An Efficient Delivery Mechanism of Goods Using Continental Groupage Enabled by Smart Data Sharing

Charumathi Palanikumar, Marzieh Adineh, Sneha Ramesh, Vibha Ravindra, Zahra van Egdom

Abstract

The logistics and transport industry is highly complex and spans over the globe. Since it is something that works over whole the world, there is a vast network of stakeholders involved. Ranging from transport mechanisms, such as ports, logistics provides such as trucks, distribution centers and so forth. These stake-holders have started using generated data in their processes to improve on delivery and transport services. To further improve on their services, they participate in the exchange of data, which raises the question of interoperability among the stake-holders. Especially when they maintain their own data in their own systems with their own conventions. Data transformations needs to happen for stakeholders to exchange data between their systems. Since this is a complex network of stakeholders, this exchange in data becomes process-heavy and time consuming. To make the data exchange more efficient a solution is proposed by creating a seamless data sharing ecosystem, facilitated by IDS.

International Data Space (IDS)

The main facilitator of our target architecture is the IDS. It enables:
- **Secure Data exchange between companies**
- **Data Sovereignty**
- **Data FAIRNESS**

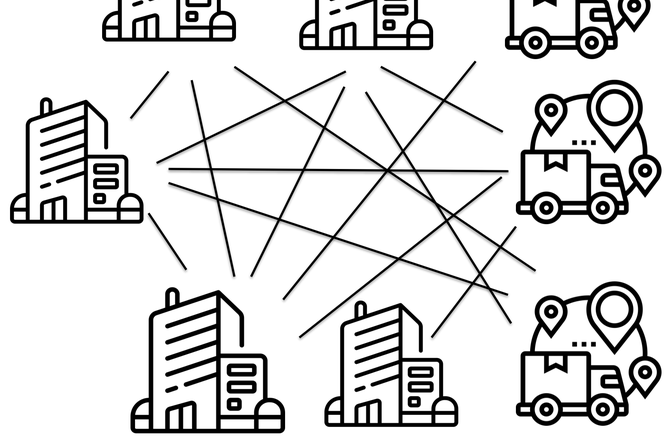
Core Principle of IDS

Digital transformation in the industry is based on the methodical exchange of data and services between industries or companies.

Research Question

How do we enable the efficient sharing of data to facilitate Continental Groupage?

Current Scenario



- **Messy networks**
- **Different ERP/ CRMs**
- **Delayed deliveries**
- **Delivery trucks only partially full**
- **Different meanings for different data sets**

**** Network Complexity of the order of n*(n-1)***

SWOT

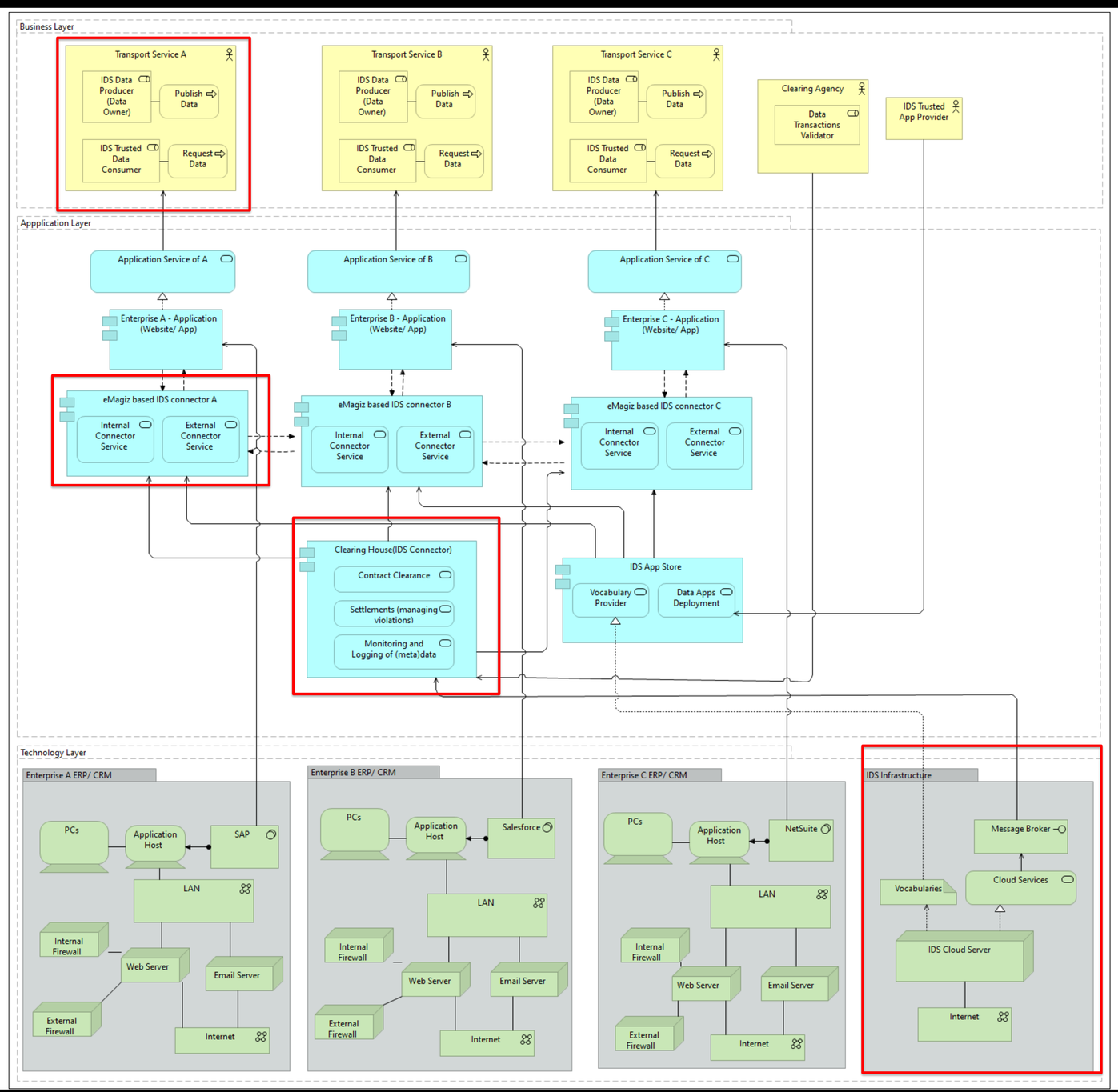
Strengths
- **Collaboration of multiple stakeholders**
- **Connected locations**
- **Global use of data for improving efficiency**

Weaknesses
- **No efficient system for sharing data**
- **Lack of scalability and interoperability**
- **Process-heavy systems for data processing**
- **No standard formats and vocabularies**

Opportunities
- **Use of IDS components, data vocabularies and standards such as OTM5 for improving efficiency of data exchange**

Threats
- **Non-compliance to cross-border data transfers**
- **Absence of data security and privacy**
- **Data Breaches**

Target Architecture



IDS Components used between enterprises to facilitate seamless data exchange, thus enabling Continental Groupage

Benefits

- **Open Data**
- **Data Sovereignty**
- **Synchronised Intermodality**
- **Horizontal Supply Chain Collaboration**
- **Optimised Utilisation of Transportation Services**
- **Reduced Costs**
- **Higher Customer Satisfaction**

IDS Certified Data Producer/ Consumer

IDSA

UNIVERSITY OF TWENTE.