

Sharing Resources in Logistics

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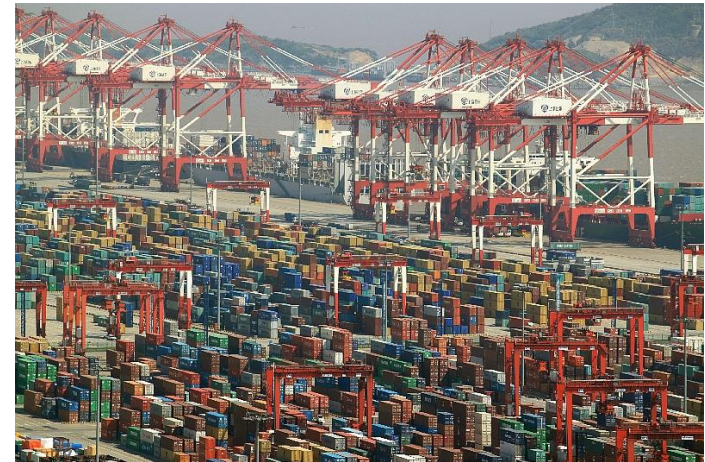
Starting point of considerations

- Logistics is a value creation process by which a spatial and temporal balance between offer and demand is achieved.
- Today, logistics/Supply Chain Management shows a high division of labor as the distance between consumption and production is huge.
- Today, logistics is cheap – and what about tomorrow?

Purpose of our endeavour

- To aim at identifying the major reasons and drivers for the increasing frequency of scarceness situations in logistics processes and value creation systems.
- To understand the mechanisms that finally lead to the observed shortage in logistics resources.
- To suggest strategies to overcome the resource shortage situation

How to improve the efficient utilization of logistics resources?



- Are the limit performances of these logistic systems already achieved?
- Are these logistic systems operating at optimal efficiency?

From demand orientation to bottleneck situations

Workload dependency of the logistics sector

- Capacity of logistics resources adapts to demand
 - Increasing demand: extension of resource capacity
 - Decreasing demand: no adjustment
 - “External” or “quantitative” capacity extension
- Examples (EU-2?)
 - Annual increase of transport performance: 1.5% - 3% (in tkm)
 - Increase of number of operated heavy trucks since 2005: 10%
 - Increase of extend of newly used logistics real estate: 81%
- Global perspective: Increase of TEU in the global system (since 2005): 35%

Market trends

- Deregulation of markets gave access to infrastructure but led to reduced profits for the logistics industry
- Increasing prices for energy consumption and emissions impact the financial situation of the logistics industry
- Pressure for internalizing external costs has consequences for the profitability of the logistics industry

Tragedy of the commons in logistics

Logistics resources = common pool resources?

- Especially with respect to man-made (anthropogenic) scarceness the shortage of resources is the result of a long lasting and uncontrolled usage of resources that originally were not scarce but nobody felt responsible to take care for such a resource because the considered resource has had no explicit owner –
Common Pool Resource

Historically grown responsibilities for the provision of logistics resources

Resource category	Ownership	Funding	Access
Naturally common property (e.g. air, water)	General public	---	Unlimited and uncontrolled
Infrastructures & networks for transport or communication, security and emergency services	General public of a nation	Public funding	Almost unlimited and uncontrolled
private resources (e.g. supra-structures or transport means)	Private investors	Private investments	Limited and controlled

Installation of resource control systems

- Environmental resources and infrastructures are controlled by the installation of access control systems (e.g. major roads by toll systems)
- What about blocking the utilization of logistics resources in order „to allow recovery“?
- What about market-based assignment of utilization opportunities?

Current ownership structures of logistics resources

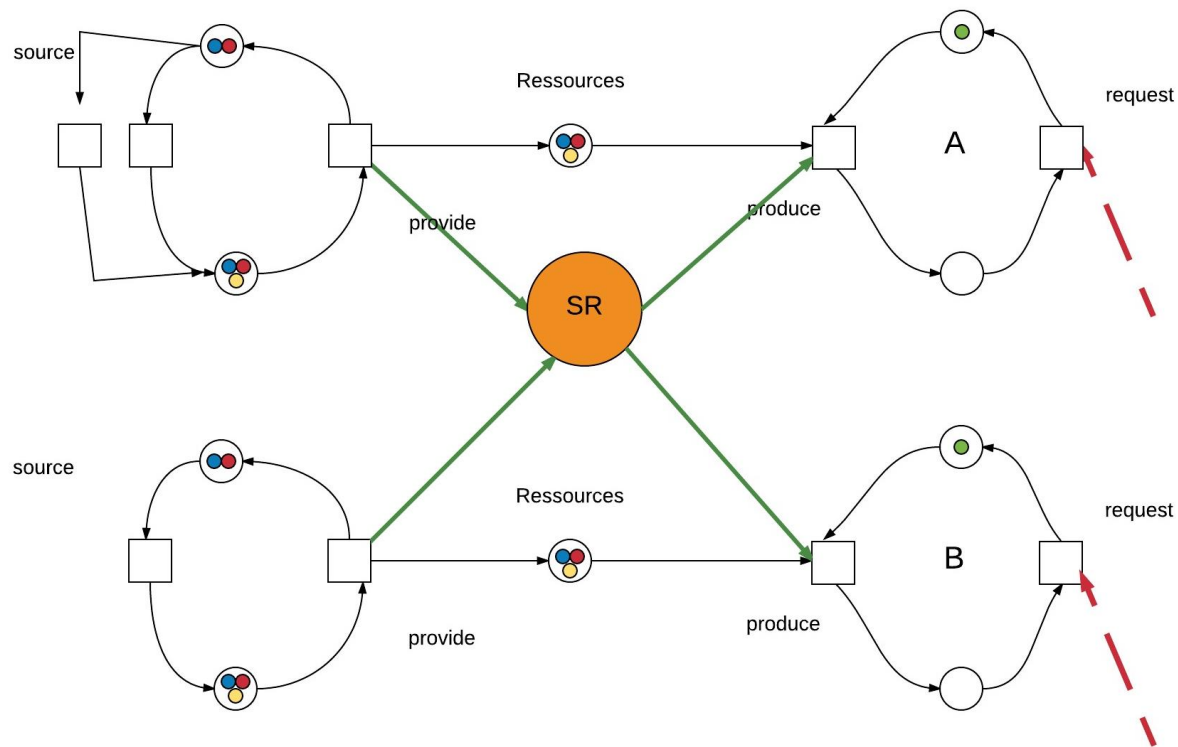
Resource category	Ownership	Funding	Access
Environmental (e.g. air, water)	General public	Public funding and private investors (A)	Controlled (B)
Infrastructure networks for transport or communication, security and emergency services	General public of a nation and private investors (C)	Public funding and private investors (D)	Controlled (E)
private (e.g. supra-structures and/or mobile resources)	Private	Private investors	Controlled

A = funding for recovery and protection; B = access control is applied; C = private organizations become infrastructure owners, D = private organizations participate in funding of public infrastructure, (E) Access to infrastructure is subject of control now.

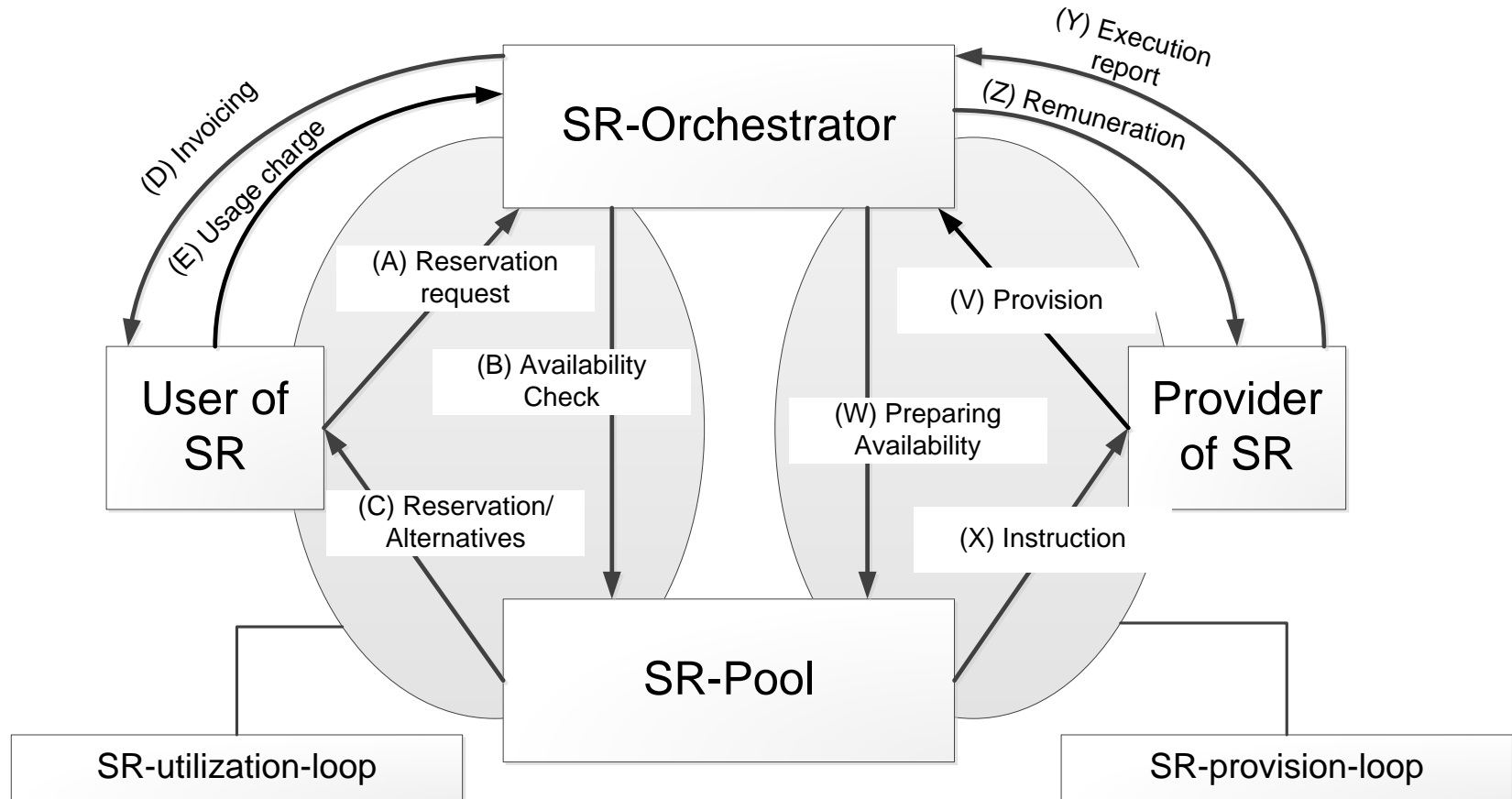
Current paradigms to cope with scarce resources

- Increase efficiency of individual organizational units – lean approach
- Increase the efficiency of within and between multiple organizational units – vertical integration or SCM-approach
- So far, no creation of a resource pool that allows horizontal, vertical and even lateral access to a pool of resources

Breaking barriers of Lean and SCM



A shared resources orchestrator as new governance structure?

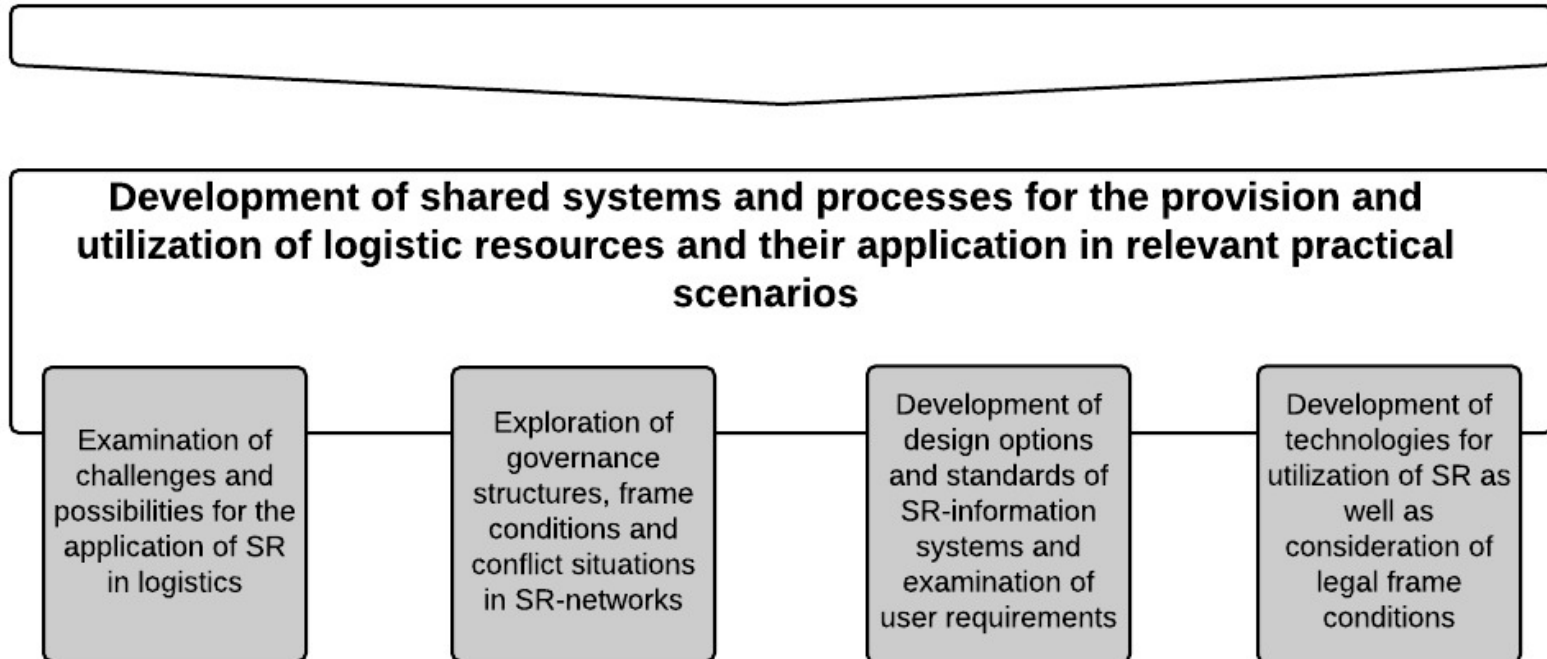


You may say, nothing new in Rialto

- Resource Sharing
 - making resources accessible for other companies / actors
 - Cross-enterprise balancing of demand and offer of capacity
- Examples
 - Groupage systems
 - JetTainer (special containers for air traffic, “belly freight”)
 - Code Sharing in commercial airlines
 - ...
- Technological prerequisites
 - the concept of “cloud logistics”
 - sophisticated communication networks / infrastructures

A research agenda

Concept for a future-oriented resource management in logistics



Thank you for your attention!

**SHARING
IS CARING**

