



COllaborative COncepts for COmodality (CO³)

Test Applications & Implementations

$$g_n(s) = \sum_{j=0}^{n-1} \frac{|S|(n-|S|-1)}{n!} (v(SU(j)) - v(S))$$



Today's message



Peter Drucker:
Cooperation,
Coordination and
Communication
(1993)



Michael Porter:
Clusters and the New
Economics of
Competition
(1998)

- Welcome to the age of co-opetition!
- **Vertical** collaboration (1980 - ...):
 - Between subsequent actors in the same supply chain
 - Between suppliers, manufacturers and customers
 - EOQ, outsourcing, VMI
 - Driven by ICT (extended enterprise)
- **Horizontal** collaboration (2006 - ...):
 - Between companies in the same market
 - Alliances, partnerships, clusters, network organizations
 - Collaborate in some markets, compete in others



(Gary Hamel,
1998)

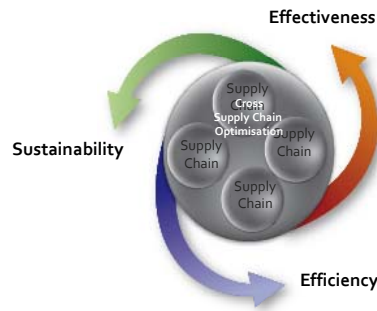


$$g_n(s) = \sum_{j=0}^{n-1} \frac{|S|(n-|S|-1)}{n!} (v(SU(j)) - v(S))$$

Supply chain development



- Only cross-company collaboration, consolidation and bundling of flows can simultaneously improve efficiency, effectiveness and sustainability



$$P_n(s) = \sum_{i=0}^n \frac{|S|!(n-|S|-1)!}{n!} (v(SU(i)) - v(S))$$



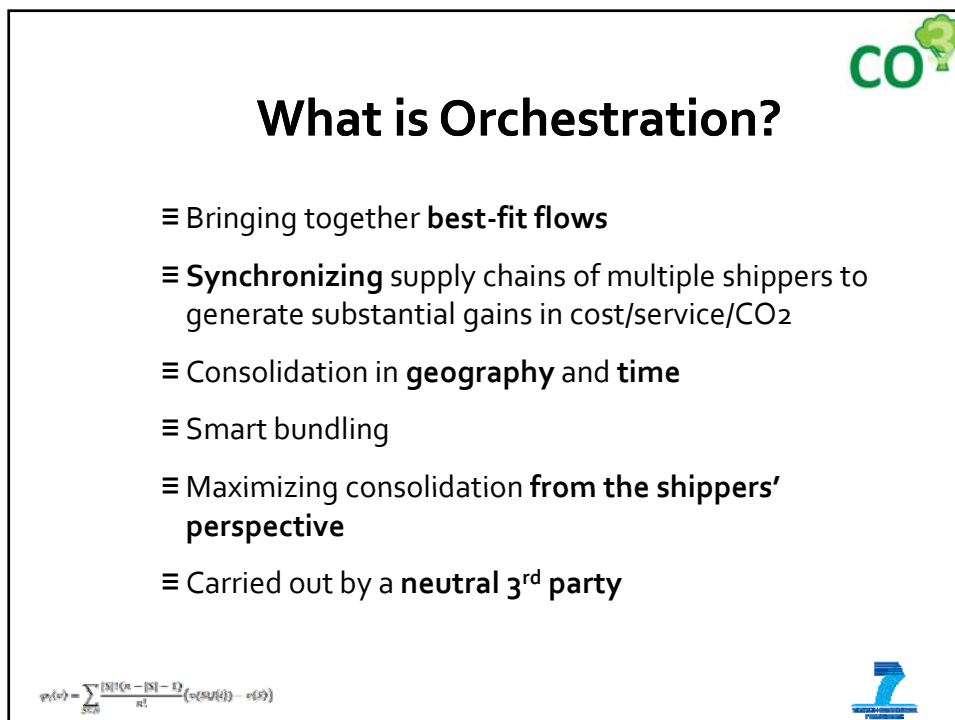
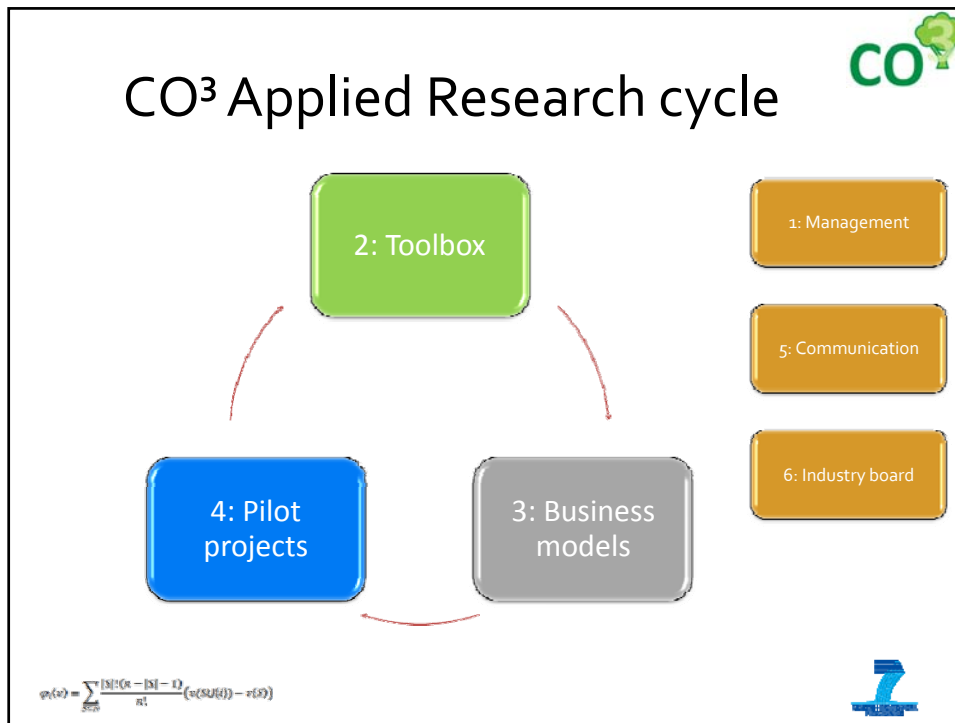
Between September 2011-2014, the European Union will actively promote and support collaborative logistics



"Collaborative Concepts for Co-Modality (CO³)" is a EU sponsored consortium to create a legal framework, a scientific body of knowledge, an educational package and a number of inspiring pilot implementations for orchestrated horizontal collaboration in transport and logistics. The ultimate goal is to make the European transport market more competitive and more sustainable.

$$P_n(s) = \sum_{i=0}^n \frac{|S|!(n-|S|-1)!}{n!} (v(SU(i)) - v(S))$$





An Orchestrator provides



- ≡ Impartial management of the community of shippers
- ≡ Anti-trust compliance: full transparency of the community information while keeping confidential the company-specific information (multilateral contracts)
- ≡ Correct and transparent gain sharing
- ≡ Long-term stability based on contracts and methodology
- ≡ Necessary tools, admin. services, processes and ICT systems

$$p_n(s) = \sum_{i=0}^n \frac{|S|!(n-|S|-1)!}{n!} (v(SU(i)) - r(s))$$



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- ≡ World's First Cross Supply Chain Orchestrator®
- ≡ Since November 2008
- ≡ Fully neutral and independent
- ≡ Spin-off of the University of Antwerp
- ≡ Strategic Advisory Board
 - ≡ Wouter De Geest (CEO BASF Antwerpen)
 - ≡ Luc Hooybergs (CEO NIKE CSC)
 - ≡ Roger Roels (Executive Committee of DP World, Dubai)
 - ≡ Marc Vandenplas (former CEO of various LSP's)
 - ≡ Alain Verschoren (Rector University of Antwerp)

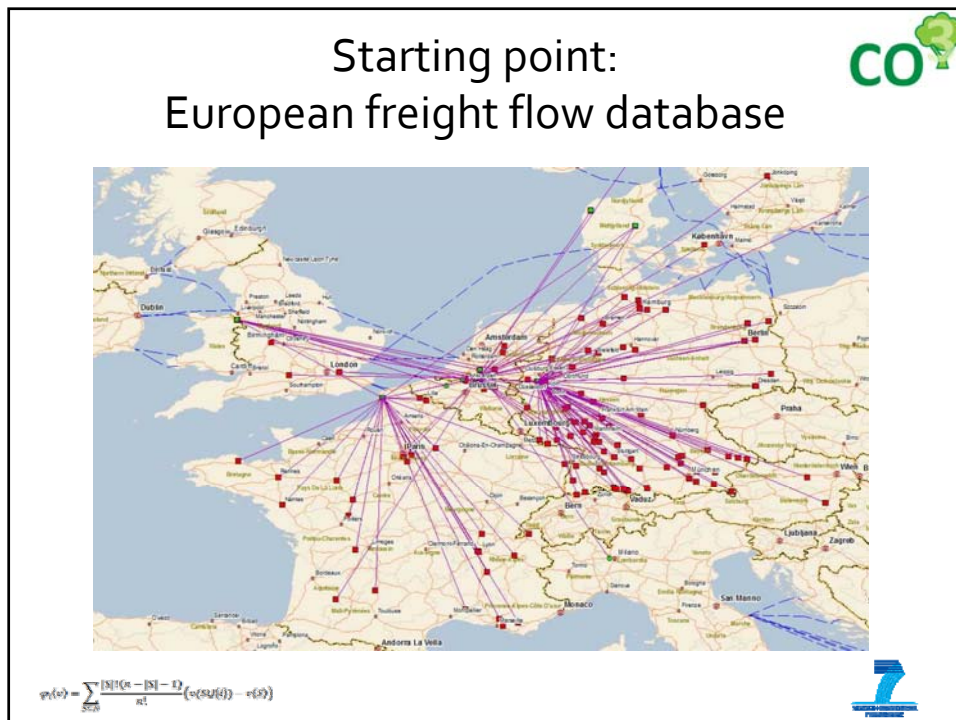
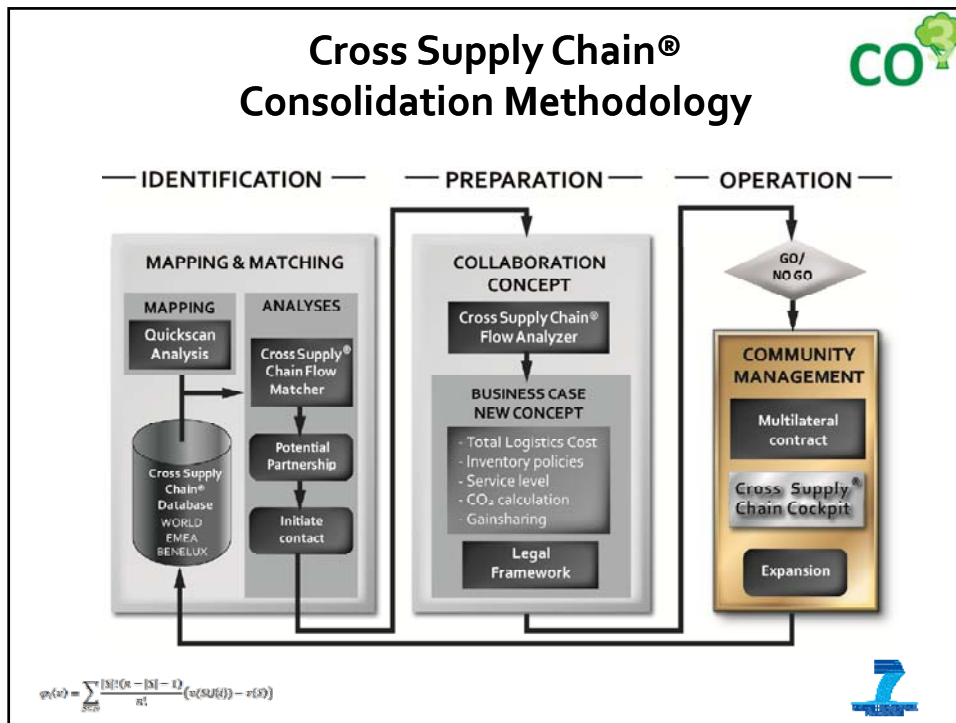


Forging New Ground

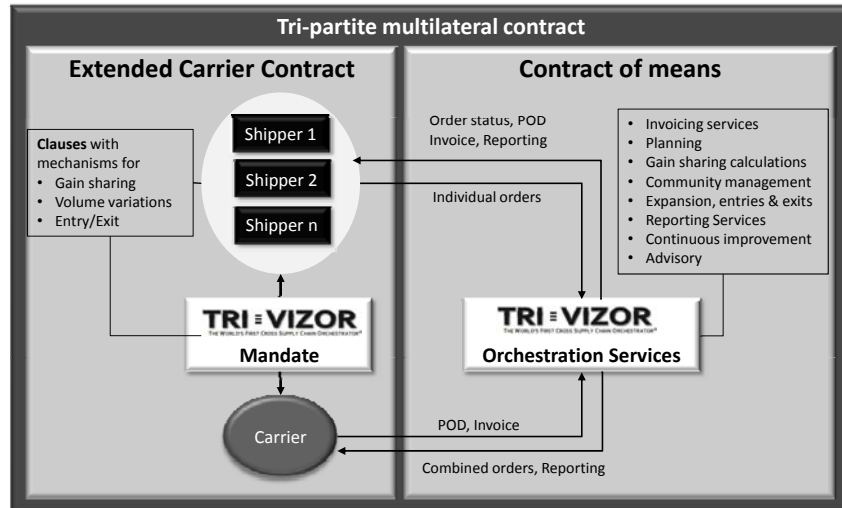
Newer concepts and technologies are emerging to help both 3PLs and shippers cope with this new, slower growth world. One of them is to create horizontal, cross-company supply chains refereed by neutral third parties. This innovation is based on the concept that by clustering specific logistics activities and consolidating supply chains, significant economies of scale can be achieved in terms of efficiency (logistics cost), effectiveness (customer service) and environmental sustainability (carbon footprint). A pioneer in this field is TRI=VIZOR, based in Belgium. According to Svan Verstrepen, founding partner for the company, the logistics sector is on the verge of a paradigm shift as some of the largest shippers in the world are gearing up to bundle their supply chains. Similar horizontal collaboration is explored in Future Supply Chain 2016, by the Global Commerce Initiative and Caggenini.

$$p_n(s) = \sum_{i=0}^n \frac{|S|!(n-|S|-1)!}{n!} (v(SU(i)) - r(s))$$





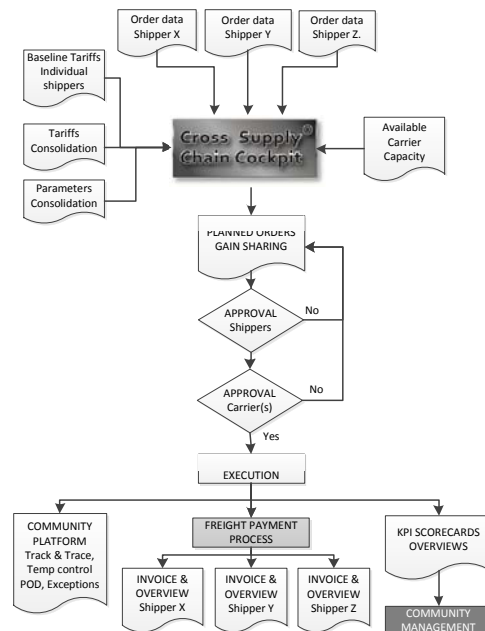
Multilateral contracts



$$q_n(s) = \sum_{i=0}^n \frac{|S|^i (n - |S| - i)}{n!} (v(SU(i)) - r(s))$$



Process / Workflow



ORDERSTATUS

- RECEIVED
- CONFIGURING
- BLOCKED
- CONTROLLED
- SCHEDULED
- AWAITING SHIPPER APPROVAL
- AWAITING CARRIER APPROVAL
- APPROVED AWAITING EXECUTION
- EXECUTION
- DELIVERED
- COMPLAINT
- POD
- INVOICED
- PAID

$$q_n(s) = \sum_{i=0}^n \frac{|S|^i (n - |S| - i)}{n!} (v(SU(i)) - r(s))$$



Cost / benefit sharing: how to divide the cake?

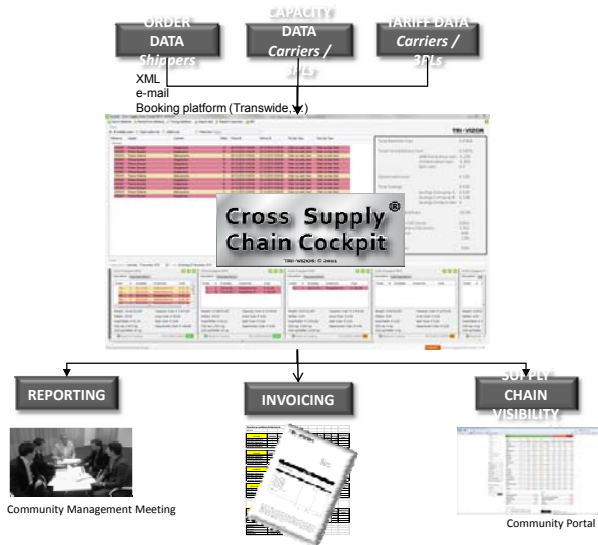


$$\phi_i(v) = \sum_{S \subseteq N \setminus \{i\}} \frac{|S|! (n - |S| - 1)!}{n!} (v(S \cup \{i\}) - v(S))$$

$$\phi_i(v) = \sum_{S \subseteq N} \frac{|S|!(n - |S| - 1)!}{n!} (v(S \cup \{i\}) - v(S))$$



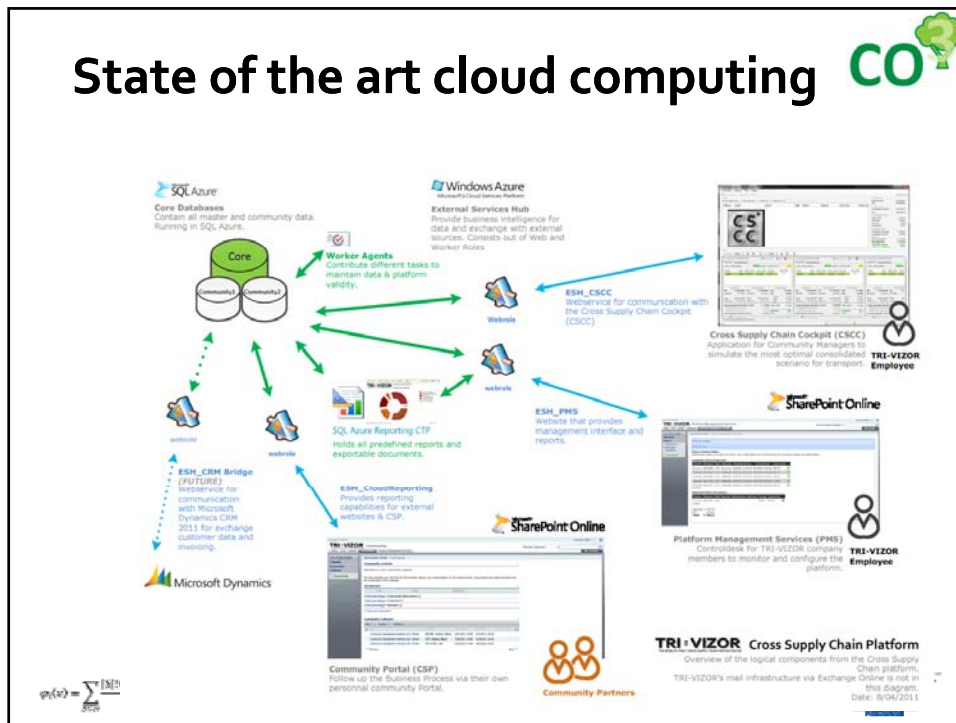
ICT systems integration



$$\phi_i(v) = \sum_{S \subseteq N} \frac{|S|!(n - |S| - 1)!}{n!} (v(S \cup \{i\}) - v(S))$$



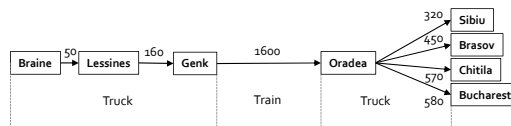
State of the art cloud computing



Operational execution



- ≡ Startup lane: Romania
- ≡ Key: combining FTL and LTL shipments to FTL shipments with double stack when possible
- ≡ Practicalities
 - ≡ How to realize an ideal combination scheme?
 - ≡ How to obtain lead time expansion where ever possible?



Departure Genk	TUE	WED	FRI	SAT
Arrival Oradea	FRI	SAT	MON	TUE
Delivery Romania	MON	MON	TUE	WED
Total lead time	5	4	3	4

$$g_n(s) = \sum_{i=0}^n \frac{|S|^i (n - |S| - i)}{n!} (v(SU(i)) - r(s))$$



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The background features a vertical strip on the left with icons of an airplane, a truck, a clock, and a globe. The main background is a faded musical score with a large pencil stroke across it.