ICT applications for innovative global freight systems

How to implement a global system:
Standards, systems, and services that make freight management work

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Challenges
Challenges

Lack of integration within and ease-of-use of co-modal transport chains

Standards & solutions were developed to support these issues (Freightwise, Smart-CM / Integrity, Euridice)

EU wide & worldwide deployment of such measures poses new challenges:

1) Decentralization
2) Transparency
3) Interoperability
Standards
Freightwise transport service concept: Separate between service and operational aspects

From a standard container to a standard service!
Freightwise Framework (FWF)
Freightwise services versus D2D workflow

D2D user

Transport service provider (Rail)
Transport service provider (DSS)
Transport service provider (Barge)
Efficient cooperation between well-defined roles

Transport User

Transportation Network Manager

Transport Regulator

Transport Service Provider

Efficient cooperation between well-defined roles

Transport Network Utilisation and Infrastructure
Provides information about the current and foreseen situation of the network.
Controls traffic in the transport network

Transport Supply
Publishes services (routes, cargo types, etc)
Proposes transport execution plan
Executes transport
Reports transport status

Transport Support and Regulation
Develops the regulatory framework. Ensures that transport is conducted accordingly

Transport demand
Specifies the need for transport and approves transport execution plan based on information of services (routes, terms and conditions). Monitors status decides corrective actions.
Freightwise Framework (FWF)

Freightwise process model

Standardize data exchange, not systems
Freightwise Framework (FWF)

Freightwise message information model

(Additional information package: Goods Item Itinerary)
Freightwise Framework (FWF)
Freightwise website & conference
Systems & services
Systems & services

Freightwise application model

Transport User Application

Transport service provider

Freight integration engine

Shipper, integrator

Transport service provider

Transport Provider Application

TSD  TEP  TES
Systems & services

Single access points on freight & service information

D2D user

Transport provider

Transport user

Transport service provider (Rail)

Transport service provider (SSS)

Transport service provider (Barge)

Freight information integration

Service information consolidation

TSD TEP TES

TSD TEP TES

TSD TEP TES
Examples
Systems

Flanders business case

• The Flemish Government has selected Logit Systems to implement the visibility layer for the Flemish e-Logistics Platform (VeLP), a logistics visibility and customs facilitation platform for containerized transport over secured trade lanes (STL)

• Pilots executed from Brazil and South-Africa to the European distribution centers of Toyota and Scania in Flanders.
ArcelorMittal business case

[Diagram showing various components and flow of data between customer, transport user, and service provider information system]
Procter & Gamble business case

View demo
Scenario
Single access points on freight & service information
Scenario
Single access point on freight & service information

Data source aggregation

Data consolidation + exploration

Personalized information delivery
### Scenario

**Single access point on freight & service information**

<table>
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<th>Data source aggregation</th>
<th>Data consolidation + exploration</th>
<th>Personalized information delivery</th>
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#### Data sourcing & aggregation

- **Unit generated information**: Load unit position/status
- **Generic information**: Carrier information, Carrier websites, Load/discharge reports for sea terminals, Vessel & barge tracking
- **Customer generated information**: Web based reporting, Mobile reporting, Stuffing/stripping reports, Commercial release, Pick-up & delivery reports, Preferred suppliers
- **Hub generated information**: Load/discharge reports for inland terminals, Customs release, Traffic information (barge, VTMIS), Ship reporting, Published services (maritime, hinterland)
Scenario

Single access point on freight & service information

Data source aggregation

Data consolidation + exploration

Personalized information delivery

**Data mining & intelligence**

- Plan end-to-end processes
- Balance time, costs and footprint
- Consolidation
- Data integration
- Conflict resolution
- Impact on lead time (ETA)
- Target/actual comparison
- Cargo intrusion/damage detection
- Exception reporting
- Rescheduling
- Rerouting
- Status report archiving
Scenario
Single access point on freight & service information

Data source aggregation  Data consolidation + exploration  Personalized information delivery

Personalized information delivery

Map view
Chain visualization
Operator/location view
Exception reporting
Event subscription
Recovery approach
Status report archiving
(De)consolidation of cargo
Policy support
To establish a soft infrastructure for co-modality
How to support the challenges presented

1) Decentralization: Freightwise supports a decentralized approach
   • Support initiatives that can utilize Freightwise standards and solutions:
     A) On specific corridors: Secure trade lanes (global), Motorways of the sea (intra EU)
     B) Main ports and inland logistics hubs, including their hinterland and the corridors they support
     C) Mode specific platforms for publishing service offering
     D) Individual logistics integrators organizing their internal network

2) Transparency:
   • Use Freightwise standards to publish an up-to-date service offering
   • Transport service providers to include environment footprint into their service specification
   • Support a marketplace (single) access points to freight and service information, aggregating various data sources in real-time and delivering information as a service
   • Specialized providers of application service:
     A) Benchmarking/auditing quality parameters of services
     B) Optimization on how best to combine services in chains and networks
     C) Orchestration services to realize revenue sharing between actors in chains and networks

3) Interoperability:
   • Support a marketplace for Freightwise compliant connectors to existing systems
   • Support the further development of Freightwise within e-Maritime, e-Customs and UBL (UBL2.1)
How to safeguard neutrality

There will be not be a single system.
Each decides himself whether and what he wants to publish
Each is required to keep his data up-to-date
Each makes his own choice to whom he wants to publish information