

Financing Urban Transport: The Importance of E-Ticketing to Public Transport in Romania

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EBRD Basics

- **Mandate to promote transition to market economies**
- **Encourage environmentally sound and sustainable development**
- **AAA-rated international financial institution founded in 1991, owned by 61 governments and two inter-governmental institutions**
- **EUR 20 billion capital**
- **The largest lender and private equity investor in Central & Eastern Europe and CIS**



Perspectives on Urban Transport Sector in EBRD Region



Urban Transport's high stakes

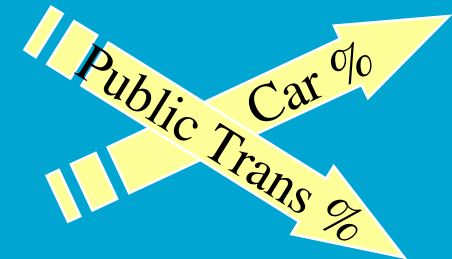
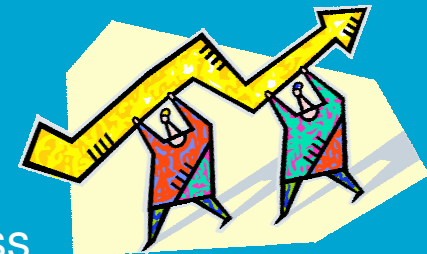


- Estimated 1% of total European regional GDP lost to urban congestion alone (EU Urban Transport Green Paper 2007)
- Growing awareness of UT sector's contribution to Climate Change Agenda
- Global car emissions projected to double from 42 gigatonnes CO₂ in 2000 to 84 gigatonnes CO₂ by 2050 (Stern Review, 2007)
- Emissions from motorized transport as share of total CO₂ emissions in cities is estimated to be already over 40% in the Bank's countries of operation
- *Growing need for better efficiency in UT systems*



Major Trends for Urban Transport in Eastern Europe, Russia and CIS countries

- Mounting challenges
 - As GDP per capita income moves beyond \$5,000 per year, car ownership increases rapidly (Chamon & Mauro, IMF, 2008)
 - Car ownership still growing at 4-6% annually across all major cities – will flatten out at 500-600 cars/1000 population – *we're only 50% there...*
 - Inverse relationship between growth in private car modal share growth and decline of public transport modal share -- steady 1-2%/year since mid-1990s - *when will it stabilize?*
 - Unsustainable trend: What city can (or would want to) double its road capacity every 10-15 years to match growth in auto-kilometers driven?
 - Negative externalities: Urban air quality and accidents a growing concern



Given this context, what questions should we be asking?

- How can UT systems be made more efficient?
- How to contribute to sustainable mobility and at the same time find achievable financing structures?
- What role do market-based instruments have? For which type of projects?
- If the private sector is used, how to secure value for money?
- How to foster competitive, commercialized management approach vs. 'old-guard' public sector control?
- How to leverage constrained public budgets most effectively?



EBRD Approach to Urban Transport Investments Needs

<i>Sector Need</i>	<i>EBRD Approach</i>
Out-dated Public Transport systems	New efficient rolling-stock backed by Public Service Contract (PSC)
	Track/power supply replacement backed by PSC
	Competitive route tendering with private sector or “commercialized” public sector operators backed by PSC
Urban Road Capacity and/or Chronic Congestion	Active Traffic Management, including parking management, based on multi-year performance-based contracting
	New road and/or rehabilitation based on Performance Based Management and Maintenance of Roads (PMMR)
	Road pricing schemes where appropriate
Very large CAPEX needs for new road or PT infrastructure	PPP structures where appropriate
Inefficient Public Transport Ticketing	E-ticketing out-sourced on concession/management contract basis to private supplier-operator consortia



Why implement e-ticketing now?

- **Public Transport Operators feel under-compensated by Municipalities for transporting social (discounted) passengers**
- **Municipalities/Governments feel uncertain how much to compensate PT operators because paper or cash-based ticketing systems make accurate statistics on passenger counts very difficult to determine**
- **Cash leakage/fare evasion weakens the economics of the sector**
- **E-ticketing technology has become mainstream and affordable**
- **Operators are less creditworthy without e-ticketing since banks need to be able to model clear and accurate revenues before making loans**



EBRD-Favoured Approach: Institutional & contractual arrangements for E-Ticketing

- **Specialist E-ticketing company as “Service Provider”:**
 - Municipality tenders for long-term (6-10 years) service provision contract to specialist e-ticketing companies
 - Winning company finances up-front costs (approx. EUR 5M for 1 million population city)
 - Specialist company installs/operates/maintains all system hardware and software



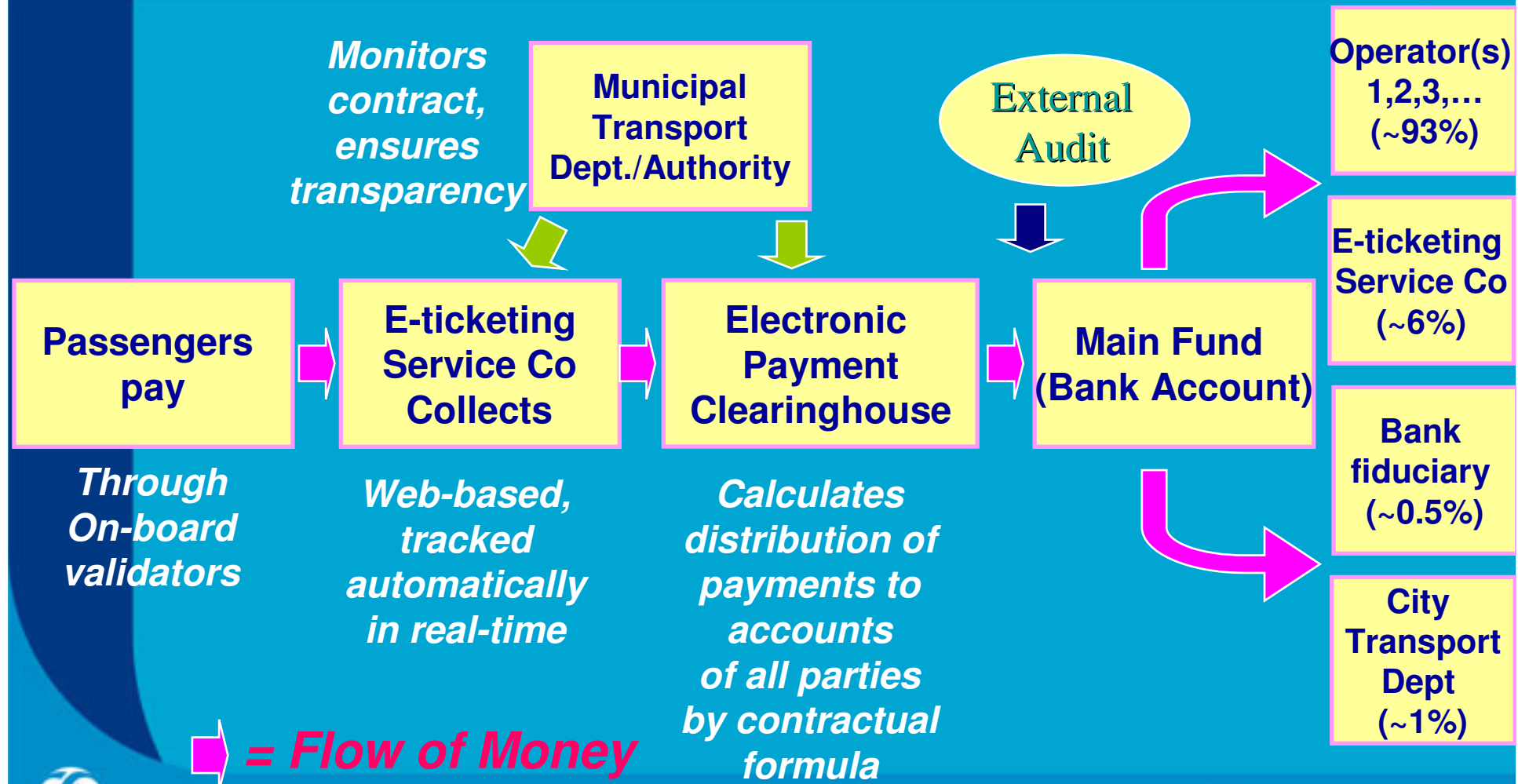
EBRD-Favoured Approach: Institutional & contractual arrangements for E-Ticketing (cont.)

- **Specialist E-ticketing company as “Service Provider”:**
 - Company recuperates its investment and all operations and maintenance costs by retaining a percentage (5-10%) of daily revenues collected through e-ticketing system
 - Company staffs, operates, collects fare revenues, and maintains new system
 - City monitors performance to ensure contractual compliance

The approach increases revenues per unit significantly by reducing “cash leakage” & fare evasion by 20-30% when moving from coin or coin-based paper ticket systems to electronic collection)



Contractual & Institutional Set-Up for E-Ticketing with Service Provider



Contractual mechanics of out-sourced model for E-ticketing system

- An independent fiduciary agent (bank) receives all revenues processed through the validators.
- At this stage, the Municipal Transport Authority then tells the fiduciary agent (bank) to pay the various operators based on their contractually agreed (PSC) operation plans.
- The bank as fiduciary agent first keeps its contractually determined fee (approx. 0.5 percent) of the total revenues, and distributes the rest of funds to all involved parties.

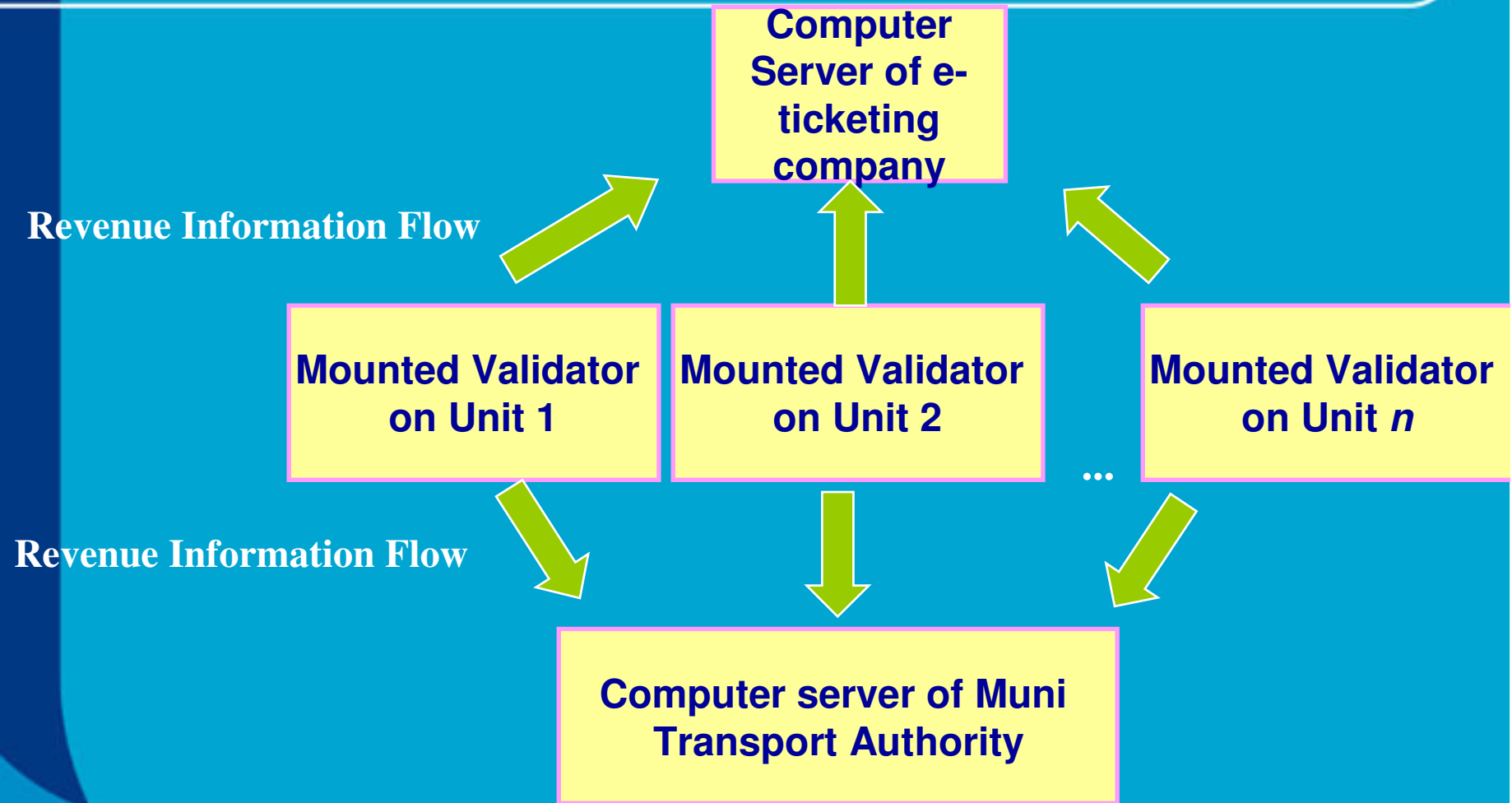


Revenue verification of system revenues

- The revenues from each particular validator terminal should match the electronic records of the passengers entering the system.
- The electronic records are actually independently verified in two locations.
- The electronic data is downloaded to mainframe computers/servers at both the e-ticketing company and the Municipal Transport Authority
- This sort of electronic verification is an effective mechanism in building the confidence level of all parties in the fare collection system.



Revenue verification of system revenues



Basic example: Estimate for medium-sized Romanian City

IN LEI	CURRENT SITUATION WITH BASIC TICKETING SYSTEM	SITUATION WITH E-TICKETING SYSTEM
BASIC PARAMETERS OF PUBLIC TRANSPORT OPERATIONS		
FLEET SIZE	250	250
ANNUAL PASSENGERS	50,000,000	50,000,000
ANNUAL SYSTEM REVENUES	40,000,000	50,000,000
(ANNUAL VALUE LOST DUE TO FARE EVASION & CASH LEAKAGE)	10,000,000	0
NUMBER OF STAFF EMPLOYED BY OPERATOR IN TICKETING SYSTEM (TICKET SALES AND TICKETING CONTROLS)	150	0
COST OF RUNNING OLD SYSTEM	2,160,000	0
UP-FRONT INVESTMENT COST OF NEW E-TICKETING SYSTEM FOR (VALIDATORS, COMMUNICATIONS, SOFTWARE, HARDWARE)		10,000,000
ANNUAL VALUE OF FEE CHARGED BY E-TICKETING COMPANY (EXAMPLE OF 6% OF ALL SYSTEM REVENUES) -- i.e., COST OF NEW SYSTEM TO PUBLIC TRANSPORT OPERATOR		3,000,000
ANNUAL VALUE OF FEE CHARGED BY FIDUCIARY AGENT (BANK) (0.5%)		250,000
ANNUAL AMOUNT TRANSFERRED TO MUNICIPAL TRANSPORT DEPT. (OPTIONAL, 1%)		500,000
ANNUAL BENEFIT OF NEW E-TICKETING SYSTEM TO PUBLIC TRANSPORT OPERATOR (NEW REVENUE + SAVINGS FROM ELIMINATING INTERNAL COST OF RUNNING OLD SYSTEM - 6% FEE TO E-TICKETING CO. - 0.5% TO FIDUCIARY AGENT - 1% TO CITY)		8,410,000



Auditing the system

- External auditing will be done regularly and at random.
- The selected auditor cannot have any contractual or commercial ties to any of the parties involved in the new ticketing system, including with the bank, the municipality, or operator(s)



E-ticketing system should be multi-functional, multi-sectoral

- Smart cards used across all public transport modes, and city parking services – an important system integrator
- In Hong Kong, the Octopus card permits users to make purchases at shops as well as pay for public transport and parking, by allowing up to US\$125 equivalent of stored value to be placed on the card
- Outside payment applications include supermarkets, convenience stores, fast food franchises, vending machines, photocopiers, cinemas, and sports venues



EBRD's role in the new e-ticketing systems

- Providing Technical Assistance to cities with setting up institutional framework, division of roles between operators and e-ticketing company (e.g., who does ticketing control?), technical specifications of new system, and tender documentation
- Once the e-ticketing company has been selected, EBRD can finance the up-front investment of the new system



A few parting comments on lending to the urban transport systems in current environment

- *(Dedicated & Secure) Cash (Flow) is King:*
 - PSC/e-ticketing/tariff reforms help guarantee sustainability and self-financing of transport companies
 - EBRD can consider easier access to finance for companies/cities if reforms like e-ticketing, PSCs, and corporate governance measures are implemented thus reducing final burden on municipal finances



THANK YOU

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about the ebrd

The European Bank for Reconstruction and Development was established in 1991 when communism was crumbling in central and eastern Europe and ex-soviet countries needed support to nurture a new private sector in a democratic environment. Today the EBRD uses the tools of investment to help build market economies and democracies in 27 countries from central Europe to central Asia.

The EBRD is the largest single investor in the region and mobilises significant foreign direct investment beyond its own financing. It is owned by 60 countries and two intergovernmental institutions. But despite its public sector shareholders, it invests mainly in private enterprises, usually together with commercial partners.

It provides project financing for banks, industries and businesses, both new ventures and investments in existing companies. It also works with publicly owned companies, to support privatisation, restructuring state-owned firms and improvement of municipal services. The Bank uses its close relationship with governments in the region to promote policies that will bolster the business environment.



The mandate of the EBRD stipulates that it must only work in countries that are committed to democratic principles. Respect for the environment is part of the strong corporate governance attached to all EBRD investments.

Every EBRD investment must

- Help move a country closer to a full market economy: the transition impact
- Take risk that supports private investors and does not crowd them out
- Apply sound banking principles

Through its investments, the EBRD promotes

- Structural and sectoral reforms
- Competition, privatisation and entrepreneurship
- Stronger financial institutions and legal systems
- Infrastructure development needed to support the private sector
- Adoption of strong corporate governance, including environmental sensitivity

Functioning as a catalyst of change, the EBRD

- Promotes co-financing and foreign direct investment
- Mobilises domestic capital
- Provides technical assistance



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