

Innovative Ways of Sustainable Financing Urban Public Transport

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1. Introduction

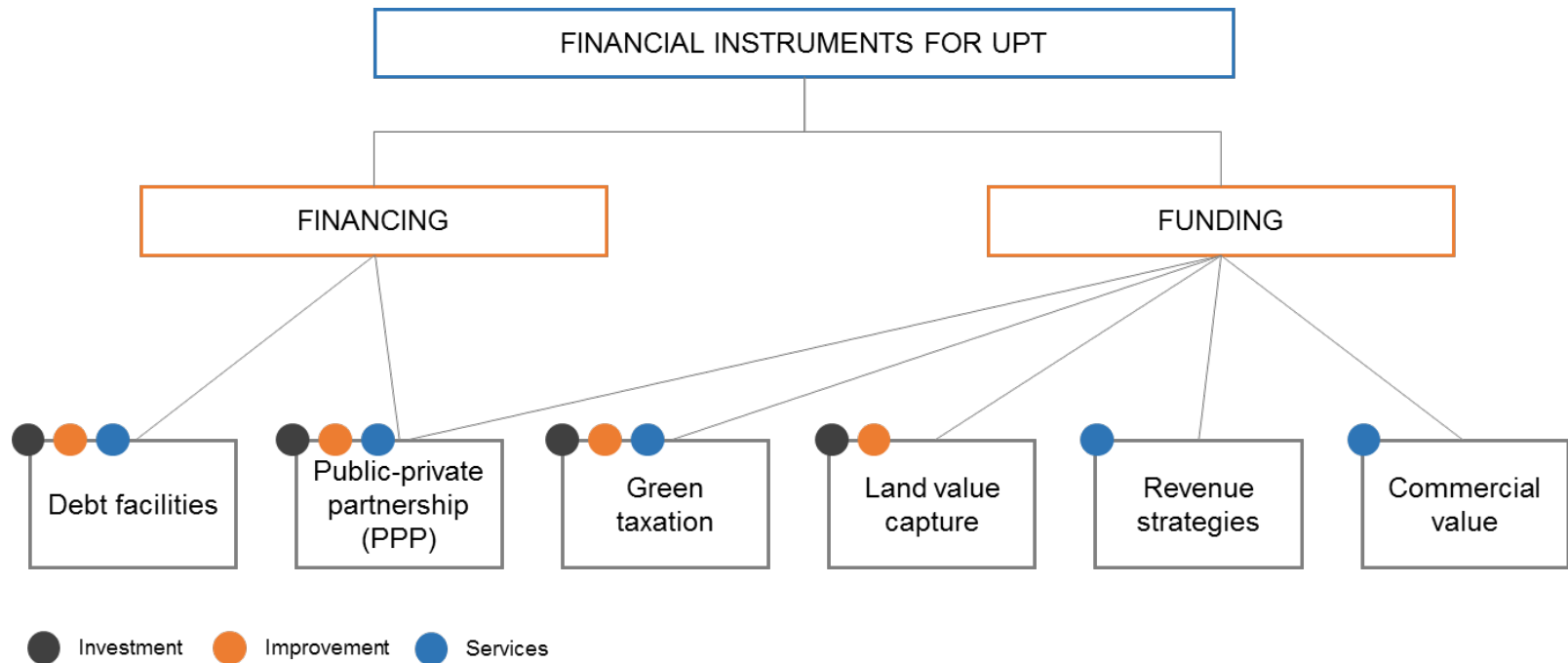
Challenges:

- Reducing congestion, a striking counter effect of urban growth
- EU goals: low-carbon, climate-resilient and resource-efficient economy
- Trends: growing urban population, ageing population, changing demand patterns, reluctance to increase fares, breakthrough technologies
- EC estimates a **significant increase in funding gap requirements in UPT** for the period 2010-2040
- **Fare revenues cover 48% of operating costs** on average for EMTA members

These challenges require an **active research on innovative ways to sustainably financing UPT within an evidence-based and context-specific approach**

Analysis of UPT financing instruments

Taxonomy



2. Financing challenges for UPT

Urban Mobility Trends

Demographic change

- **Ageing** population, increase of highly subsidised tickets
- Changing **patterns** for young-adults in urban areas, with less need for car ownership

Digitalisation and e-ticketing

- Integration of **real-time information** across multiple modes, responsive travel behaviour ...but need of large
- Facilitates **fare integration** across different modes and areas investments and risk of technological obsolescence
- Enables **pricing options** adapted to particular users (dynamic pricing, premium services, etc.)

New technologies for cleaner transport

- Electric and hybrid vehicles, ...but need of large investments

On-demand services and shared mobility

- Emerging **mobility services**, sharing trips (car pooling, ride sharing, etc.), sharing vehicles (car sharing, bike sharing, etc.)
- UPT as the backbone of sustainable mobility

Mobility-as-a-Service

- Tailored and integrated end-to-end trip planning, booking, electronic ticketing, and payment services across all modes of transportation, public or private
- Need to rethink UPT pricing and business model

Threat

Opportunity

Financial trends

> Sustainable finance:

- Emerging concept that encompasses financing for **sustainable growth with robust financial performance**
- High-Level Expert Group on Sustainable Finance to advice on developing a comprehensive EU strategy on sustainable finance.

> Green finance:

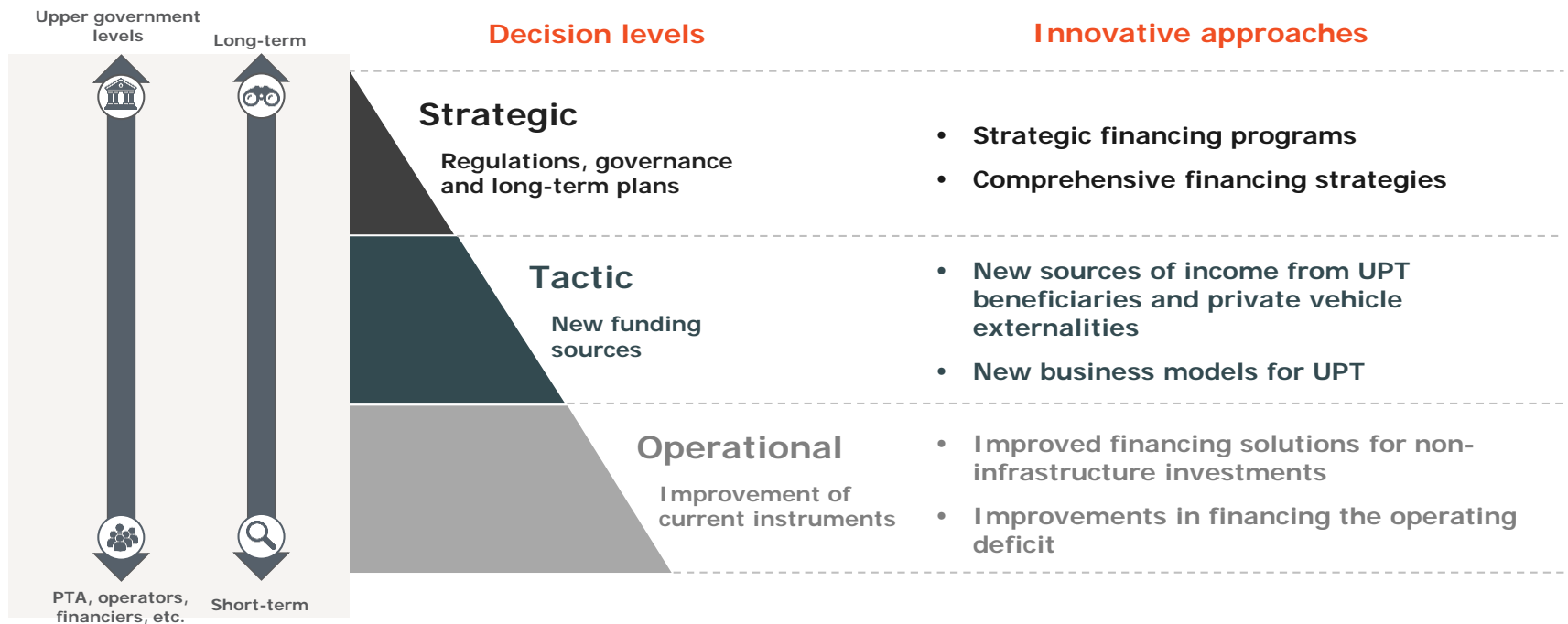
- Financial market for projects **with environmental and social goals**. A wide range of instruments (e.g. green bonds, climate finance)
- The challenge is to capture private funds for UPT through green finance instruments
- EU Green Bond Standard on the horizon

3. Innovative Approaches for sustainably financing UPT

Innovative approaches

Innovation can be defined as “change that creates a **new dimension of performance**” and “purposeful, systematic innovation begins with the analysis of the **opportunities**” (Druker, 1985)

Trends in urban mobility and **financial practice** bring several opportunities for UPT.



Strategic Innovation > Specific regulations for sustainable UPT investments

Motivation:

- In the EU, the Stability and Growth Pact (SGP) is based on the accounting rules established in the European System of Accounts (ESA).
- These rules do not take into account to what extent infrastructure creation can be useful for the economy. The **ESA rules entail a barrier for long-term finance**.

Innovation rationale:

- Classification of sustainable investments (“**long-term growth enhancing investments**”).
- Productive projects, sustainable and fair and not generate important macroeconomic imbalances.
- **List of projects across EU** contributing to a sustainable future (environmental and social).
- **Criteria:** efficiency, financial sustainability, intergenerational fairness and overall macroeconomic sustainability.
- Objective: **encouraging private funding** streams towards investments targeting emissions reduction and energy efficiency.
- UPT projects fulfilling the criteria would have a **special status regarding the deficit/debt constraints**.

Strategic Innovation > Development of comprehensive financing strategies

Motivation:

- Improvements brought about by new infrastructure and vehicles must come along with a commitment by the relevant public administrations to provide the necessary financing during the project cycle. Such commitments are linked to the “**deficit perspective**”
- **Private investors are increasingly interested in UPT** because: 1) stability and predictability in revenues from the major transport project in urban areas; and 2) social and environmental benefits (framework of Social Corporate Responsibility).

Innovation rationale:

- Setting out and affordable **plan to finance the investment program as well as provide the required certainty-level for the potential investors.**
- **Plan strongly linked with** the Sustainable Urban Mobility Plans (**SUMPs**)
- Optimal combination of funding sources. A robust combination should **diversify risk**. Taking into account **intergenerational fairness.**
- These financing strategies applicable: 1) **large cities; 2) strong consensus on long-term plans for UPT; and 3) Mobility Agency.**

Tactical Innovation > New sources of income from UPT beneficiaries and private vehicle externalities

Funding sources involving indirect beneficiaries of the UPT system emerge as an innovative approach for many cities. **“Who benefits-pays” principle.**

Land value capture.

Commonly used in new urban developments or in areas with low supply of UPT because the increase in property values can be derived more easily and this improves acceptability.
Better for **developing cities or large investments in the UPT network**

Green taxation (based on negative externalities of vehicles).

Revenues from green taxation may decrease over time if demand is elastic enough.
Applicable where traffic externalities are an important issue.

Funding from indirect beneficiaries will be particularly suited **for urban areas willing to expand their UPT supply.**

Tactical Innovation > Developing new business models for UPT

Motivation:

- **Technology and evolving patterns of travel behaviour** (importance of car ownership, for instance) are disrupting urban mobility.
- **The way users may choose, access and pay for transport services is also expected to change in the near future.** Integrated mobility or Mobility-as-a-Service (MaaS).

Innovation rationale:

- **Authorities and operators of UPT** should respond to the challenges that represent the upcoming mobility services by **developing new business models.**
- Public transport authorities **should collaborate or even partner up with other sustainable mobility providers.**
- For UPT to maintain a predominant market position, it is key to **work on fare and ticketing integration**, both within public transport services and concerning complementary services
- Transport agencies: pure public **transport providers > Mobility providers.**
- Public transport authorities or infrastructure owners should optimise their offer of **leasing activities and develop imaginative business models to make the most of their assets.** Commercial or leasing fees for commercial activities in their facilities.

Operational Innovation > Improvements in the financing of the operating deficit

Motivation:

- The implementation of earmarked taxes presents, however, technical difficulties, notably for **small municipalities**, which require the **financial support of upper-level institutions**.
- Current **allocation mechanisms are often aimless and non-efficient** so there is potential for innovation at this level.

Innovation rationale:

(1) **Redistributing more efficiently the total amount of available subsidy.**

Promoting efficiency of UPT operations: rewarding services that reduce their O&M cost per unit of output

Equity to ensure the acceptability of the allocation and to provide equal opportunities of certain levels service in UPT

Stable allocation of funds increases the predictability of available revenues

(2) Providing incentives in the contract to **reduce the operating cost and/or improving the performance of UPT services.**

Operational risk transference. Performance-based schemes (bonus/malus) and fixed quality requirements

(3) **Enhancing the fare policy.**

Fare review mechanisms based on clear indicators and long-term perspective (10-15 years)

Taking advantage of ICT and smart ticketing technologies

Operational Innovation > Improved financing solutions for non-infrastructure investments

Motivation:

- **Vehicle renewal and updated ticketing and information systems** constitute the main non-infrastructure investment needs.
- UPT systems are progressively advancing towards **cleaner bus fleets (electric, hybrid, etc.) and rolling stock. Extraordinary upfront cost.**
- The **technology for contactless and seamless ticketing** has been available for many years now but it is constantly evolving. These updates may lead to **large investment amounts.**
- Non-infrastructure investments may be of a **less predictable nature than infrastructure or operation expenditure and** may imply **some technological risks.**

Innovation rationale:

- 1) **Tailored financial solutions for these specific market need.** TFS are essentially a combination of loans, guarantees, equity and other risk-sharing mechanisms or blended solutions which may include a proportion of funding from grants.
- 2) The setting of **technology standards at EU level for both cleaner vehicles and ticketing and information systems** would decrease technological risks, enable larger purchase scales and increase the guarantee of debt repayment .
- 3) Cities (or transport authorities or other stakeholders) can issue bonds themselves to finance these kind of investments whenever the legal framework enables them to do so. Cities may access to the rapidly growing **green bonds market.**

4. Specific Recommendations

Strategic Specific Recommendations

Innovation level	Innovative approach	Innovative measures		
		EU/Government	Transport authorities/stakeholders	UPT authorities/stakeholders
Strategic	Development of strategic financing-programmes	<ul style="list-style-type: none"> • SR1 – Develop a strategic financing program across the EU to support well-identified UPT infrastructure priorities 		
	Development of comprehensive financing strategies	<ul style="list-style-type: none"> • SR2 – Link investment plans with financial programs. • SR3 – Engage private participation and financial institutions into financial strategies. • SR6 – Elaborate a diagnosis on the distribution of the UPT financial burden. 	<ul style="list-style-type: none"> • SR5 – Create a mobility agency 	<ul style="list-style-type: none"> • SR4 – Build credibility

Tactical Specific Recommendations

Innovation level	Innovative approach	Innovative measures		
		EU/Government	Transport authorities/stakeholders	UPT authorities/stakeholders
Tactical	New sources of incomes from UPT benefits and private vehicle externalities	<ul style="list-style-type: none"> • TR1 – Link urban developments to public transport and adopt land value capture mechanisms. 	<ul style="list-style-type: none"> • TR2 – Consider charges for congestion and/or air pollution. • TR3 – Consider workplace-parking levies. • TR4 – Link the introduction of earmarked charges to identifiable transport projects. • TR5 – Use earmarked taxation as a leverage for private funding. 	
	Developing new business models for UPT		<ul style="list-style-type: none"> • TR6 – Collaborate with new mobility providers and aggregators to find synergies. • TR7 – Consider enlarging the scope of transport authorities to integrate emerging mobility services. • TR8 – Increase the political powers of transport authorities to regulate transport services and set pricing schemes under emerging mobility concepts. 	<ul style="list-style-type: none"> • TR9 – Diversify the business portfolio of UPT operators.

Operational Specific Recommendations

Innovation level	Innovative approach	Innovative measures		
		EU/Government	Transport authorities/stakeholders	UPT authorities/stakeholders
Operational	Improvements in the financing of the operating deficit	<ul style="list-style-type: none"> • OR7 – Define new distribution formulas to finance the operational deficit. • OR11 – Set stable pricing frameworks. • OR12 – Consider the introduction of user-based fees 	<ul style="list-style-type: none"> • OR4 – Take into account the value of data when designing financial arrangements for investments in ticketing and information systems. • OR13 – Optimize UPT operation with new data streams • OR8 – Explore a new contractual arrangement with operators based on a partial transfer of operational risk and a performance-based scheme. • OR9 - Explore a new contractual arrangement with operators based on a full transfer of operational risk. • OR14 – Create an organization of municipalities intended to find synergies • OR10 – Transfer technological risk to operators or manufacturers. 	<ul style="list-style-type: none"> • OR1 – Increase the financial skills of UPT professionals
	Improved financing solutions for non-infrastructure investments	<ul style="list-style-type: none"> • OR3 – Promote the standardization of UPT technologies. 	<ul style="list-style-type: none"> • OR2 – Consider tailored financial solutions for non-infrastructure investments. • OR5 – Consider the use of green bonds for the financing of UPT. • OR6 – Explore community financing options. 	<ul style="list-style-type: none"> • OR2 – Consider tailored financial solutions for non-infrastructure investments.



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