The intersection of the supply chain and transport domains

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How to merge two different domains?

Supply Chain domain
Transport domain
Main objectives of the paper

- To describe the intersection of the two domains to have a better understanding of the different terms and models used
- To achieve a common view on the upper level of the system architecture in both domains focusing on the main roles and responsibilities
- To be part of the deliveries from the R&D project INTRANS supported by the Research Council of Norway

Methodology applied

- What are the models available and suitable within the Supply Chain Management domain?
  - Should be
    - Technology independent
    - Internationally applied
    - Stable and continuously maintained
    - Based on international or de facto standards
- What are the models available and suitable within the Transport domain?
  - Should be
    - Technology independent
    - Multimodal
    - Cover transport of goods
    - Stable and continuously maintained
    - Based on international or de facto standards
- How can these models be compared and linked/connected together?
- How can this linking or connecting build a bridge between the two domains?
Available models

SCOR - Supply Chain Operations Reference Model
www.supply-chain.org/

ARKTRANS: Norwegian multimodal framework for intelligent transport systems
www.arktrans.no

How can these models be compared?

- SCOR is a process-oriented model
- ARKTRANS is both a roles and responsibilities model, a functional model and an information model
- Solution: Transform SCOR on level 1 and 2 to a roles and responsibilities model

From a process-oriented model to a roles and responsibilities model
Transforming from processes to roles

Roles in the ARKTRANS framework
Mapping the SCOR and ARKTRANS roles

Example:

<table>
<thead>
<tr>
<th>Supply Chain (SC)</th>
<th>Transport systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td>Transport related SC responsibilities</td>
</tr>
<tr>
<td>Deliverer</td>
<td>Implement the delivery transport plans</td>
</tr>
<tr>
<td></td>
<td>Determine delivery date, consolidate orders and build loads</td>
</tr>
<tr>
<td></td>
<td>Route shipments and select transport service providers (carriers) and rate shipments</td>
</tr>
<tr>
<td></td>
<td>Pack product, load product and generate shipping documents</td>
</tr>
<tr>
<td></td>
<td>Ship product</td>
</tr>
<tr>
<td></td>
<td>Receive and verify product by customer</td>
</tr>
</tbody>
</table>

Intersection between SC domain and transport domain
Thank you for your attention!

Questions?

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