Creating an e-Freight Roadmap for Freight Transport Logistics

Background

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A value proposition for Intelligent Cargo

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17th February 2009
Content

- ICT for goods mobility (value expected from)
- EURIDICE message
- Pilot case: the Friuli Venezia Giulia regional logistic system
- Conclusions and next steps
ICT for goods mobility today: Cutting-edge technologies for top demanding customers

Technology vendors

System integrators

IT departments

Application vendors

Target: high value goods, with special requirements (precious, dangerous, perishable, needed just-in-time, ...)

What about goods that are neither precious or special? What eFreight services are needed by the majority of logistic users and operators?
What eFreight services are needed by the majority of logistic users and operators?

- A qualified answer: “nothing, thank you!”
- “Governments should stop wasting money in goods traceability projects: no one cares about that”

President of Assologistica (Italian Association of Logistic companies)
23/4/08, speech at Politecnico of Milano convention on Logistics in Port

Why:
- “Because operators already have all the data they really need.”
- “Traceability across operators would force us to link our information system into a ‘system of systems’. costly and hardly achievable.”

Missing or misdirected value proposition

Faulty architectural approach

Overshooting: offer focused on top-demanding customers

Adoption barriers: unjustified cost and complexity for average users
EURIDICE “elevator speech”:
From research vision to business message

- “Pleased to meet you …”

“In five years time, most of the goods flowing through European freight corridors will be ‘intelligent’, i.e.: self-aware, context-aware and connected through a global telecommunication network to support a wide range of information services for logistic operators, industrial users and public authorities.”

“(we are building) a cargo centric information chain that offers automated end-to-end information about the logistic supply chain based on existing technologies and standards combined with intermediating trusted third parties.”

... 

“We provide cargo information services for logistic and industrial companies that can be activated at low cost and work with any logistic partner along any transport route.”
ICT for goods mobility tomorrow

Intelligent cargo = self-identifying, easy to interact and communicate with
Who cares about the cargo being intelligent? → Who is the target of our value proposition?
Value proposition pitfalls

- Some apparently good targets are hostile or neutral at best
  - Shipping agencies, terminal operators, carriers.
  - Misdirected value propositions can be found behind some past failures.

- Aiming at individual targets is not enough
  - The intelligent cargo concept, like other similar approaches, builds on cooperation between different actors.
  - Among the necessary actors some will find no value in the interchange, at least at the beginning (e.g., small carriers).
  - Other motivations/levers can be attempted to convince them, but a good business architecture should work by itself (frictionless).

- Importance of finding the right architectural approach
  - Maximize the value for those who care.
  - Minimize the burden for those who don’t care.
Example from one of EURIDICE pilot cases: Friuli Venezia Giulia system of logistic infrastructures

Business Case is focused on Far East – North Europe flows direction. Actually represents the main freight traffic through the Friuli Venezia Giulia Region.
Flow of goods, involved actors
## Objectives of Intelligent Cargo application

<table>
<thead>
<tr>
<th>Category</th>
<th>Objectives</th>
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| Speed up goods transit                | • Reduce time of clearance procedures  
• Reduce time of payment procedures  
• Synchronization of logistic procedures |
| Infrastructure efficient usage        | • Trip/load optimization  
• Reduce congestion in the port area                                          |
| Reduce pollution                      |                                                                             |
| Improve customer services             | • On-time delivery  
• Better Services  
• Higher customer satisfaction                                                        |
| Reduce costs                          | • Reduce costs of clearance procedures                                     |
| Enhance safety and security           | • More targeted inspections                                                  |
Pilot applications

CARGO IDENTITY MODULE (CIM) AND ASSOCIATED SERVICES

- location of goods and up-to-date information
- information-based services (clearance, payments, ..).

It is able to cover the main needs of two pilot applications:

1. **Automated clearance and billing of transiting goods**
   - automated certification of goods in transit
   - automated payment of fixed costs
   - prepaid secure billing system.

2. **Real time cargo location and status notification**
   - bottom-up events broadcasting
   - up-to-date information following cargo along the route
   - effortless information sharing between different actors.
Example: container arrival pilot at the Port of Trieste (state of the art architecture)

- Local SOA for back-office links.
- RFID on container, handheld reader for field operator at the terminal.
- Batch flow for customs documents.
- Carrier-Terminal systems integration for container identification.

Before container arrival

- FERCAM system
- Customs Agency
- TMT System

Container Clearance

- TMT Operator
- Customs Agency
- Shipping Agency

Containers arriving in the port of Trieste

- TAG
- Handled
- Containers

Field operator

- check container ID
- retrieve authorization documents
- manually done
- payment request
- payment ok
- paper

Customs Agency

- send custom document
- confirm receipt

TMT System

- container arrives
- payment request
- payment ok
- paper

Shipping Agency

- check container documents
- manually done
- paper
Container arrival at the Port of Trieste
(Intelligent Cargo architecture)

- Same core technologies used in state-of-the-art solution.
- Cargo-initiated, single sequence of activities (vs. batch document flow + on field clearance).
- Back-office links with terminal and customs eliminated.

Specialized capabilities

Assisted Cargo Item EURIDICE compliant device (reader + communication + logic)

Basic capabilities – public infrastructure services

Customs Authorization

Container in the Port of Trieste

notify cargo transit

get context

activate cargo services

Context Determination Service

get shipping information

shipping information

check authorization

approved

pay tariffs

paid

result yes/no

finish

Shipping Information System (FERCAM)

get shipping information

shipping information

check authorization

approved

pay tariffs

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result yes/no

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Specialized capabilities

EURIDICE Information System (EURIDICE)

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Specific function services (by user or by provider)

Authorizations, payments, certificates...

Web Service

Identify cargo, cargo owner, position

Container

Get shipment details

Web Service

3PL

Basic services

User services

Application Services

Agent

Smart device: reader, M2M communication, computational unit.

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P. Paganeli (Insiel), B. Podbersig (SDAG) – February 17, 2009
Conclusions

- Intelligent Cargo solutions are defined by an innovative architectural approach, not only by:
  - Deployment of new advanced technologies,
  - Fulfillment of previously unattainable functional requirements.
- Non-functional requirements make a difference, e.g.:
  - Streamline processes by reversing the paradigm (cargo-centered vs. back-office system centered).
  - Eliminate back-office links (especially those involving uninterested actors).
- Need to pursue innovation along three dimensions:
  - Technological innovation.
  - Value innovation
    - Value proposition formulation.
    - Value chain analysis (who cares, who doesn’t)
  - Business model innovation
    - Ecosystem of involved product and service providers.
    - Viability and sustainability.
EURIDICE first year results (February 2009)

- **Results**
  - High level architecture specifications.
  - Services library, Context Model and cargo-related information sources identification.
  - Pilot user requirements from different stakeholders (industry, logistics, authorities and infrastructures).

- **Events**
  - Intelligent Cargo Forum launched, open to logistic users, technology providers and researchers.
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