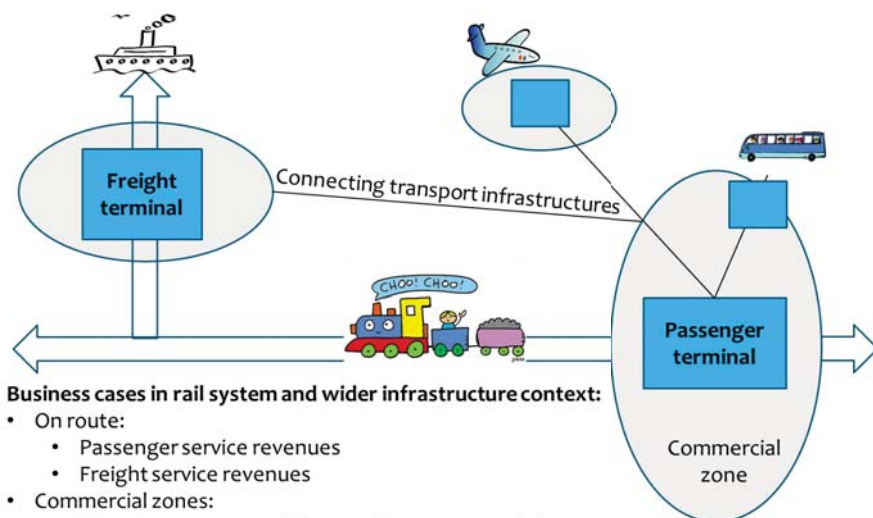


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Rail



- * N/A
- * **Urban Transit?**
- * **FEI like Airports?**

Business cases in rail system and wider infrastructure context:

- On route:
 - Passenger service revenues
 - Freight service revenues
- Commercial zones:
 - Shopping, accommodation, parking, space rental
 - Warehousing, terminals, logistic hubs
 - Land development:
 - Housing, commercial construction, industrial construction

P. Leviäkangas

45

July 2014

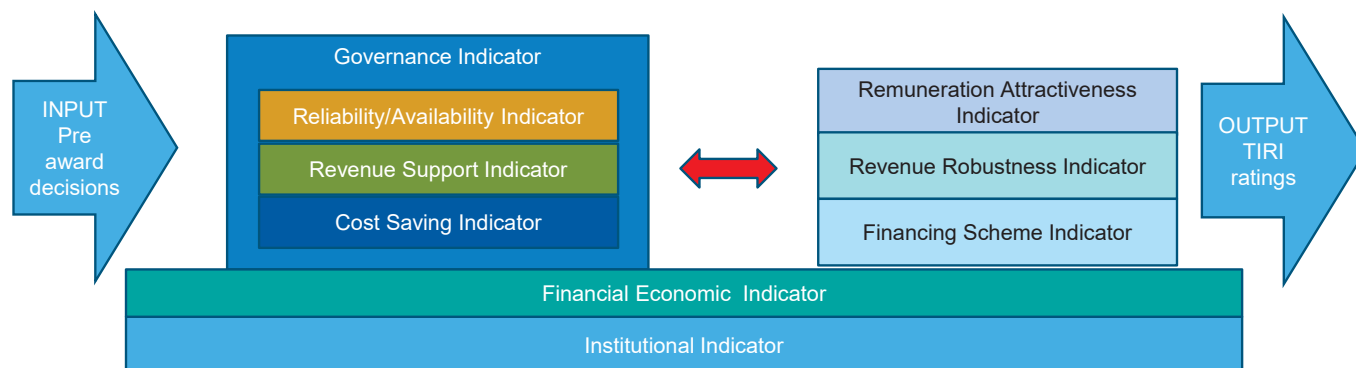


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The indicator project performance structure

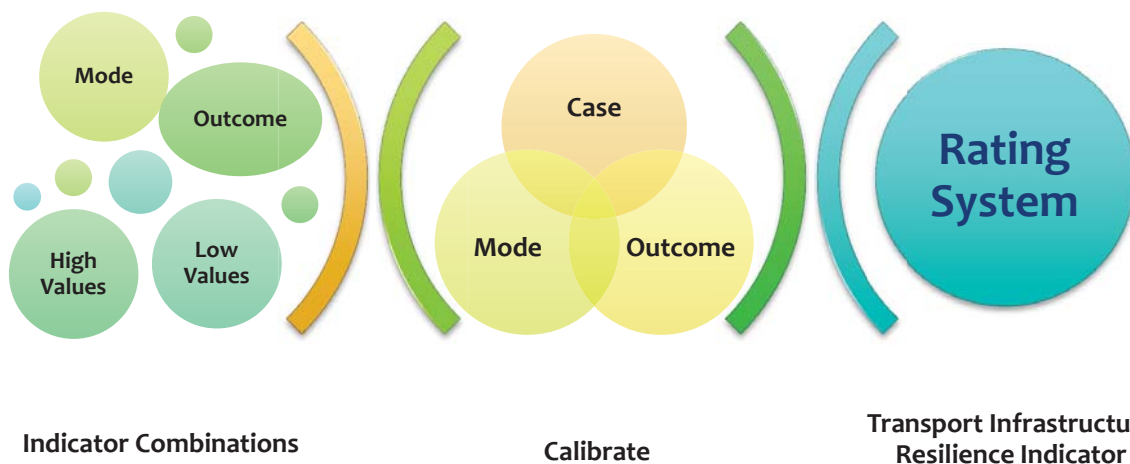


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Indicator combination for performance



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Transport Infrastructure Resilience Indicator

- * “the ability of a Transport Infrastructure project to **withstand**, **adjust** and **recover** from changes within its structural elements with respect to its ability to deliver specific outcomes (such as cost and time to completion, expected traffic and expected revenue targets)”.



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Rating System

Rating	Description
A	Very high likelihood of achievement of outcome
B	Average likelihood of achievement of outcome
B _{EX}	A rating describing a fairly robust internal project structure but subject to exogenous vulnerability
B _{EN}	A rating describing a project implemented under largely positive exogenous conditions but with internal structure vulnerabilities.
C	Low likelihood of reaching of achievement of outcome



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Let's try it out!!!



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Annex 3. Presentation of Day 2

Business models for ENhancing funding and Enabling Financing of Infrastructure in Transport

Final Event
Brussels, 14 & 15 September 2016



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The BENEFIT Team



Road and Bridge
Research Institute



UNIVERSITY of OULU
OULUN YLIOPISTO



University of the Aegean



The Bartlett School of Construction & Project Management

UNIVERSITY OF TWENTE.



TPR

Department of Transport and Regional Econ
University of Antwerp



PA&M

Public Administration & Management
University of Antwerp

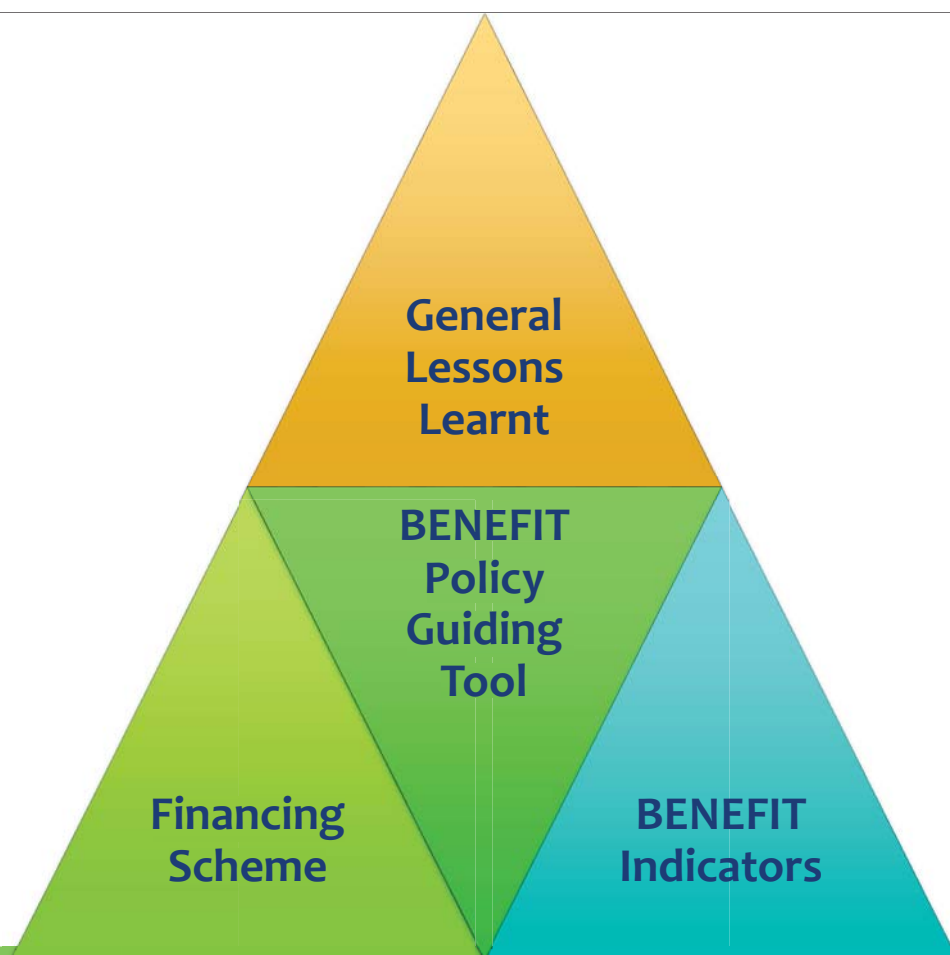


Summary of Lessons Learnt



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BENEFIT Indicators

- * **No single indicator (factor)** of the project system that can define the likelihood of achieving an outcome target but rather **combinations of them**;
- * There is **no single combination of project indicator (factors)** that can secure the successful attainment of all project outcomes simultaneously;
- * **Outcome targets are not achieved by the same combination of factors across all modes** of transport.



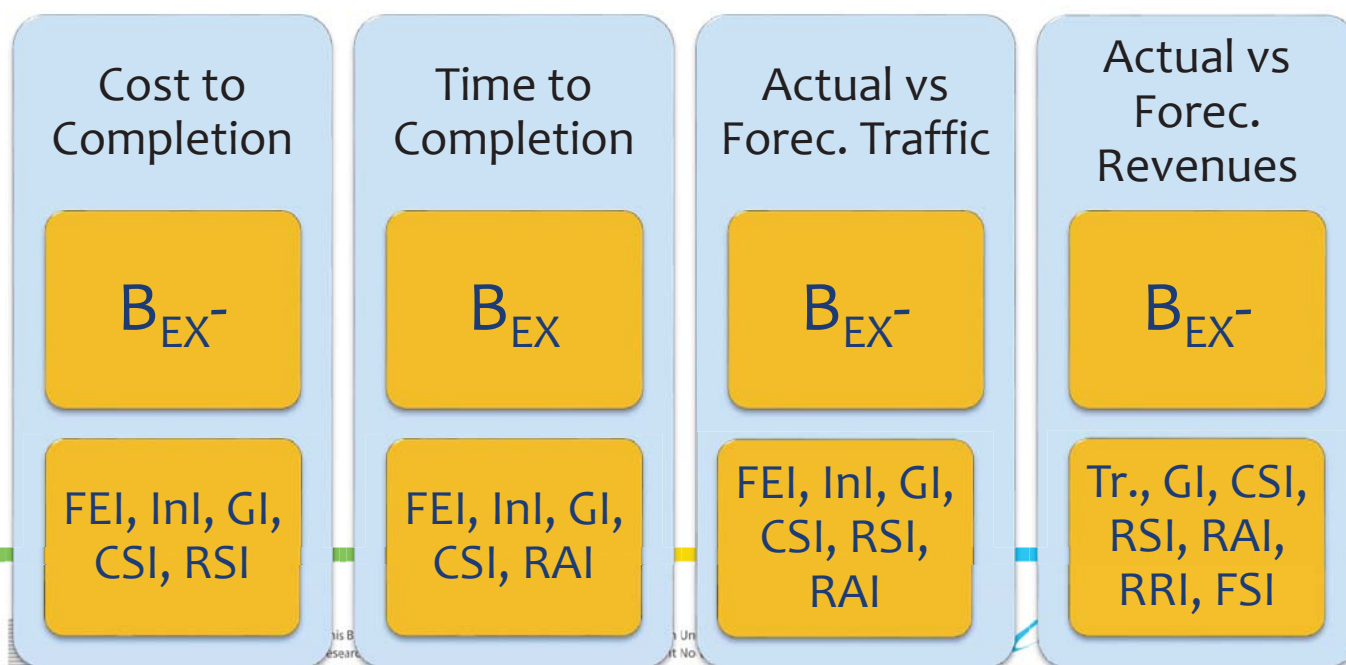
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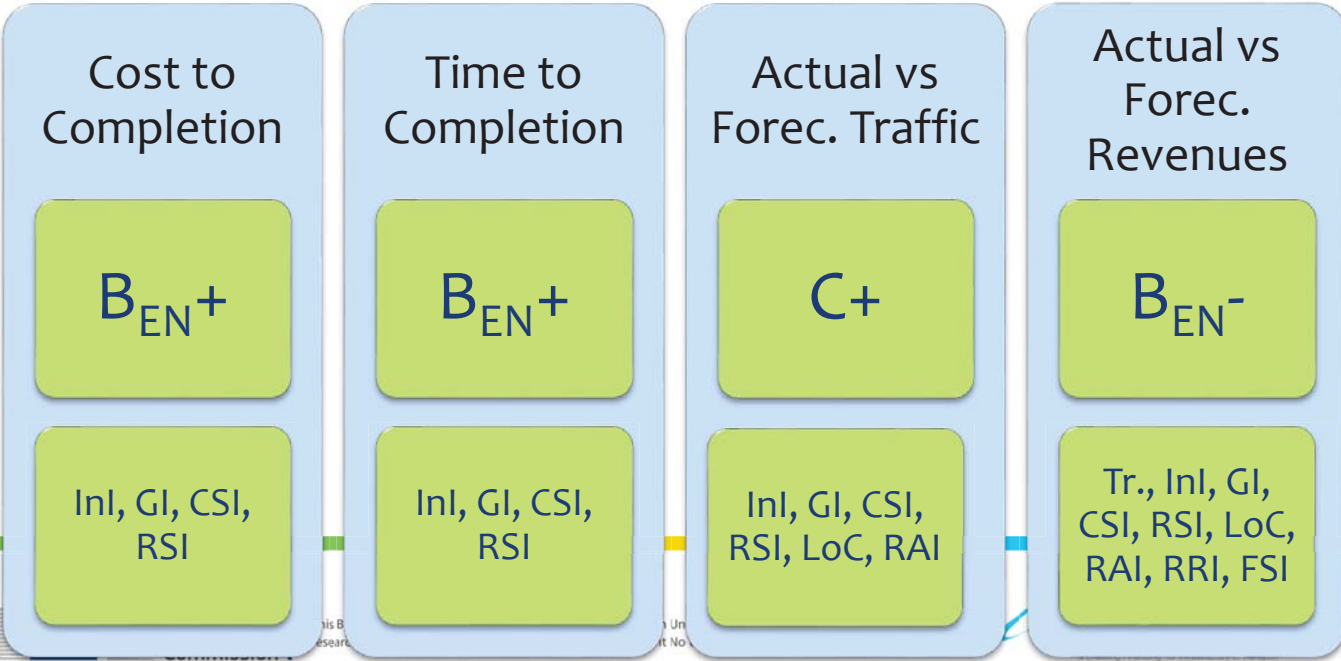
FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI
0,540	0,66	0,750	0,246	0,417	0,333	0,667	1,000	0,796

ROAD



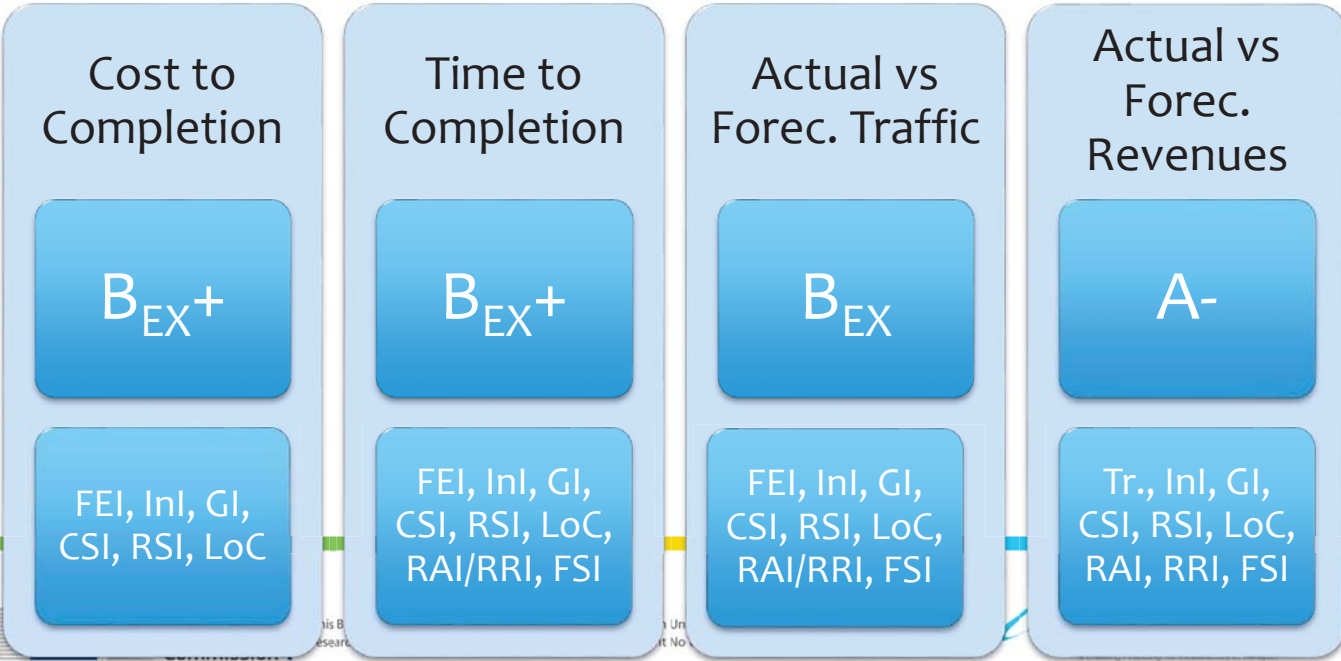
FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI
0,540	0,66	0,750	0,246	0,417	0,333	0,667	1,000	0,796

URBAN TRANSIT

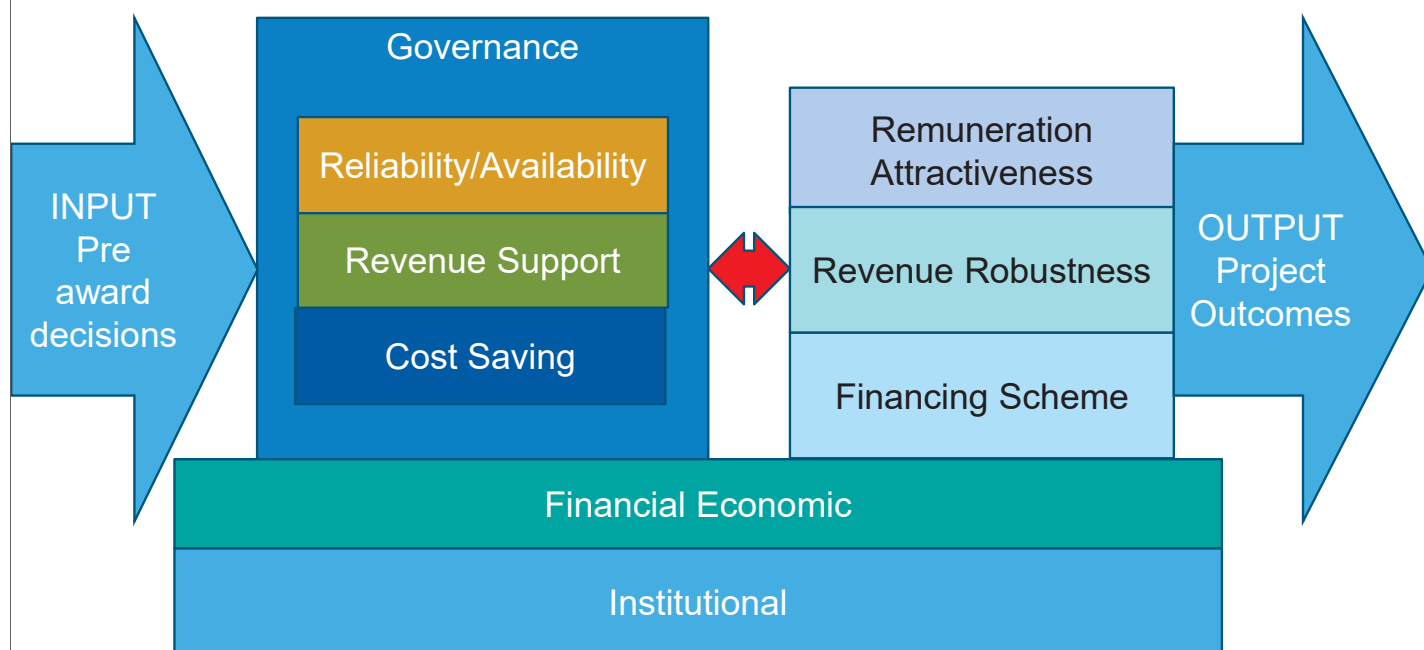


FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI
0,540	0,66	0,750	0,246	0,417	0,333	0,667	1,000	0,796

BRIDGE



BENEFIT Indicators

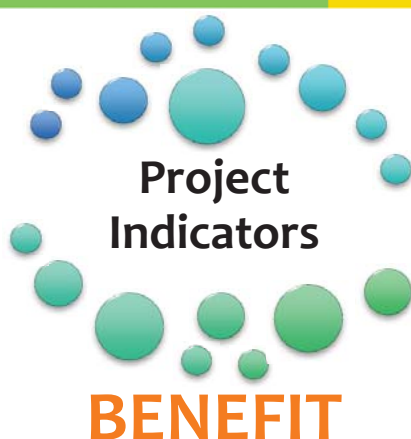


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BENEFIT Policy Guiding Tool



Transfer
Experience

Project Outcome
Rating System

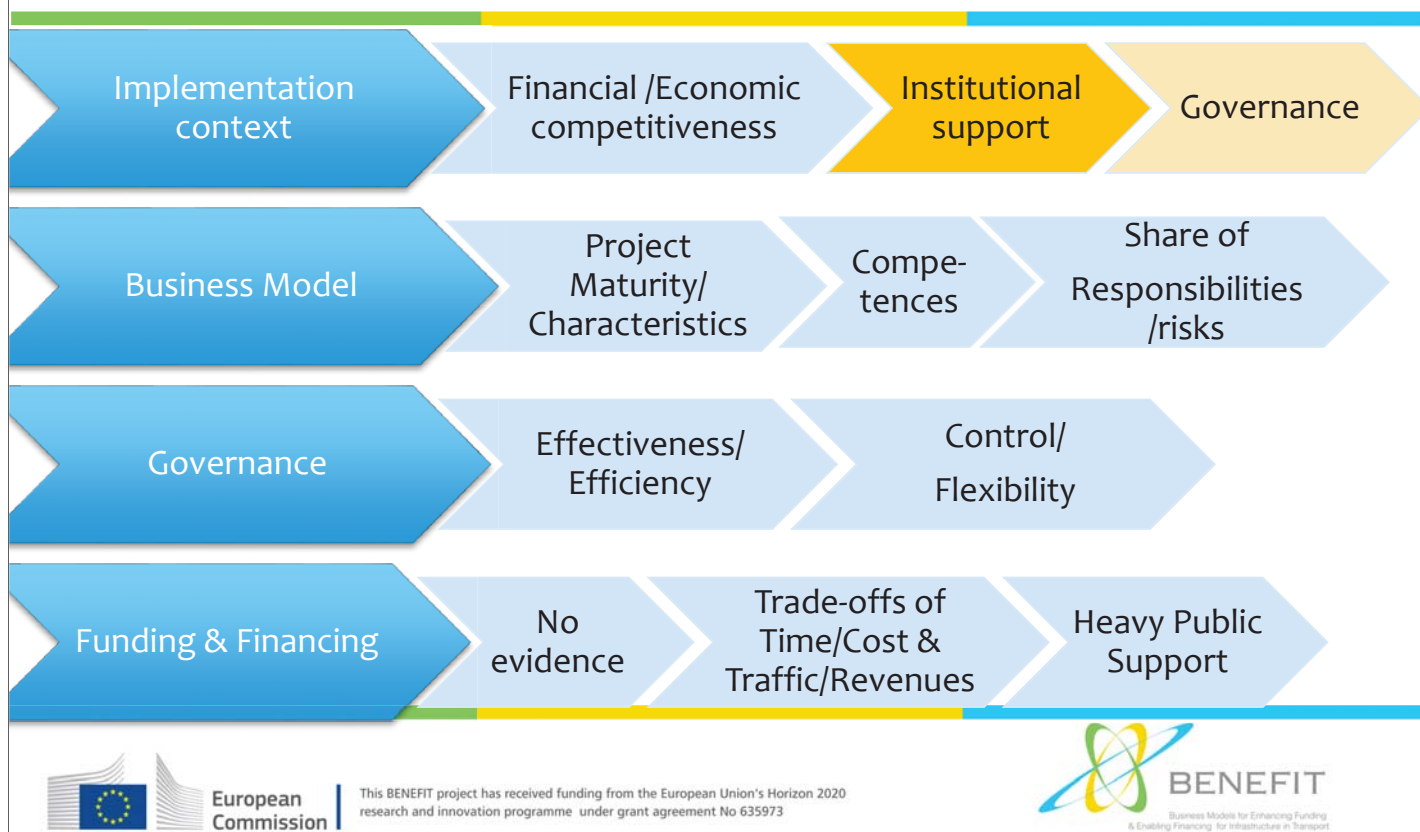


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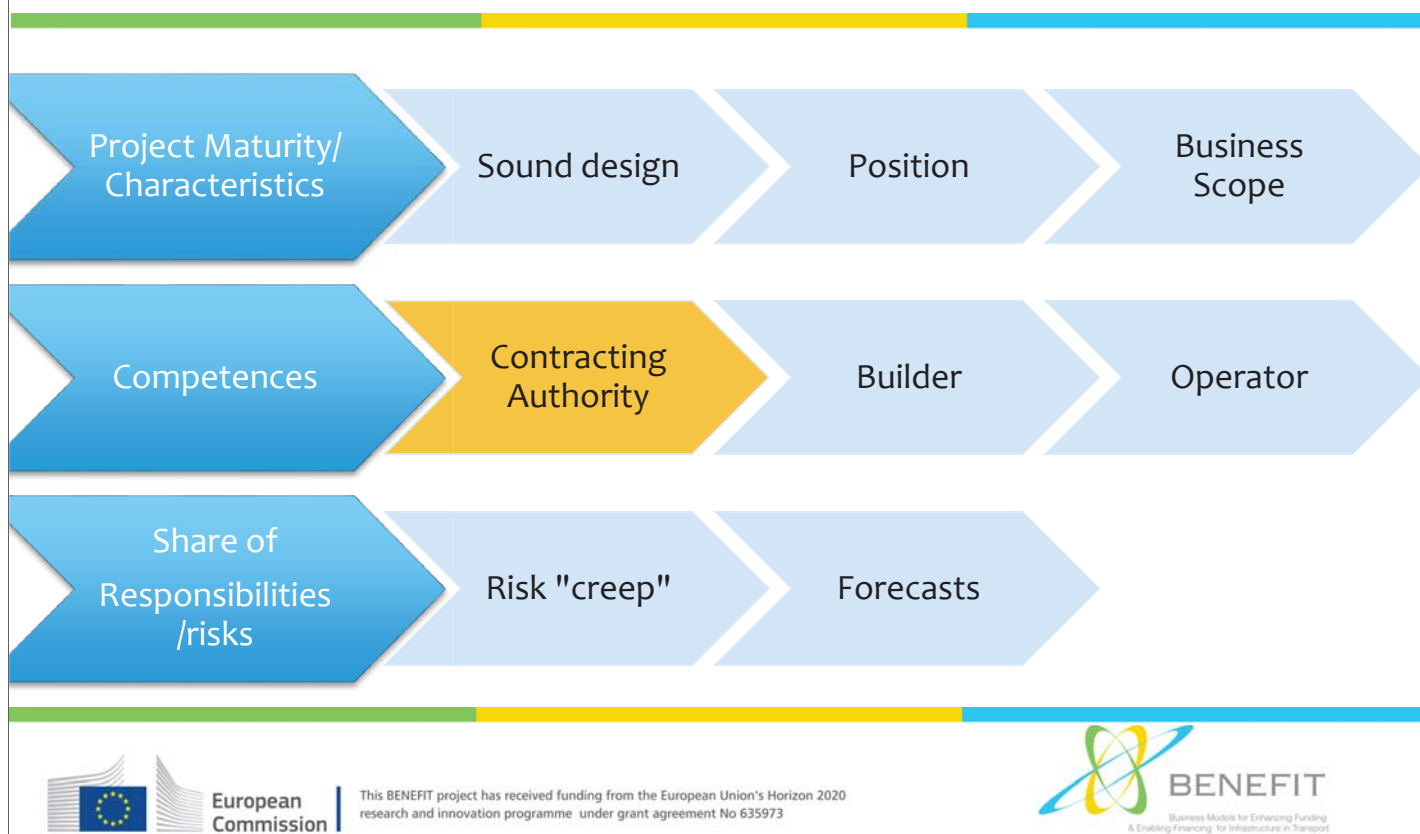
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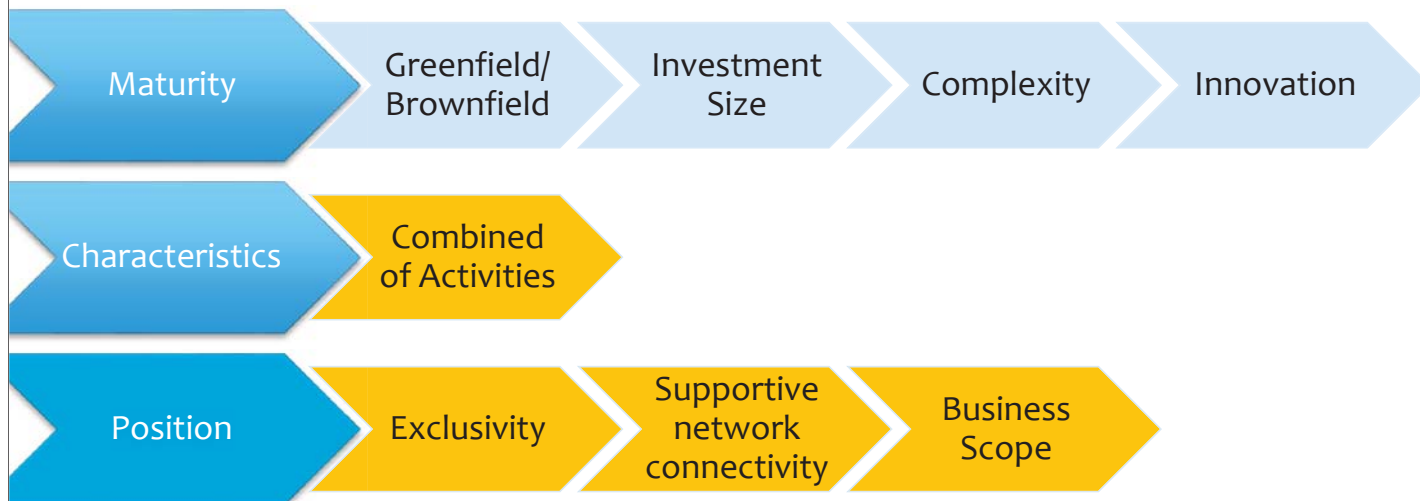
General Lessons Learnt



General Lessons Learnt



General Lessons Learnt

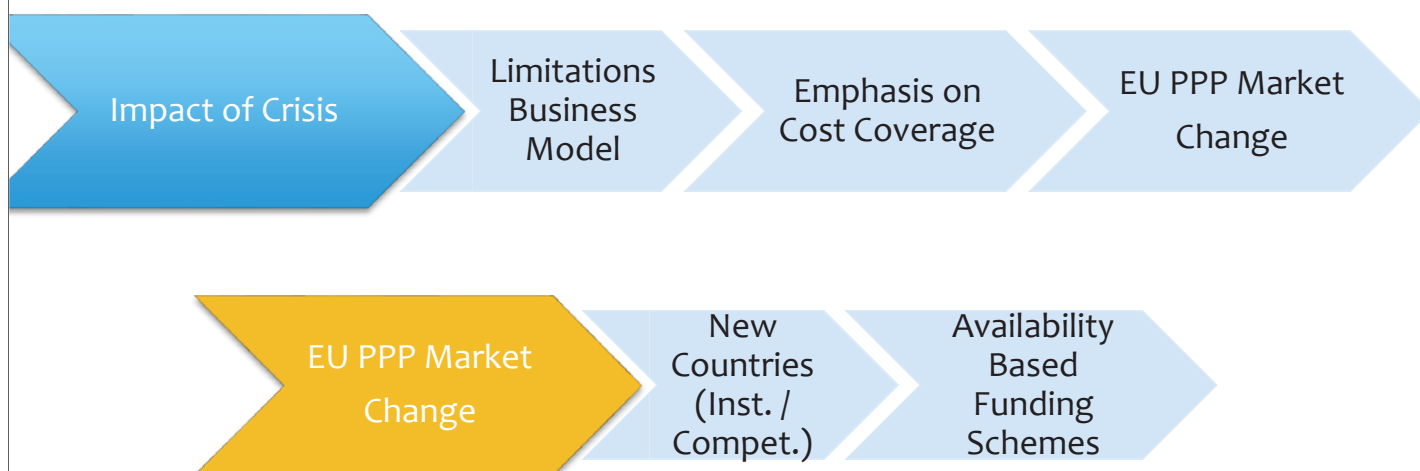


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General Lessons Learnt



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Transport Modes – 1 Slide

- * Ability to take advantage of project characteristics
- * Inherent disadvantages



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Data / Information

- * Registering
- * Collecting
- * Sharing



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Recommendations

- * Recommendations match our lessons learnt
- * But we have Qs



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Key Q

- * If project performance is NOT dependent on financing scheme, then how do we get value from private financing?
 - * Reduce the cost of financing ► low cost financing?
 - * What leads to low cost financing?
 - * Improve on Efficiency?
 - * Improve competences?



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Annex 4. Materials

DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 1

KEY PROJECT INFORMATION:

Project Title	Road 01
Project Location	United Kingdom
Main mode	Road
Delivery scheme	Private-Public Partnership (PPP)
Investment Size	900 M£ (2008)
Current Project Phase	Operation
Project Timeline	▪ Planning: 1980 ▪ Tendering: 1990 ▪ Award: 1992 ▪ Financial Close: 2000 ▪ Construction: 2000 ▪ Inauguration: 2003

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	Y
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	Y
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					S1-S2	S3-S4-S5
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					40%	40%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓ [only for S1]	N/A
#	Company Name	% Share in consortium	Market Strength			
1	Autostrade	25	International player			
2	Macquarie	75	Top national player			
3) Who is primarily bearing the construction risk?					Private party	Private party
4) Is/was innovation adopted in the project?					N	N
5) Was innovation successfully applied?					N	N
6) Project life-cycle planning:						
Were the operational phase requirements considered in construction design?					Y	Y
Were operational costs considered in the construction design?					Y	Y
Were all permits required for construction and operation at project					Y	Y

Question				S1-S2	S3-S4-S5
award?					
Was land and other expropriations complete at project award?				Y	Y
B. Project Operation					
1) Is/was there a change in the SPV structure from the construction phase?				N	N
If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.				✓	✓
#	Company Name	% Share in consortium	Market Strength		
1	Autostrade	25	Top national player		
2	Macquarie	75	International player		
2) Who is primarily bearing the operational risk?				Private party	Private party
C. Contracting Authority					
<i>Experience and expertise in planning of specific infrastructure</i>					
1) Was there a clear policy with respect to this project?				Y	Y
2) Was there a political decision to adopt PPP or Public procurement?				N	N
3) Was there a feasibility study conducted?				Y	Y
4) Was there inaccurate information pre-project identified during the project?				N	N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>					
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y	Y
6) Were there lengthy re-negotiations during project implementation?				N	N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				Y	Y
8) Did the project have support from various stakeholder groups?				Y	Y
9) Did the project have positive press reviews?				Y	N
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				N	N

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	More Business servicer
4) What is the level of project exclusivity?	Competitive environment
5) How does the network integration influence the project with respect to control over demand?	Somewhat negatively
6) Who is primarily bearing the demand / revenue risk?	Totally contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%



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Question	All Snapshots
8) What is the % share of brownfield section(s) based on project description?	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

S1-S2

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	98%	High risk
2	Other	2%	Very low risk

S3-S4-S5

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	100%	High risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	100%

2) What are the revenue streams of the project?

S1-S2

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	98%	High risk
2	Other	2%	Very low risk

S3-S4-S5

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk



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Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%

Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment	
		S1-S2	S3-S4-S5
DEBT			
A/B	Mixed Debt capital A-B (if A & B cannot be distinguished)	80%	0%
EQUITY			
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	20%	100%

DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 1

KEY PROJECT INFORMATION:

Project Title	Road 02
Project Location	Serbia
Main mode	Road
Delivery scheme	Public
Investment Size	146 M€ (2009)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2009 ▪ Award: 2009 ▪ Financial Close: 2010 ▪ Construction: 2010 ▪ Inauguration: 2011

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	N
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	N
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y
Are there clauses enabling either or both updating of service and price changes?	N
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	N

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					All Snapshots
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					97%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					
#	Company Name	% Share in consortium	Market Strength		
1	Strabag & Planum	50%	Top national player		
2	Remaining	50%	Not in construction		
3) Who is primarily bearing the construction risk?					Private party
4) Is/was innovation adopted in the project?					N
5) Was innovation successfully applied?					N
6) Project life-cycle planning:					
Were the operational phase requirements considered in construction design?					Y
Were operational costs considered in the construction design?					N
Were all permits required for construction and operation at project award?					Y
Was land and other expropriations complete at project award?					N

Question	All Snapshots
B. Project Operation	
Assess the operational expertise of the public sector company/agency responsible for operation	Top national player
C. Contracting Authority	
<i>Experience and expertise in planning of specific infrastructure</i>	
1) Was there a clear policy with respect to this project?	Y
2) Was there a political decision to adopt PPP or Public procurement?	Y
3) Was there a feasibility study conducted?	Y
4) Was there inaccurate information pre-project identified during the project?	N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>	
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)	N
6) Were there lengthy re-negotiations during project implementation?	N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?	Y
8) Did the project have support from various stakeholder groups?	Y
9) Did the project have positive press reviews?	Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?	Y

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Rather exclusive
5) How does the network integration influence the project with respect to control over demand?	Positively
6) Who is primarily bearing the demand / revenue risk?	N/A
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%
8) What is the % share of brownfield section(s) based on project description?	50%
9) Is the greenfield section connected with the brownfield section(s)?	Y
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	10%



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Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

All Snapshots

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	100%	Very low risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	100%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%

Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
EQUITY		
5a	Equity capital by Public Sector (Government or similar) standalone (no other equity investors)	100%

DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 2

KEY PROJECT INFORMATION:

Project Title	Road 03
Project Location	Italy
Main mode	Road
Delivery scheme	Private-Public Partnership (PPP)
Investment Size	1611 M€ (2003)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2000 ▪ Award: 2003 ▪ Financial Close: 2013 ▪ Construction: 2009 ▪ Inauguration: 2014

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	Y
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					All Snapshots
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					27%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					
#	Company Name	% Share in consortium	Market Strength		
1	Impresa Pizzarotti & C. S.p.A.	6,4%	Top national player		
2	Unieco Soc. Cop.	5,8%	Top national player		
3	Mattioda Pierino & Figli Autostrade S.r.l.	5.3%	Top national player		
4	Remaining	82.5%	Not in construction		
3) Who is primarily bearing the construction risk?					Public party
4) Is/was innovation adopted in the project?					N
5) Was innovation successfully applied?					N
6) Project life-cycle planning:					

Question				All Snapshots
Were the operational phase requirements considered in construction design?				Y
Were operational costs considered in the construction design?				Y
Were all permits required for construction and operation at project award?				Y
Was land and other expropriations complete at project award?				Y
B. Project Operation				
1) Is/was there a change in the SPV structure from the construction phase? If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.				N
#	Company Name	% Share in consortium	Market Strength	✓
1	SATAP S.p.A.	13,3%	Top national player	
2	Autostrade Centro Padane S.p.A.	5,4%	Top national player	
3	Autostrada Brescia Verona Vicenza Padova	4,9%	Top national player	
4	Other	3%	Local player	
5	Remaining	73,4%	Non-Operator	
2) Who is primarily bearing the operational risk?				Public party
C. Contracting Authority				
<i>Experience and expertise in planning of specific infrastructure</i>				
1) Was there a clear policy with respect to this project?				Y
2) Was there a political decision to adopt PPP or Public procurement?				Y
3) Was there a feasibility study conducted?				Y
4) Was there inaccurate information pre-project identified during the project?				N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>				
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y
6) Were there lengthy re-negotiations during project implementation?				N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				Y
8) Did the project have support from various stakeholder groups?				Y
9) Did the project have positive press reviews?				Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				Y

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Competitive environment
5) How does the network integration influence the project with respect	Positively



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Question	All Snapshots
to control over demand?	
6) Who is primarily bearing the demand / revenue risk?	Mostly contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select)	100%
8) What is the % share of brownfield section(s) based on project description?	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	10%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

All Snapshots

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	100%	High risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	100%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
DEBT		
B	Debt capital by Lead banks (commercial)	28%
C	Debt capital by European Investment Bank (EIB) and/or other multilateral banks that are mainly self-financing	4.5%
D	Debt capital by national or international development banks (e.g. EBRD, KfW in Germany, etc.)	32.5%
EQUITY		
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	22.2%
PUBLIC SECTOR SUPPORT		
G2	Public sector funds / Government subsidies	12.8%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 2

KEY PROJECT INFORMATION:

Project Title	Tram 01
Project Location	France
Main mode	Urban transit (tram)
Delivery scheme	PPP
Investment Size	372.6 M€ (2011)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2005 ▪ Award: 2006 ▪ Financial Close: 2008 ▪ Construction: 2008 ▪ Inauguration: 2011

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	Y
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	N
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					S1	S2	S3
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					5.5%		
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓	✓	✓
#	Company Name	% Share in consortium	Market Strength				
1	Alstom, Bouygues Travaux Publics, Quille SA, Pertuy Construction & Colas	39%	International player				
2	Transdev	17%	Not in construction				
2	Remaining	44%	Not in construction				
3) Who is primarily bearing the construction risk?					Public party		
4) Is/was innovation adopted in the project?					N		
5) Was innovation successfully applied?					N		
6) Project life-cycle planning:							
Were the operational phase requirements considered in construction design?					Y	Y	Y

Question				S1	S2	S3
Were operational costs considered in the construction design?				Y	Y	Y
Were all permits required for construction and operation at project award?				Y	Y	N
Was land and other expropriations complete at project award?				N	N	N
B. Project Operation						
1) Is/was there a change in the SPV structure from the construction phase?				N		
If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.						
#	Company Name	% Share in consortium	Market Strength	✓	✓	✓
1	Alstom, Bouygues Travaux Publics, Quille SA, Pertuy Construction & Colas	39%	Non-Operator			
2	Transdev	17%	International player			
3	Remaining	44%	Non-Operator			
2) Who is primarily bearing the operational risk?				Public party		
C. Contracting Authority						
<i>Experience and expertise in planning of specific infrastructure</i>						
1) Was there a clear policy with respect to this project?				Y	Y	Y
2) Was there a political decision to adopt PPP or Public procurement?				Y	Y	Y
3) Was there a feasibility study conducted?				Y	Y	Y
4) Was there inaccurate information pre-project identified during the project?				N	N	N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>						
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y	Y	Y
6) Were there lengthy re-negotiations during project implementation?				N	N	N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				N	N	N
8) Did the project have support from various stakeholder groups?				N	N	N
9) Did the project have positive press reviews?				Y	N	N
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				N	N	N

Business Model - Revenue Support Indicator (RSI)

Question	S1-S2	S3
1) Is there a Greenfield section in this project?	Y	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%	0%

Question	S1-S2	S3
3) What is the project business scope?	Mostly Business servicer	Mostly Business servicer
4) What is the level of project exclusivity?	Competitive environment	Competitive environment
5) How does the network integration influence the project with respect to control over demand?	Very Positively	Very Positively
6) Who is primarily bearing the demand / revenue risk?	Mostly Contractor	Rather Contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%	100%
8) What is the % share of brownfield section(s) based on project description?	0%	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

S1

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Public subsidies	77%	Very low risk
2	User charges	23%	Low risk

S2

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Public subsidies	77%	Very low risk
2	User charges	23%	Very high risk

S3

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Public subsidies	77%	Very low risk
2	User charges	23%	High risk



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Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	23%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	S1	S2	S3
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%	50%	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%	50%	100%

Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment All Snapshots
DEBT		
B	Debt capital by Lead banks (commercial)	26%
D	Debt capital by national or international development banks (e.g. EBRD, KfW in Germany, etc.)	26%
EQUITY		
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	5.8%
PUBLIC SECTOR SUPPORT		
G2	Public sector funds / Government subsidies	42.2%

DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 3

KEY PROJECT INFORMATION:

Project Title	Road 04
Project Location	Spain
Main mode	Road
Delivery scheme	Private-Public Partnership (PPP)
Investment Size	233 M€ (2015)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 1986 ▪ Award: 1987 ▪ Financial Close: 1987 ▪ Construction: 1987 ▪ Inauguration: 1990

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	S1	S2-S3
Did the client select only one service provider [bidder] to participate in the pricing stage?	N	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	Y	N
Was there encouragement of competition between more than one bidders in the procurement process?	N	Y
Was there integration of design and construction in the services provided?	Y	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	N	N
Do the key service providers [contractor] have to solely carry the risk of rising costs?	N	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y	Y
Are there clauses enabling either or both updating of service and price changes?	Y	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question				All Snapshots
1) What is the level of civil works according to the % of civil works/structures in the overall project description?				100%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?				
#	Company Name	% Share in consortium	Market Strength	
1	Consortium	100	International player	
3) Who is primarily bearing the construction risk?				Private party
4) Is/was innovation adopted in the project?				N
5) Was innovation successfully applied?				N
6) Project life-cycle planning:				
Were the operational phase requirements considered in construction design?				N
Were operational costs considered in the construction design?				N
Were all permits required for construction and operation at project award?				Y
Was land and other expropriations complete at project award?				N

Question				All Snapshots
B. Project Operation				
1) Is/was there a change in the SPV structure from the construction phase? If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.				N
#	Company Name	% Share in consortium	Market Strength	✓
1	Consortium	100	International player	
2) Who is primarily bearing the operational risk?				Private party
C. Contracting Authority				
<i>Experience and expertise in planning of specific infrastructure</i>				
1) Was there a clear policy with respect to this project?				Y
2) Was there a political decision to adopt PPP or Public procurement?				Y
3) Was there a feasibility study conducted?				N
4) Was there inaccurate information pre-project identified during the project?				N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>				
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y
6) Were there lengthy re-negotiations during project implementation?				Y
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				Y
8) Did the project have support from various stakeholder groups?				Y
9) Did the project have positive press reviews?				Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				Y

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	More Business servicer
4) What is the level of project exclusivity?	Not exclusive
5) How does the network integration influence the project with respect to control over demand?	Positively
6) Who is primarily bearing the demand / revenue risk?	Totally contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%
8) What is the % share of brownfield section(s) based on project description?	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%



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Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

All Snapshots

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	100%	High risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	100%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment	
		S1	S2-S3
DEBT			
A/B	Mixed Debt capital A-B (if A & B cannot be distinguished)	22.5%	0%
EQUITY			
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	67.5%	100%
PUBLIC SECTOR SUPPORT			
G2	Public sector funds / Government subsidies	10%	0%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 3

KEY PROJECT INFORMATION:

Project Title	Tram 02
Project Location	Belgium
Main mode	Urban transit (tram)
Delivery scheme	PPP
Investment Size	126 M€ (2009)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2007 ▪ Award: 2009 ▪ Financial Close: 2009 ▪ Construction: 2009 ▪ Inauguration: 2012

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	Y
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	N
Do the key service providers [contractor] have to solely carry the risk of rising costs?	Y
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					All Snapshots
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					23%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓
#	Company Name	% Share in consortium	Market Strength		
1	THV Silvius	52%	Top national player		
2	Beheersmaatschappij Antwerpen Mobiel	24%	Top national player		
3	Lijninvest	24%	Top national player		
3) Who is primarily bearing the construction risk?					Private party
4) Is/was innovation adopted in the project?					Y
5) Was innovation successfully applied?					Y
6) Project life-cycle planning:					
Were the operational phase requirements considered in construction design?					Y
Were operational costs considered in the construction design?					Y
Were all permits required for construction and operation at project award?					Y

Question				All Snapshots
Was land and other expropriations complete at project award?				Y
B. Project Operation				
1) Is/was there a change in the SPV structure from the construction phase? If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.				N
#	Company Name	% Share in consortium	Market Strength	
1	THV Silvius	52%	Non-Operator	
2	Beheersmaatschappij Antwerpen Mobiel	24%	Top national player	
3	Lijninvest	24%	Top national player	
2) Who is primarily bearing the operational risk?				Public party
C. Contracting Authority				
Experience and expertise in planning of specific infrastructure				
1) Was there a clear policy with respect to this project?				Y
2) Was there a political decision to adopt PPP or Public procurement?				Y
3) Was there a feasibility study conducted?				Y
4) Was there inaccurate information pre-project identified during the project?				N
Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure				
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y
6) Were there lengthy re-negotiations during project implementation?				N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				Y
8) Did the project have support from various stakeholder groups?				Y
9) Did the project have positive press reviews?				Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				Y

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Competitive environment
5) How does the network integration influence the project with respect to control over demand?	Somewhat Positively
6) Who is primarily bearing the demand / revenue risk?	Mostly public
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%

Question	All Snapshots
8) What is the % share of brownfield section(s) based on project description?	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

All Snapshots

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Availability fees	100%	Low risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	30%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	Fares	100%	Low risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	S1
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
DEBT		
B	Debt capital by Lead banks (commercial)	90%
EQUITY		
3	Equity capital by infrastructure funds and/or other long term financial equity investors	5%
5b	Equity capital by Public Sector (Government or similar) together with other equity investors	5%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 4

KEY PROJECT INFORMATION:

Project Title	Tunnel 01
Project Location	Germany
Main mode	Bridge/Tunnel
Delivery scheme	PPP
Investment Size	EUR 134M (1999)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 1998 ▪ Award: 1999 ▪ Financial Close: 2001 ▪ Construction: 2001 ▪ Inauguration: 2005

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	Y
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	N

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					S1-S2	S3
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					90%	90%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓	✓
#	Company Name	% Share in consortium	Market Strength			
1	Bilfinger Berger	50%	International player			
2	Hochtief	50%	International player			
3) Who is primarily bearing the construction risk?					Private party	Private party
4) Is/was innovation adopted in the project?					Y	Y
5) Was innovation successfully applied?					N/A	Y
6) Project life-cycle planning:						
Were the operational phase requirements considered in construction design?					Y	Y
Were operational costs considered in the construction design?					Y	Y
Were all permits required for construction and operation at project award?					Y	Y

Question				S1-S2	S3
Was land and other expropriations complete at project award?				Y	Y
B. Project Operation					
1) Is/was there a change in the SPV structure from the construction phase?				Y	Y
If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.				✓	✓
#	Company Name	% Share in consortium	Market Strength		
1	Bilfinger Berger	25%	International player		
	Hochtief	25%	International player		
2	Federal Government	50%	International player		
2) Who is primarily bearing the operational risk?				Private party	Private party
C. Contracting Authority					
<i>Experience and expertise in planning of specific infrastructure</i>					
1) Was there a clear policy with respect to this project?				Y	Y
2) Was there a political decision to adopt PPP or Public procurement?				Y	Y
3) Was there a feasibility study conducted?				Y	Y
4) Was there inaccurate information pre-project identified during the project?				N	Y
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>					
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				N	N
6) Were there lengthy re-negotiations during project implementation?				N	N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				N	N
8) Did the project have support from various stakeholder groups?				N	N
9) Did the project have positive press reviews?				N	N
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				N	N

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	N
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Competitive environment
5) How does the network integration influence the project with respect to control over demand?	Positively
6) Who is primarily bearing the demand / revenue risk?	Totally contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select)	100%



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Question	All Snapshots
8) What is the % share of brownfield section(s) based on project description?	100%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	S1-S2	S3
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%	75%

2) What are the income streams of the project remuneration scheme?

All Snapshots

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	100%	Very high risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	S1-S2	S3
1) What is the percentage of cost coverage assured by the project's revenue streams?	50%	37.5%

2) What are the revenue streams of the project?

S1-S2

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	High risk

S3

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	100%	Very high risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
DEBT		
A	Debt capital by investors such as: the general public (tradable bonds), other institutional investors (e.g. pension funds, insurance companies, other funds), non-leading banks, debt funds	10%
B	Debt capital by Lead banks (commercial)	15%
D	Debt capital by national or international development banks (e.g. EBRD, KfW in Germany, etc.)	15%
EQUITY		
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	10%
PUBLIC SECTOR SUPPORT		
G2	Public sector funds / Government subsidies	50%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

Room 4

KEY PROJECT INFORMATION:

Project Title	Road 05
Project Location	The Netherlands
Main mode	Road (& Rail)
Delivery scheme	Concession of Operation
Investment Size	EUR 272M (2006)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2005 ▪ Award: 2006 ▪ Financial Close: 2006 ▪ Construction: 2006 ▪ Inauguration: 2015

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	S1-S2-S3	S4
Did the client select only one service provider [bidder] to participate in the pricing stage?	N	Y
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	Y	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y	Y
Was there integration of design and construction in the services provided?	Y	N
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	Y	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y	N
Are there clauses enabling either or both updating of service and price changes?	Y	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	N	N

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					S1-S2	S3	S4
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					75%	75%	50%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓	✓	✓
#	Company Name	% Share in consortium	Market Strength				
1	Rijkswaterstaat	67%	International player				
2	Remaining	33%	Not in construction				
3) Who is primarily bearing the construction risk?					Private party		
4) Is/was innovation adopted in the project?					N	N	Y
5) Was innovation successfully applied?					N	N	N/A
6) Project life-cycle planning:							
Were the operational phase requirements considered in construction design?					Y	Y	Y
Were operational costs considered in the construction design?					Y	Y	Y
Were all permits required for construction and operation at project award?					N	N	N

Question				S1-S2	S3	S4
Was land and other expropriations complete at project award?				N	N	N
B. Project Operation						
1) Is/was there a change in the SPV structure from the construction phase?				N	N	N
If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.						
#	Company Name	% Share in consortium	Market Strength	✓	✓	✓
1	Rijkwaterstaat	67%	International player			
2	Remaining	33%	Not in construction			
2) Who is primarily bearing the operational risk?				Private party		
C. Contracting Authority						
<i>Experience and expertise in planning of specific infrastructure</i>						
1) Was there a clear policy with respect to this project?				Y	Y	Y
2) Was there a political decision to adopt PPP or Public procurement?				Y	Y	Y
3) Was there a feasibility study conducted?				Y	Y	Y
4) Was there inaccurate information pre-project identified during the project?				Y	Y	Y
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>						
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)				Y	Y	Y
6) Were there lengthy re-negotiations during project implementation?				N	N	N
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?				Y	Y	Y
8) Did the project have support from various stakeholder groups?				N	Y	Y
9) Did the project have positive press reviews?				Y	Y	Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?				Y	Y	Y

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	N
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	50%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Exclusive
5) How does the network integration influence the project with respect to control over demand?	Positively
6) Who is primarily bearing the demand / revenue risk?	Totally public
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	30%



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Question	All Snapshots
8) What is the % share of brownfield section(s) based on project description?	100%
9) Is the greenfield section connected with the brownfield section(s)?	N/A
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	All Snapshots
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

S1-S2-S3

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Public subsidies	100%	Very low risk

S4

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	50%	Low risk
2	Public subsidies	100%	Very low risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	All Snapshots
1) What is the percentage of cost coverage assured by the project's revenue streams?	0%

2) What are the revenue streams of the project?

All Snapshots

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	Other	100%	Very low risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	S1-S2-S3	S4
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%	0%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
EQUITY		
5a	Equity capital by Public Sector (Government or similar) standalone (no other equity investors)	100%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

AUDITORIUM

KEY PROJECT INFORMATION:

Project Title	Metro 01
Project Location	Poland
Main mode	Urban Transit (metro)
Delivery scheme	Public
Investment Size	1409 M€ (2009)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 2009 ▪ Award: 2009 ▪ Financial Close: 2009 ▪ Construction: 2009 ▪ Inauguration: 2015

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	All Snapshots
Did the client select only one service provider [bidder] to participate in the pricing stage?	N
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y
Was there integration of design and construction in the services provided?	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	N
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	N
Are there clauses enabling either or both updating of service and price changes?	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	N

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question					S1	S2
1) What is the level of civil works according to the % of civil works/structures in the overall project description?					100%	100%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?					✓	✓
#	Company Name	% Share in consortium	Market Strength			
1	Gülermak	34%	International player			
2	Astaldi	33%	International player			
3	PBDiM	33%	Top national player			
3) Who is primarily bearing the construction risk?					Private party	Private party
4) Is/was innovation adopted in the project?					Y	Y
5) Was innovation successfully applied?					N/A	N/A
6) Project life-cycle planning:						
Were the operational phase requirements considered in construction design?					Y	Y
Were operational costs considered in the construction design?					Y	Y

Question	S1	S2
Were all permits required for construction and operation at project award?	N	N
Was land and other expropriations complete at project award?	Y	Y
B. Project Operation		
Assess the operational expertise of the public sector company/agency responsible for operation	International player	
C. Contracting Authority		
<i>Experience and expertise in planning of specific infrastructure</i>		
1) Was there a clear policy with respect to this project?	Y	Y
2) Was there a political decision to adopt PPP or Public procurement?	N	N
3) Was there a feasibility study conducted?	Y	Y
4) Was there inaccurate information pre-project identified during the project?	N	N
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>		
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)	Y	Y
6) Were there lengthy re-negotiations during project implementation?	N	Y
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?	Y	Y
8) Did the project have support from various stakeholder groups?	Y	Y
9) Did the project have positive press reviews?	Y	Y
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?	Y	Y

Business Model - Revenue Support Indicator (RSI)

Question	S1	S2
1) Is there a Greenfield section in this project?	Y	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%	0%
3) What is the project business scope?	Mostly Business servicer	Mostly Business servicer
4) What is the level of project exclusivity?	Quite not exclusive	Quite not exclusive
5) How does the network integration influence the project with respect to control over demand?	Positively	Positively
6) Who is primarily bearing the demand / revenue risk?	N/A	N/A
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%	100%
8) What is the % share of brownfield section(s) based on project description?	0%	0%
9) Is the greenfield section connected with the brownfield section(s)?	N/A	N/A



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Question	S1	S2
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	2%	0%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	S1-S2
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

S1-S2

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	Public subsidies	63%	Very low risk
2	User charges	35%	Low risk
3	Other	2%	High risk

Funding Scheme - Revenue Robustness Indicator (RRI)

Question	S1-S2
1) What is the percentage of cost coverage assured by the project's revenue streams?	37%

2) What are the revenue streams of the project?

S1-S2

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	95%	Low risk
2	Other	5%	High risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	S1-S2
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%



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Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment
		S1-S2
EQUITY		
5a	Equity capital by Public Sector (Government or similar) standalone (no other equity investors)	100%



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DAY 1 – ROUND TABLE WORKSHOP | PROJECT INFORMATION & APPLICATION INPUT

AUDITORIUM

KEY PROJECT INFORMATION:

Project Title	Bridge 01
Project Location	Portugal
Main mode	Bridge/Tunnel
Delivery scheme	PPP
Investment Size	EUR 645M (1994)
Current Project Phase	Operation
Project Timeline	▪ Tendering: 1993 ▪ Award: 1994 ▪ Financial Close: 1994 ▪ Construction: 1994 ▪ Inauguration: 1998

APPLICATION INPUT FOR INDICATOR CALCULATION:

Governance Indicator (GI)

Question	S1	S2
Did the client select only one service provider [bidder] to participate in the pricing stage?	Y	Y
Did the client and the key service providers [bidders] collectively estimate the expected project cost?	N	N
Was there encouragement of competition between more than one bidders in the procurement process?	Y	Y
Was there integration of design and construction in the services provided?	Y	Y
Are the key service providers [contractors] obliged to pay a penalty if completion dates are not met?	Y	Y
Do the key service providers [contractor] have to solely carry the risk of rising costs?	Y	Y
Are there clauses in the contract indicating that guarantees of performance are/were agreed upon?	Y	Y
Are exploitation, commercial/revenue & financial risks rather concentrated in one party?	Y	N
Are there clauses enabling either or both updating of service and price changes?	Y	Y
Are there clauses indicating that client has an option to terminate the agreement prematurely without cause?	Y	Y

Business Model - Cost Saving Indicator (CSI)

A. Project Construction

Question		S1	S2
1) What is the level of civil works according to the % of civil works/structures in the overall project description?		90%	90%
2) What is the share of construction companies in the contractor consortium and the corresponding company strength in the market, as derived from the description of the SPV/constructor?			
S1			
#	Company Name	% Share in consortium	Market Strength
1	Campenon Bernanrd SGE	22%	Top national player
2	Remaining	78%	International player
S2			
#	Company Name	% Share in consortium	Market Strength
1	Macquarie Infrastructure (UK) Ltd	31%	International player
2	Vinci Construction Grands Projects	31%	International player
3	Remaining	38%	Top national player

Question	S1	S2																
3) Who is primarily bearing the construction risk?	Private party	Private party																
4) Is/was innovation adopted in the project?	N	N																
5) Was innovation successfully applied?	N/A	N																
6) Project life-cycle planning:																		
Were the operational phase requirements considered in construction design?	Y	Y																
Were operational costs considered in the construction design?	Y	Y																
Were all permits required for construction and operation at project award?	Y	Y																
Was land and other expropriations complete at project award?	Y	Y																
B. Project Operation																		
1) Is/was there a change in the SPV structure from the construction phase?	N	Y																
If yes, please make any necessary changes in the following table. If No, please re-assess the Market Strength with respect to operation.																		
S1																		
<table><tr><th>#</th><th>Company Name</th><th>% Share in consortium</th><th>Market Strength</th></tr><tr><td>1</td><td>Campenon Bernanrd SGE</td><td>22%</td><td>International player</td></tr><tr><td>2</td><td>Remaining</td><td>78%</td><td>Top national player</td></tr></table>	#	Company Name	% Share in consortium	Market Strength	1	Campenon Bernanrd SGE	22%	International player	2	Remaining	78%	Top national player						
#	Company Name	% Share in consortium	Market Strength															
1	Campenon Bernanrd SGE	22%	International player															
2	Remaining	78%	Top national player															
S2																		
<table><tr><th>#</th><th>Company Name</th><th>% Share in consortium</th><th>Market Strength</th></tr><tr><td>1</td><td>Macquarie Infrastructure (UK) Ltd</td><td>31%</td><td>International player</td></tr><tr><td>2</td><td>Vinci Construction Grands Projects</td><td>31%</td><td>International player</td></tr><tr><td>3</td><td>Remaining</td><td>38%</td><td>Top national player</td></tr></table>	#	Company Name	% Share in consortium	Market Strength	1	Macquarie Infrastructure (UK) Ltd	31%	International player	2	Vinci Construction Grands Projects	31%	International player	3	Remaining	38%	Top national player		
#	Company Name	% Share in consortium	Market Strength															
1	Macquarie Infrastructure (UK) Ltd	31%	International player															
2	Vinci Construction Grands Projects	31%	International player															
3	Remaining	38%	Top national player															
2) Who is primarily bearing the operational risk?	Private party	Private party																
C. Contracting Authority																		
<i>Experience and expertise in planning of specific infrastructure</i>																		
1) Was there a clear policy with respect to this project?	Y	Y																
2) Was there a political decision to adopt PPP or Public procurement?	Y	Y																
3) Was there a feasibility study conducted?	Y	Y																
4) Was there inaccurate information pre-project identified during the project?	Y	Y																
<i>Experience and expertise in monitoring the implementation (construction) of and operating the specific infrastructure</i>																		
5) Does the public authority responsible for the contract (at the time) have a good project management record? (i.e. majority of projects completed on-time, budget and to quality)	N	N																
6) Were there lengthy re-negotiations during project implementation?	Y	Y																
7) Does the public authority responsible for the contract (at the time) have capable staff to monitor the project?	N	N																
8) Did the project have support from various stakeholder groups?	Y	Y																
9) Did the project have positive press reviews?	N	N																
10) Does the public authority responsible for the contract (at the time) have experience in operating the specific infrastructure?	N	N																

Business Model - Revenue Support Indicator (RSI)

Question	All Snapshots
1) Is there a Greenfield section in this project?	Y
2) What is the % share of other transport infrastructure investment (besides the principle mode), based on project description?	0%
3) What is the project business scope?	Business servicer
4) What is the level of project exclusivity?	Exclusive
5) How does the network integration influence the project with respect to control over demand?	Very Positively
6) Who is primarily bearing the demand / revenue risk?	Rather contractor
7) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%
8) What is the % share of brownfield section(s) based on project description?	60%
9) Is the greenfield section connected with the brownfield section(s)?	N
9.1) What is the project business scope?	Business servicer
9.2) What is the level of project exclusivity?	Exclusive
9.3) How does the network integration influence the project with respect to control over demand?	Very Positively
9.4) Who is primarily bearing the demand / revenue risk?	Rather contractor
9.5) What is the level of satisfaction for the project? [before operation: 100% - after start of operation: please select]	100%
10) What is the % share of non-transport business activities within the project, based on the project's revenue structure?	1%

Funding Scheme - Remuneration Attractiveness Indicator (RAI)

Question	S1-S2
1) What is the percentage of cost recovery assured by the project's remuneration scheme?	100%

2) What are the income streams of the project remuneration scheme?

S1

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	95%	High risk
2	Other	5%	High risk

S2

#	Type of income stream	% Share of income stream on total income	Risk of income source
1	User charges	85%	High risk
2	Other	15%	Very low risk



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This BENEFIT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 635973



Funding Scheme - Revenue Robustness Indicator (RRI)

Question	S1	S2
1) What is the percentage of cost coverage assured by the project's revenue streams?	100%	85%

2) What are the revenue streams of the project?

S1

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	95%	High risk
2	Other	5%	High risk

S2

#	Type of revenue stream	% Share of revenue stream on total income	Risk of revenue source
1	User charges	85%	High risk
2	Other	15%	Very low risk

Transport Mode Context - Reliability/Availability Indicator (IRA)

Question	All Snapshots
1) What is the reliability of the transport mode (% time without disruptions during operation)?	100%
2) What is the availability of the transport mode (% days per year that the transport infrastructure is available to users)?	100%

Financing Scheme Indicator (FSI)

1) What is the composition of the financing scheme of the project?

Category of debt/equity capital		% Share of capital on total project investment All Snapshots
DEBT		
C	Debt capital by European Investment Bank (EIB) and/or other multilateral banks that are mainly self-financing	30.3%
D	Debt capital by national or international development banks (e.g. EBRD, KfW in Germany, etc.)	12.2%
EQUITY		
2	Equity capital by individual affiliated investors (e.g. contractors, operators and other project sponsors)	5%

Category of debt/equity capital		% Share of capital on total project investment
		All Snapshots
3	Equity capital by infrastructure funds and/or other long term financial equity investors	20.2%
PUBLIC SECTOR SUPPORT		
G2	Public sector funds / Government subsidies	32.3%



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DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 1

Project: Road 01

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award 1992		0,635	0,82	0,813	0,467	0,045	0,347	0,673	1,000	0,640	B _{EN} -	A	B _{EN} +	B _{EN} -
Snapshot: Inauguration 2003		0,665	0,81	0,813	0,070	0,045	0,347	0,673	1,000	0,640	B _{EN}	A	B _{EN} +	B _{EX} -
Snapshot: Crisisstart 2008		0,742	0,80	0,813	0,500	0,045	0,333	0,667	1,000	0,300			B _{EN} +	B _{EX} -
Snapshot: Crisispeak 2012		0,600	0,79	0,813	0,500	0,045	0,333	0,667	1,000	0,300			B _{EN} +	B _{EX} -
Snapshot: Reporting2014		0,600	0,81	0,813	0,500	0,045	0,333	0,667	1,000	0,300			B _{EN} +	B _{EX} -
Alternative 1 Changes:														
	Comments:													
Alternative 2 Changes:														
	Comments:													
Alternative 3 Changes:														
	Comments:													

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 1

Project: Road 02

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award2009		0,483	0,47	0,188	-0,212	0,257	1,000	0,667	1,000	1,000	C	C	C+	B _{EX} -
Snapshot: Inauguration 2011		0,517	0,48	0,188	-0,212	0,257	1,000	0,667	1,000	1,000	C	C	C+	B _{EX} -
Snapshot: Reporting2014		0,483	0,51	0,417	0,333	0,257	1,000	0,667	1,000	1,000			C+	B _{EX} -
Alternative 1 Changes:														
		Comments:												
Alternative 2 Changes:														
		Comments:												
Alternative 3 Changes:														
		Comments:												

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 2

Project: Road 03

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Construction2009		0,492	0,60	0,75	-0,090	0,124	0,333	0,667	1,000	0,735	BEX-	C+	C+	BEX-
Snapshot: Reporting2015		0,583	0,60	0,75	0,000	0,124	0,333	0,667	1,000	0,735			C+	BEX-
Alternative 1 Changes:														
		Comments:												
Alternative 2 Changes:														
		Comments:												
Alternative 3 Changes:														
		Comments:												

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 2

Project: Tram 01

Scenario \ Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
										Cost	Time	Traffic	Revenue
Snapshot: Award2006	0,650	0,74	0,813	-0,018	0,162	0,923	0,249	1,000	0,868	B _{EN} ⁻	B _{EN} ⁻	B _{EN} ⁻	B _{EN} ⁺
Snapshot: Before renegotiation 2014	0,617	0,72	0,813	0,000	0,162	0,770	0,249	0,563	0,868			B _{EN} ⁻	B _{EN} ⁺
Snapshot: After renegotiation 2014	0,617	0,72	0,813	0,000	0,181	0,847	0,249	1,000	0,868			B _{EN} ⁻	B _{EN} ⁺
Alternative 1 Changes:													
Comments:													
Alternative 2 Changes:													
Comments:													
Alternative 3 Changes:													
Comments:													

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 3

Project: Road 04

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award 1987		0,637	0,70	0,563	0,304	0,155	0,333	0,667	1,000	0,466	B _{EN} ⁻	A	B _{EN} ⁺	A-
Snapshot: Inauguration1999		0,637	0,70	0,563	0,287	0,155	0,333	0,667	1,000	0,300	B _{EN} ⁻	A	B _{EN} ⁺	B _{EN} ⁻
Snapshot: Reporting2015		0,600	0,68	0,563	0,111	0,155	0,333	0,667	1,000	0,300			B _{EN} ⁺	B _{EN} ⁻
Alternative 1 Changes:														
		Comments:												
Alternative 2 Changes:														
		Comments:												
Alternative 3 Changes:														
		Comments:												

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 3

Project: Tram 02

Scenario \ Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
										Cost	Time	Traffic	Revenue
Snapshot: Award2008	0,633	0,76	0,688	0,447	0,129	0,667	0,385	1,000	0,720	BEN-	BEN-	BEN-	BEN+
Snapshot: Reporting 2014	0,600	0,76	0,688	0,444	0,129	0,667	0,385	1,000	0,720			BEN-	BEN+
Alternative 1 Changes:													
	Comments:												
Alternative 2 Changes:													
	Comments:												
Alternative 3 Changes:													
	Comments:												

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 4

Project: Tunnel 01

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award 1999		0,608	0,81	0,563	0,428	0,107	0,000	0,444	1,000	0,848	B _{EN} -	C+	C+	C+
Snapshot: Inauguration 2005		0,635	0,79	0,563	0,528	0,107	0,000	0,444	1,000	0,848	B _{EN} -	C+	C+	C+
Snapshot: Reporting2014		0,717	0,82	0,563	0,333	0,107	0,000	0,273	1,000	0,848			C+	C+
Alternative 1 Changes:														
Comments:														
Alternative 2 Changes:														
Comments:														
Alternative 3 Changes:														
Comments:														

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

ROOM 4

Project: Road 05

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award	2006	0,767	0,82	0,688	0,146	0,218	1,000	0,000	1,000	1,000	B _{EN} -	A	B _{EN} +	B _{EN} +
Snapshot: Before crisis	2011	0,775	0,82	0,688	0,135	0,218	1,000	0,000	1,000	1,000	B _{EN} -	A	B _{EN} +	B _{EN} +
Snapshot: Inauguration	2013	0,658	0,83	0,688	0,240	0,218	1,000	0,000	1,000	1,000	B _{EN} -	A	B _{EN} +	B _{EN} +
Snapshot: Reporting	2015	0,658	0,83	0,563	0,268	0,218	0,833	0,000	0,500	1,000			B _{EN} +	B _{EN} +
Alternative 1 Changes:														
Comments:														
Alternative 2 Changes:														
Comments:														
Alternative 3 Changes:														
Comments:														



DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

AUDITORIUM

Project: Metro 01

Scenario	Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
											Cost	Time	Traffic	Revenue
Snapshot: Award 2009		0,600	0,63	0,625	0,779	0,188	0,870	0,446	1,000	1,000	C+	C+	C+	C+
Snapshot: Inauguration 2015		0,583	0,67	0,625	0,704	0,187	0,870	0,446	1,000	1,000	C+	C+	C+	C+
Alternative 1 Changes:														
		Comments:												
Alternative 2 Changes:														
		Comments:												
Alternative 3 Changes:														
		Comments:												

DAY 1 – ROUND TABLE WORKSHOP | SCENARIO SCORING

AUDITORIUM

Project: Bridge 01

Scenario \ Indicator Value	FEI	InI	GI	CSI	RSI	RAI	RRI	IRA	FSI	TIRI Rating			
										Cost	Time	Traffic	Revenue
Snapshot: Award1994	0,540	0,66	0,750	0,246	0,417	0,333	0,667	1,000	0,796	BEX+	BEX+	BEX	A-
Snapshot: Inauguration1999	0,540	0,69	0,875	0,582	0,417	0,433	0,659	1,000	0,796	BEX+	BEX+	BEX+	A-
Alternative 1 Changes:													
	Comments:												
Alternative 2 Changes:													
	Comments:												
Alternative 3 Changes:													
	Comments:												

DAY 1 – ROUND TABLE WORKSHOP | TIRI RATING ASSESSMENT TABLES

ROAD INFRASTRUCTURE PROJECTS

The following tables present the system of Transport Infrastructure Resilience Indicator (TIRI) rating per figure-of-merit (outcome) for road infrastructure projects.

Table R1: TIRI Rating Cost-to-Completion for Road infrastructure Projects

	FEI	InI	GI	CSI	RSI	FSI
Max Resilience						
Rating: A	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150^*$	
A- for InI $\in [0,61, 0,65]$ and FSI $>0,60$						
Endogenous Vulnerability						
Rating: B _{EN}						
B _{EN} ⁺ for larger values of GI, CSI & RSI	$\geq 0,60$	$\geq 0,65$	$\geq 0,700$	$[0,333, 0,000]$	$[0,150, 0,000]$	
B _{EN} ⁻ for smaller values of GI						
B _{EN} ⁻ for InI $\in [0,61, 0,65]$ and FSI $>0,60$						
Exogenous Vulnerability						
Rating: B _{EX}						
B _{EX} ⁺ for larger values of GI, CSI & RSI	$[0,50, 0,60]$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150$	$\geq 0,600$
B _{EX} ⁻ for smaller values of CSI & RSI						
B _{EX} ⁻ for InI $\in [0,61, 0,65]$ and FSI $>0,60$						
B _{EX} ⁻ when C ⁺ and FSI $>0,666$						
Poor Resilience						
Rating: C	$<0,50$	$<0,65$	$<0,500$	$<0,333$	$<0,150$	$<0,60$
C ⁺ For larger values of GI						
Rating: C	∇	∇	∇	∇	∇	$\rightarrow 0,00$

* For road projects RSI ≤ 0.400

Table R2: TIRI Rating Time-to-Completion for Road infrastructure Project

	FEI	InI	GI	CSI	RAI	FSI
Max Resilience						
Rating: A	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,000$		
A- for InI $\in [0,61, 0,65]$ and FSI $<0,60$ or GI $>0,600$						
Endogenous Vulnerability						
Rating: B _{EN}						
B _{EN} ⁺ for larger values of GI	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$[0,000, 0,200]$	$<0,500$	
B _{EN} ⁻ for smaller values of GI						
Exogenous Vulnerability						
Rating: B _{EX}						
B _{EX} ⁺ for larger values of GI	$[0,50, 0,60]$	$\geq 0,65$	$\geq 0,500$	$[0,000, 0,200]$	$<0,500$	
B _{EX} ⁻ for InI $\in [0,61, 0,65]$ and GI $>0,500$						
Poor Resilience						
Rating: C	$<0,50$	$<0,65$	$<0,500$	$<0,00$	$>0,500$	$>0,600$
C ⁺ for larger values of GI or InI						

Table R3: TIRI Rating Actual vs Forecast Traffic for Road infrastructure Projects

	FEI	InI	GI	CSI	RSI	RAI
Max Resilience Rating: A A- for InI $\in [0,61, 0,65]$ and GI>0,600 A- for RAI<0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150^*$	
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI and/or CSI and/or RSI B _{EN} ⁺ for RAI>0,500 B _{EN} ⁻ for smaller values of GI B _{EN} ⁻ for RAI <0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	[0,000, 0,333]	[0,000, 0,150]	
Exogenous Vulnerability Rating: B _{EX} B _{EX} ⁺ for larger values of GI or CSI or RSI B _{EX} ⁻ for RAI <0,500 B _{EX} ⁻ for InI $\in [0,61, 0,65]$ and GI>0,500	[0,50, 0,60]	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150$	>0,500
Poor Resilience Rating: C C+ for larger values of GI or InI C+ for RAI>0,500	<0,50	<0,65	<0,500	<0,00	<0,150	<0,500

Table R4: TIRI Rating Actual vs Forecast Revenue for Road infrastructure Projects

	RRI	RAI	GI	CSI	RSI	FSI
Max Resilience Rating: A If Traffic Rating A, then Revenue Rating A And Figure-of-Merit for Traffic outcome B A- for any RRI RAI, GI, CSI, FSI smaller	$\geq 0,666$	$\geq 0,666$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150^*$	$\geq 0,666$
Endogenous Vulnerability Rating: B _{EN} And Figure-of-Merit for Traffic outcome A, B or C B _{EN} ⁺ for larger values of RAI and/or GI and/or CSI and/or RSI and/or FSI B _{EN} ⁻ for smaller values of RAI and/or GI and/or CSI and/or RSI and/or FSI	<0,666	[0,500, 0,600]	$\geq 0,500$	[0,000, 0,333]	$\geq 0,150$	$\geq 0,500$
Exogenous Vulnerability Rating: B _{EX} And Figure-of-Merit for Traffic outcome B or C B _{EX} ⁺ for larger values of RAI and/or GI and/or CSI and/or RSI and/or FSI B _{EX} ⁻ for smaller values of RAI and/or RRI and/or GI and/or CSI and/or RSI and/or FSI	$\geq 0,666$	$\geq 0,500$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150$	$\geq 0,500$
Poor Resilience Rating: C And Figure-of-Merit for Traffic outcome C C+ for larger values of RRI or RAI and/or GI and/or CSI and/or RSI and/or FSI	<0,666	<0,500	<0,500	<0,000	<0,150	<0,500

* For road projects RSI ≤ 0.400

URBAN TRANSIT PROJECTS

The following tables present the TIRI rating system per figure-of-merit (outcome) for Urban Transit (metro, tram, bus, etc.) infrastructure projects.

Table U1: TIRI Rating Cost-to-Completion for Urban Transit infrastructure Projects

	InI	GI	CSI	RSI
Max Resilience Rating: A A- for RSI $\in [0,200, 0,400]$ A- for InI $\in [0,61, 0,65]$ and all other with values as indicated A- for smaller values of CSI or RSI	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,400^*$
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI, CSI & RSI B _{EN} - for GI $\in [0,500, 0,700]$; if GI < 0,500 then C+ B _{EN} - for smaller values of CSI or RSI	$\geq 0,65$	$\geq 0,700$	[0,200, 0,333]	[0,200, 0,400]
Exogenous Vulnerability Rating: B _{EX}	FEI does not have a specific direct impact on Urban transit and InI has to have a value InI > 0,65 in all conditions leading to positive outcomes			
Poor Resilience Rating: C C+ For larger values of GI and/or CSI and/or RSI	<0,65	<0,500	<0,333	<0,150

* For urban transit projects $RSI \leq 0.933$

Table U2: TIRI Rating Time-to-Completion for Urban Transit infrastructure Projects

	InI	GI	CSI	RSI
Max Resilience Rating: A A- for RSI $\in [0,200, 0,400]$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,400^*$
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI, CSI & RSI B _{EN} - for GI $\in [0,500, 0,700]$; if GI < 0,500 then C+ B _{EN} - for smaller values of CSI or RSI	$\geq 0,65$	$\geq 0,700$	[0,200, 0,333]	[0,200, 0,400]
Exogenous Vulnerability Rating: B _{EX}	FEI does not have a specific direct impact on Urban transit and InI has to have a value InI > 0,65 in all conditions leading to positive outcomes			
Poor Resilience Rating: C C+ For larger values of GI and/or CSI and/or RSI	<0,65	<0,500	<0,333	<0,150

* For urban transit projects $RSI \leq 0.933$

Table U3: TIRI Rating Actual vs Forecast Traffic for Urban Transit infrastructure Projects

	InI	GI	CSI	RSI	LoC	RAI
Max Resilience Rating: A A- for RSI ∈ [0,200, 0,400] A- for InI ∈ [0,61, 0,65] and all other with values as indicated A- for smaller values of CSI or RSI	≥ 0,65	≥ 0,500	≥ 0,333	≥ 0,400*	≥ 0,500	
Endogenous Vulnerability Rating: B _{EN} B _{EN} + for larger values of GI, CSI & RSI B _{EN} - for GI ∈ [0,500, 0,700] or CSI or RSI ∈ [0,000, 0,200] RAI > 0,500 supports	≥ 0,65	≥ 0,700	[0,200, 0,333]	[0,200, 0,400]	≥ 0,500	≥ 0,500
Exogenous Vulnerability Rating: B _{EX}	FEI does not have a specific direct impact on Urban transit and InI has to have a value InI>0,65 in all conditions leading to positive outcomes					
Poor Resilience Rating: C C+ For larger values of GI and/or CSI and/or RSI	<0,65	<0,500	<0,333	<0,150	<0,500	<0,500

* For urban transit projects RSI ≤ 0.933

Table U4: TIRI Rating Actual vs Forecast Revenue for Urban Transit infrastructure Projects

	InI	GI	CSI	RSI	LoC	RAI	RRI
Max Resilience Rating: A If traffic rating A, then Revenue Rating A A- for RSI ∈ [0,200, 0,400] A- for InI ∈ [0,61, 0,65] and all other with values as indicated A- for smaller values of CSI or RSI	≥ 0,65	≥ 0,500	≥ 0,333	≥ 0,400*	≥ 0,500	≥ 0,500	≥ 0,500
Endogenous Vulnerability Rating: B _{EN} If traffic rating B _{EN} , then Revenue Rating B _{EN} Or At least two indicators with values greater than indicated B _{EN} + If more than two indicators with values greater than indicated InI > 0,65 always	≥ 0,65	0,500	0,333	0,400	0,500	0,500	0,500
Exogenous Vulnerability Rating: B _{EX}	FEI does not have a specific direct impact on Urban transit and InI has to have a value InI>0,65 in all conditions leading to positive outcomes						
Poor Resilience Rating: C C+ For larger values of GI and/or CSI and/or RSI or RRI	<0,65	<0,500	<0,333	<0,150	<0,500	<0,500	<0,500

* For urban transit projects RSI ≤ 0.933

BRIDGE & TUNNEL PROJECTS

The following tables present the system of Transport Infrastructure Resilience Indicator (TIRI) rating per figure-of-merit (outcome) for Bridge and Tunnel projects, considered as special cases of road infrastructure projects.

Table B1: TIRI Rating Cost-to-Completion for Bridge & Tunnel infrastructure Projects

	FEI	InI	GI	CSI	RSI	LoC	FSI
Max Resilience Rating: A A- for InI $\in [0,61, 0,65]$ and LoC>0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,250^*$	$\geq 0,500$	
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI, CSI & RSI B _{EN} ⁻ for smaller values of GI, CSI & RSI B _{EN} ⁻ for InI $\in [0,61, 0,65]$ and LoC>0,500 If GI< 0,400 then C+	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	[0,000, 0,333]	[0,150, 0,250]	$\geq 0,500$	
Exogenous Vulnerability Rating: B _{EX} B _{EX} ⁺ for larger values of GI, CSI & RSI B _{EX} ⁻ for smaller values of CSI & RSI B _{EX} ⁻ for InI $\in [0,61, 0,65]$ and LoC>0,500 B _{EX} ⁻ when C+ and FSI > 0,666 or LoC>0,700	[0,50, 0,60]	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,150$	$\geq 0,700$	$\geq 0,600$
Poor Resilience Rating: C C+ For larger values of GI	<0,50	<0,65	<0,500	<0,333	<0,150	<0,500	<0,60

* For bridge & tunnel projects $RSI \leq 0.533$

Table B2: TIRI Rating Time-to-Completion for Bridge & Tunnel infrastructure Projects

	FEI	InI	GI	CSI	RSI	LoC	RAI	RRI	FSI
Max Resilience Rating: A A- for InI $\in [0,61, 0,65]$ and LoC>0,700 or GI>0,600	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,250$	$\geq 0,250^*$	$\geq 0,500$	RAI <0,500 Or/and RRI <0,500		$\geq 0,500$
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI or LoC B _{EN} ⁻ for smaller values of GI C+ for GI <<0,500 & RAI >0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	[0,000, 0,250]	$\geq 0,250$	$\geq 0,500$	RAI <0,500 Or RRI <0,500		$\geq 0,500$
Exogenous Vulnerability Rating: B _{EX} B _{EX} ⁺ for larger values of GI B _{EX} ⁻ for InI $\in [0,61, 0,65]$ and GI>>0,500 or LoC>>0,500	[0,50, 0,60]	$\geq 0,65$	$\geq 0,500$	$\geq 0,000$	$\geq 0,250$	$\geq 0,500$	RAI <0,500 Or RRI <0,500		>0,500
Poor Resilience Rating: C C+ For larger values of GI or InI or LoC	<0,50	<0,65	<0,500	<0,00	<0,250	0,500	RAI <0,500 Or RRI <0,500		>0,600

* For bridge & tunnel projects $RSI \leq 0.533$

Table B3: TIRI Rating Actual vs Forecast Traffic for Bridge & Tunnel infrastructure Projects

	FEI	InI	GI	CSI	RSI	LoC	RAI	FSI
Max Resilience Rating: A A- for InI $\in$ [0,61, 0,65] and GI>0,600 A- for RAI<0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,250^*$	$\geq 0,500$	<0,500	>0,500
Endogenous Vulnerability Rating: B _{EN} B _{EN} ⁺ for larger values of GI and/or CSI and/or RSI B _{EN} ⁻ for smaller values of GI B _{EN} ⁻ for InI $\in$ [0,61, 0,65] and GI>0,500 & LoC>>0,500 C+ if RSI<0,150 & LoC<0,500 & RAI<0,500	$\geq 0,60$	$\geq 0,65$	$\geq 0,500$	[0,000, 0,333]	[0,150, 0,250]	$\geq 0,500$	<0,500	>0,500
Exogenous Vulnerability Rating: B _{EX} B _{EX} ⁺ for larger values of GI or CSI or RSI B _{EX} ⁻ for InI $\in$ [0,61, 0,65] and GI>0,500	[0,50, 0,60]	$\geq 0,65$	$\geq 0,500$	$\geq 0,333$	$\geq 0,250$	$\geq 0,500$	<0,500	>0,500
Poor Resilience Rating: C C+ For larger values of GI or InI or LoC	<0,50	<0,65	<0,500	<0,00	<0,150	0,500	<0,500	>0,500

* For bridge & tunnel projects $RSI \leq 0.533$

Table B4: TIRI Rating Actual vs Forecast Revenue for Bridge & Tunnel infrastructure Projects¹

	InI	RRI	RAI	GI	CSI	RSI	FSI
Max Resilience Rating: A If Traffic Rating A, then Revenue Rating A And Figure-of-Merit for Traffic outcome B A- for any RAI, GI, CSI, FSI smaller	$\geq 0,65$	$\geq 0,666$	<0,500	$\geq 0,500$	$\geq 0,333$	$\geq 0,250^*$	$\geq 0,666$
Poor Resilience Rating: C And Figure-of-Merit for Traffic outcome C C+ for larger values of RAI and/or GI and/or CSI and/or RSI and/or FSI	<0,65	<0,500	<0,500	<0,500	<0,000	<0,150	<0,500

* For bridge & tunnel projects $RSI \leq 0.533$

¹ Due to limited information and data, the B rating cannot be assessed for revenue. However, the respective assessment for roads could be applied for the characteristics (indicator values) of bridge and tunnel projects. TIRI Rating with respect to the figure-of-merit Actual vs Forecast Traffic is also important and should be taken into account in the revenue rating.



DAY 1 – Themes of Discussion **BENEFIT Matching Framework Policy Guiding Tool** **The Transport Infrastructure Resilience Indicator (TIRI) Rating**

Breakout Groups

Description of groups

- There will be 5 groups of 20 people (see room assignment table).
- In each group there are two case owners, who share the time of presentation.

Materials

- Information on the cases is supplied also in hard copy in the room.
- TIRI rating tables are supplied in your participant booklet
- Scoring sheets are supplied in your participant booklet to register indicators, outcome ratings per various scenarios to be tried out.

Room Rounds: There will be one change of rooms. Your Room Assignment is in your participant booklet.



DAY 2 – Themes of Discussion **BENEFIT Lessons Learnt, Policy Recommendations** **Applicability of the BENEFIT Policy Guiding Tool**

There will be two World Café type rounds. In each round three topics are discussed. You will participate in two topics per round. The topics set per round are presented below.

First Round:

Room 1

The financial economic conditions in the country of implementation influence the likelihood of a project reaching its specified outcomes (cost and time to completion, forecast vs actual traffic and revenues).

Research within BENEFIT identified that:

1. Supportive institutions may compensate for a lesser financial economic context.
2. Project governance may also compensate for less supportive institutions.
3. A mature project with a good implementation structure under good project governance has a high probability of reaching its pre-specified outcomes.

Would you agree with the above?

Room 2

Project maturity (sound design, permits, transport network integration, project integration into local/regional/national development) have been identified as important factors in achieving project outcomes.

While the above has been well acknowledged, why do less mature projects go ahead?

Auditorium

Appropriate risk allocation has been found to improve the likelihood of reaching project outcomes. More specifically, it was found that when risk is appropriately transferred to the private sector, demand forecasts have been more accurate (if not conservative).

Within BENEFIT appropriate risk allocation has been assessed as the combination of the position of the infrastructure project in the transport network (also considering its scope: business development vs service provision) and the competence of the private partner.

In addition, it was also found that:

Guide on Discussions

- In PPPs more than appropriate risk is transferred over the private sector leading in many cases to “risk creep”, i.e. while risk is transfer against risk premiums, in the end the public sector ends up bearing the risk.
- The amount of government guarantees put in place to support PPPs has been such that the financing of these projects resembles public financed projects.

Under these conditions, are PPPs viable solutions?

Second Round:

Room 1

The probability of reaching projects outcomes (cost to completion, time to completion, actual vs forecast traffic) was found to be more connected to project maturity and structure rather than the financing / project delivery model. Furthermore, there was no evidence that PPPs perform better than public projects with respect to cost and time to completion and traffic targets.

Does this mean that PPPs have no value to offer?

Room 2

Systematic recording and sharing of transport (and other) infrastructure project information has once again been recognized as a limitation in the understanding of factors influencing performance. There is also evidence, that the lack of systematic recording and sharing of project information leads to loss of experience and lessons learnt.

What are the barriers to a data collection system?

Would the BENEFIT Policy Guiding Tool (TIRI rating) improved through more detailed data/input?

- Advantages /disadvantages of its present configuration (may be applied using publically available data so useful for planning and outsider stakeholders/ less accurate)
- Advantages / disadvantages of developed based on more detailed data (more cumbersome / more accurate)

Auditorium

The BENEFIT Matching Framework employs the Revenue Robustness Indicator and the Remuneration Attractiveness Indicator to represent:

- The Project's revenue streams associated with the risk of the respective revenue streams and the cost coverage these revenues achieve.
- The project's income streams associated with the risk the respective income streams and the cost coverage these incomes achieve.

Notably, while income and revenue streams may differ, in most PPPs they are found to coincide.

Along with the Financing Scheme Indicator, these three indicators were found to induce incentives and trade-offs between potential outcomes. Given this fact, the three indicators may be used to create the conditions to achieve particular outcomes.

How can decision makers exploit this?

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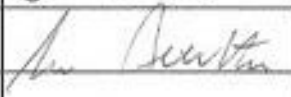
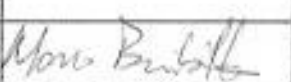
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93	V.	M.		

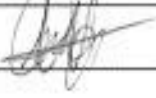
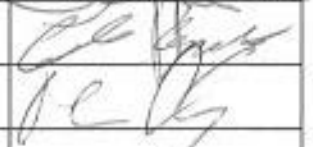
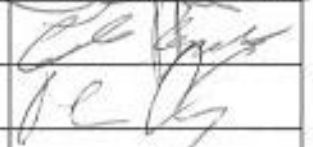
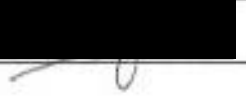
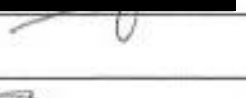
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Annex 6. Participants Lists

BENEFIT FINAL EVENT
DAY 1: 14th September 2016

LIST OF ATTENDEES

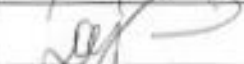
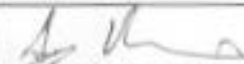
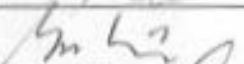
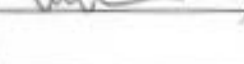
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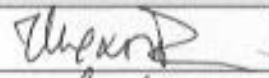
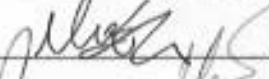
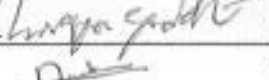
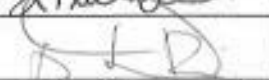
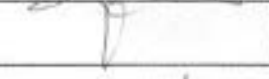
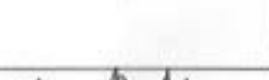
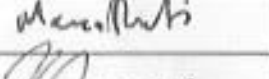
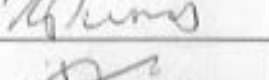
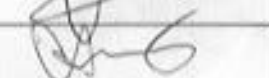
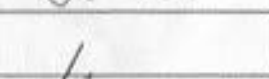
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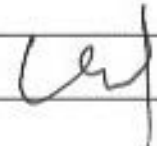
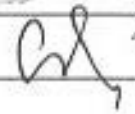
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92	Va[REDACTED]	K[REDACTED]	[REDACTED]	[REDACTED]	
93	Va[REDACTED]	Ma[REDACTED]	[REDACTED]	[REDACTED]	
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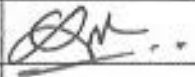
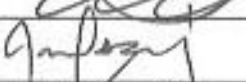
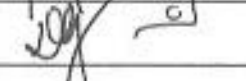
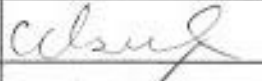
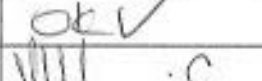
BENEFIT FINAL EVENT
DAY 2: 15th September 2016

LIST OF ATTENDEES

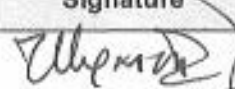
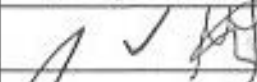
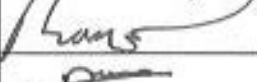
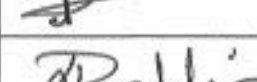
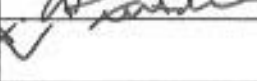
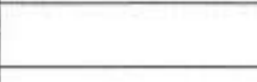
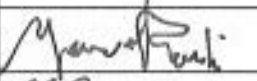
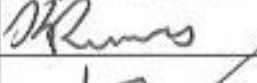
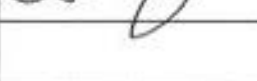
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70	Purves	Kirsteen	EUROCONTROL	kirsteen.purves@eurocontrol.int	
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92	Va[REDACTED]	K[REDACTED]	[REDACTED]	[REDACTED]	
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100	Vu[REDACTED]	Ar[REDACTED]	[REDACTED]	[REDACTED]	

End of Report