AEOLIX project
An industry in transformation: Consolidation
Consolidation and fragmentation in the logistics industry – The 45+

- **Visibility services**: 69%
  - The majority of the analysed market considered SC visibility as one of the most innovative services in the industry.

- **Marketplace**: 20%
  - A small percentage of companies operates an online platform.

- **Routing**: 11%
  - Routing is between the least widespread services among the companies.

- **Data and documents management**: 34%
  - One third of the companies are using data and documents management software.

- **Data exchange (one-way or two-way)**: 37%
  - There is some sort of data exchange between these users.

- **Data collection**: 40%
  - Less than half studied business had a way to collect data for the user to analyse.

- **TMS service**: 26%
  - Transportation Management Software packages were offered to businesses in order to make their processes efficient.

- **Event risk prediction**: 9%
  - Approximately 1 out of 10 companies offer through predictive analytics and hardware, services related to risk or events.

- **Estimated Time of Arrival (ETA)**: 20%
  - ETA, unlike visibility services is not a common service.

- **e-CMR**: 11%
  - e-CMR documentation is starting to be offered in applications.

- **Port services**: 6%
  - A very small portion of the analysed companies offers services at the ports.

- **Custom brokerage services**: 17%
  - out of 6 companies provide services at the customs.
What is shaping the future of global logistics markets?

- Supply chain visibility will soon be standard business practice (2-5 years)
- AI and Block chain (10+ years)
AEOLIX vision
AEOLIX end to end visibility network

Figure 1. AEOLIX Platform High Level Overview
AEOLIX end to end visibility network

- AEOLIX network
  - cloud-based
  - multi-enterprise
  - “many-to many”
- Captures and streams data real-time
- Automatically translates “data format” from different IT systems
- Giving organisations the ability to rapidly respond to issues through a customised dashboard.
AEOLIX Connectivity Engine

Responsible for providing the connectivity and interoperability services and supporting seamless data exchanges between organisations and services. These technical services provide the architectural setup; (1) connecting the end-user with its many business partners and systems in their networks; (2) allows for interoperability and governance services; the information exchange between different systems; partner/ system interactions and data sharing management rules.
AEOLIX Toolkit

Core logistics services to support and implement the business needs of AEOLIX end-users. Examples of services offered in the toolkit are: E-CMR, routing, planning services for road and intermodal service, ETA service, CO₂ monitoring, dangerous goods transport management, and more. Toolkit services can be used via the AEOLIX connectivity engine by applications, services and sensors or interplay with other toolkit elements.
AEOLIX Dashboard

An intelligent, user configurable web application, which serves as a dedicated portal to the AEOLIX Platform. It manages and enables access to end-to-end logistics visibility by sharing data of the logistics partners via the Connectivity Engine (CE). It enables intelligence to be added to the data from within the dashboard and enables access and mobilises applications from the toolkit.
Thorough insight into lessons learned, needs and requirements

Architecture for a collaborative IT infrastructure for operational connection of logistics information systems

Appropriate data access management model

Common but user-tailored interface and tools to enable the IT infrastructure

Testing, validation and implementation of the AEOLIX concept

Acquisition of the real impacts of AEOLIX by at least 30% compared to the current situation.

Creation of awareness of AEOLIX, and prepare its Europe-wide deployment

AEOLIX Work packages

Lessons learned, needs and requirements

Lessons learned from existing ICT platforms and systems (success, failure)

Technical and non-technical requirements and needs for the collaborative logistics ecosystem

ICT development

AEOLIX IT architecture

Software components and toolkit

Data access management model

Testing, validation & implementation

LIVING LAB 1

LIVING LAB 3

LIVING LAB 5

LIVING LAB 7

LIVING LAB 9

LIVING LAB 2

LIVING LAB 4

LIVING LAB 6

LIVING LAB 8

LIVING LAB 10

Impacts monitoring, dynamic assessment & evaluation

Dissemination & exploitation

Feedback
Summary of the main information types to be communicated within AEOLIX

Source: D5.3; presentation proposal Chalmers
Main information flow

STAKEHOLDERS within AEOLIX

- Distribution Centre
- Warehouse
- Supplier
- Production
- Consignee
- Forwarder
- Public Authority
- Customs
- Shunter
- Truck Carrier
- Vessel Carrier
- Train Carrier
- Vessel Agent
- Truck Terminal
- Port Terminal
- Train Terminal
- Air Terminal
- Cross Dock
- Lock
- Cross Dock
Main information flows within AEOLIX

Potential AEOLIX Customers

Legend:
- Data GIVER: DGxx
- Data TAKER: DTxx
- Resulting Data GIVER: RDGxx
- Resulting Data TAKER: RDTxx
**Logistics Living Labs**

AEOLIX is testing, validating and demonstrating the collaborative logistics ecosystem in a number of living labs which cover all the nine TEN-T corridors.

**Living Lab 1:** Intermodal Logistics Management – Port of Hamburg, Frankfurt/Rhein-Main area (Germany)

**Living Lab 2:** Termi Lab – NTEX terminal network, hauliers, customs operatives (Sweden and around the North Sea)

**Living Lab 3:** Multimodal Information Exchange and Collaboration – Thessaloniki (Greece)

**Living Lab 4:** Intermodal e-Customs – Trieste (Italy)

**Living Lab 5:** Inland Waterway Danube – The Danube Countries

**Living Lab 6:** Collaborative Living Labs
Collaboration in automotive Industry – Galicia (Spain)

**Living Lab 7:** FMCG Logistics – Malmö intermodal terminal, COOP central DC in Bro (Sweden)

**Living Lab 8:** UK - Europe – Far Eastern Logistics Control Enhancement – Northampton (UK) and mainland Europe

**Living Lab 9:** Cross Chain Collaboration – Rotterdam, Venlo (Netherlands), Duisburg (Germany), Milano (Italy)

**Living Lab 10:** Collaboration in automotive Industry – Galicia (Spain)
AEOLIX Benefits

- Enhanced supply chain visibility
- More efficiency and better resilience
- Fewer costs, less administrative burden
- New business opportunities
- Automation of data flow
- Optimised choice of transport services
- Better transport and event management
- Increased load factors
- Fewer CO₂ emissions
- Interoperability in line with EU standards
AEOLIX partnership
AEOLIX “Trusted data network”

**Data push model**
- Model enables real time information to interested parties ensuring automated logistics processes in the logistics stakeholders apps / systems

**Open**
- Data is not stored in any central database but is produced and maintained in original data format by its owner
- Each owner of the data pipeline decides who can participate and how (producing data, reading…)

**Data from legacy systems**
- Data easy to use and consume for legacy systems exposing AEOLIX core services as API / Rest services

**Data Privacy assurance, authentication and security mechanisms**
- Data Privacy assurance, authentication and security mechanisms

**Data architecture**
- Built upon existing recognised industry and European standards and has proven reference data implementations
- Visible and recognised as a trust Label within industry and public authorities.
- Validated through compliance testing and certification
AEOLIX testfest events
AEOLIX high level events 2018