

Strategies for the future

Trends, options and roles

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Toll roads* – an old story

- **Treaties mentioned the use of tolls in India, before the 4th century BC.**
- **Aristotle (384 BC–322 BC) refers to tolls in Arabia and other parts of Asia.**
- **Germanic tribes charged tolls to travelers across mountain passes.**
- **Road tolls were used in the Holy Roman Empire in the 14th and 15th centuries.**
- **Many modern European roads were originally built as toll roads in order to cover construction costs.**
- ***Turnpike trusts* were established in England in the early 18th century (e.g. the A5).**

In the UK

- **First turnpike road authorized in 1663 for a section of the Great North Road.**
- ***Turnpike Act* established in 1706 the first *turnpike trust*, leaving a group of trustees managing a section of the London-Coventry-Chester road.**
- **Initial trusts were established for around twenty years.**
 - Expectation: trust would borrow money to repair road and repay debt over time, with the road reverting to the local authorities.
 - Reality: initial debt was rarely paid off; trusts were renewed as needed.
- **By 1825 over 1,000 trusts controlled 40,000 km of road in England and Wales.**

In the USA*

- **Throughout the 19th century between 2,500 and 3,200 private companies (?!) successfully financed, built, and operated toll roads across the country.**
- **Three especially important eras:**
 - the turnpike era of the eastern states 1792 to 1845;
 - the plank road boom 1847 to 1853; and
 - the toll road of the far West 1850 to 1902.

Tolls?

- **The existence of tolls should no longer be an issue**
- **Toll roads and toll road concessions have delivered excellent results worldwide**
- **However, the debate around their nature, their role, their existence, their owners, their managers, remain alive in many geographies**

Crucial questions

- **What are the crucial aspects at the core of road infrastructure development?**
 - Funding
 - Congestion
 - Safety and other (novel) user requirements / social pressure
 - Role of the private initiative
 - Type of private actors
 - Interaction between different actors and different schema to promote increased mobility

Sustainability of funding

How sustainable are (some or most of) the existing funding schema?

- **No tolls**

- Petrol tax
- General income tax
- Dedicated (time-based) payment

- **Availability**

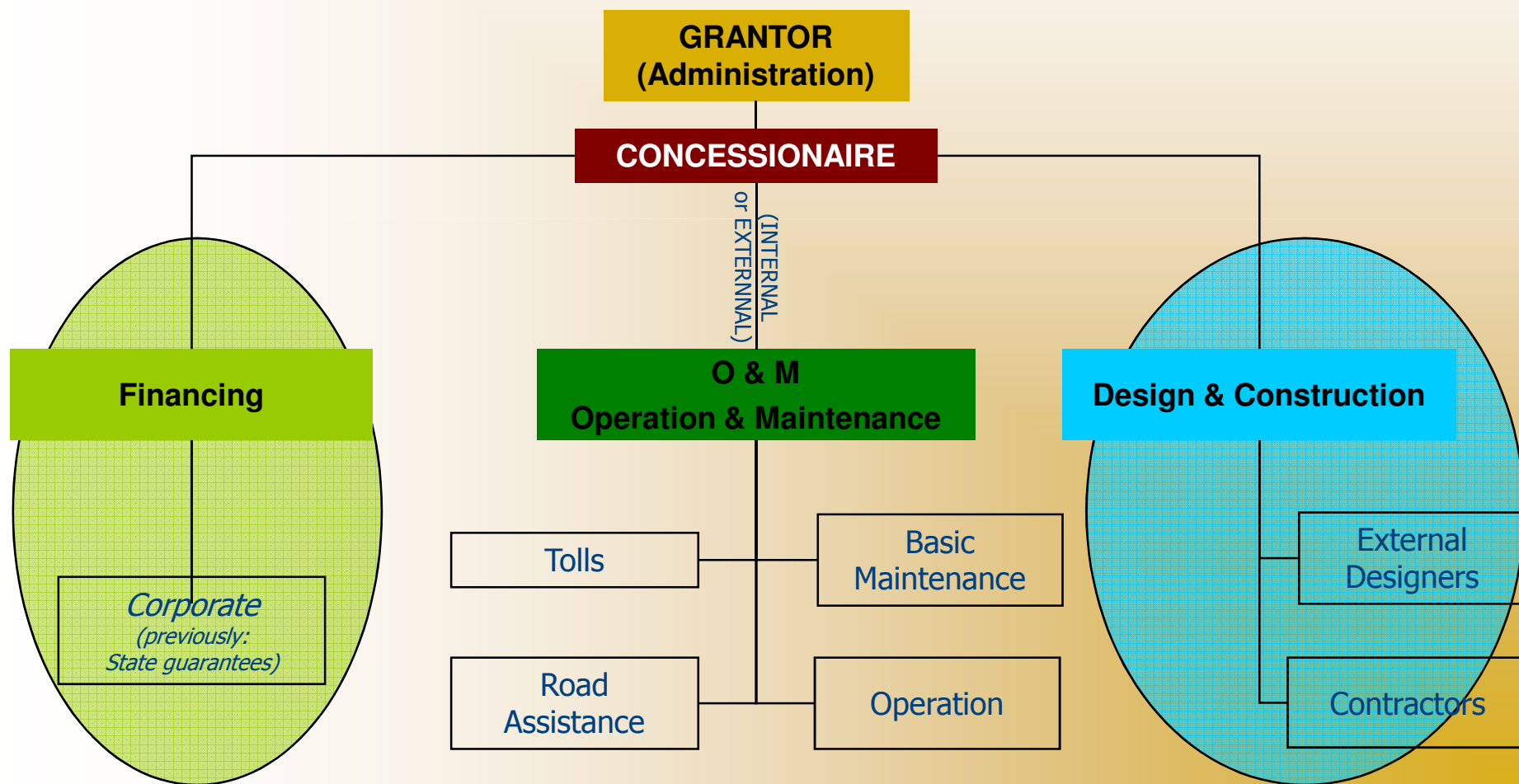
- **Shadow “tolls”**

- **Tolls**

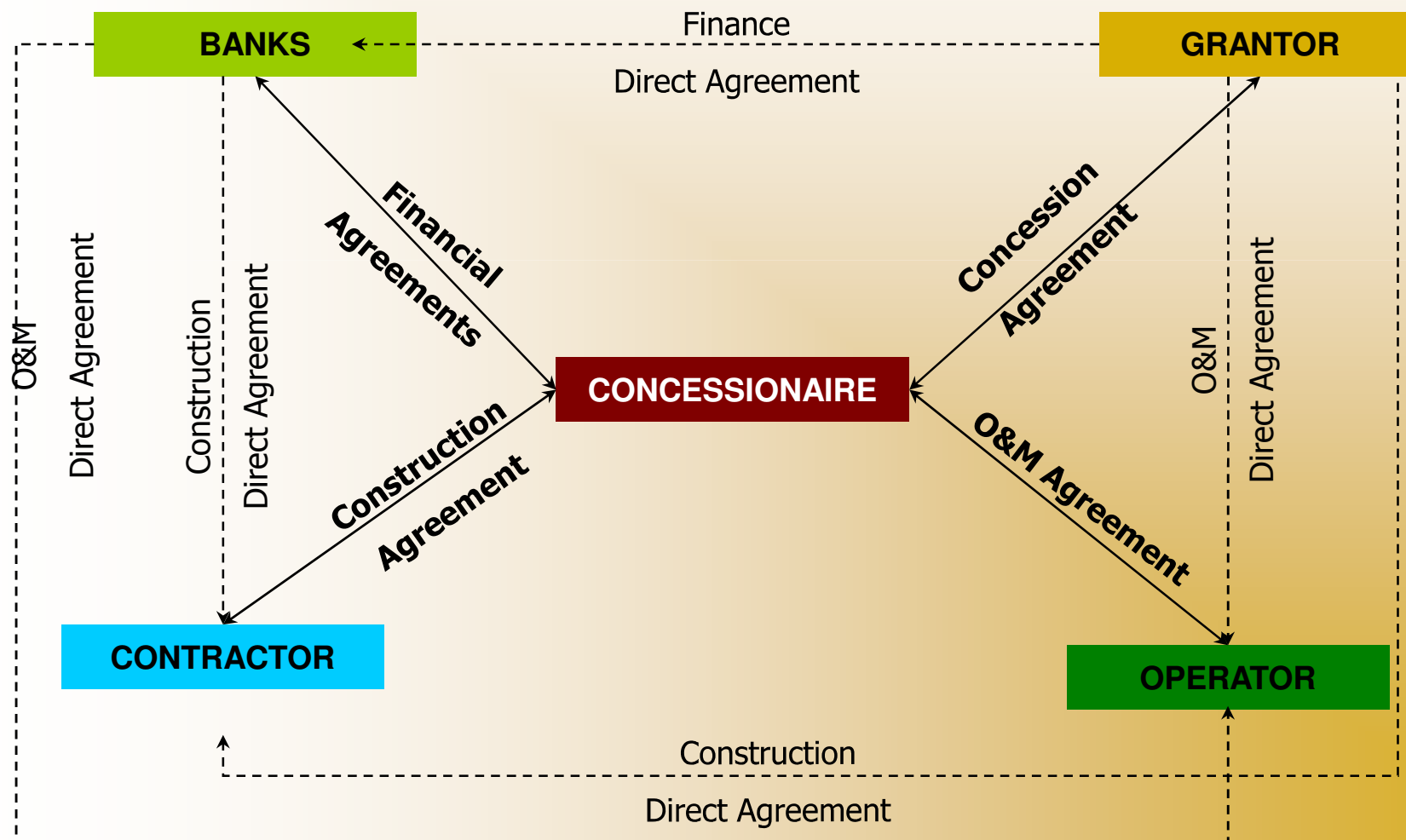
- Use of (artificially fixed) inappropriate toll tariffs
- Lack of realism in its updating
- How to solve unbalanced requirements?
 - Low demand
 - Disproportionately expensive infrastructures

Traditional European concession model:

Atlantia(IT), ASF(FR), Abertis(SP), Brisa(PT)



Typical PPP-PFI structure



Proper allocation of risks

Risk	Case	Grantor	Concessionaire
Design/Exprop./Construction	Traditional		██████████
	PPP-PFI		██████████
Operation	Traditional		██████████
	PPP-PFI		██████████
Environment	Traditional		██████████
	PPP-PFI	██████████	
Traffic	Traditional		██████████
	PPP-PFI		██████████
Planning	Traditional		██████████
	PPP-PFI	██████████	
Financing	Traditional		██████████
	PPP-PFI		██████████
<i>Force Majeur</i>	Traditional	██████████	
	PPP-PFI	██████████	

Options for the future?

- **Real toll PFI concessions**
- **Increasing technology intensity**
- **New and better services**
- **More, more sophisticated and more useful information**
- **Higher interaction between modes (?)**