A Cooperative International Initiative

papiNet GIE IDEAlliance

papiNet enabling Industry 4.0 from the Forest to the Industry

Hannover

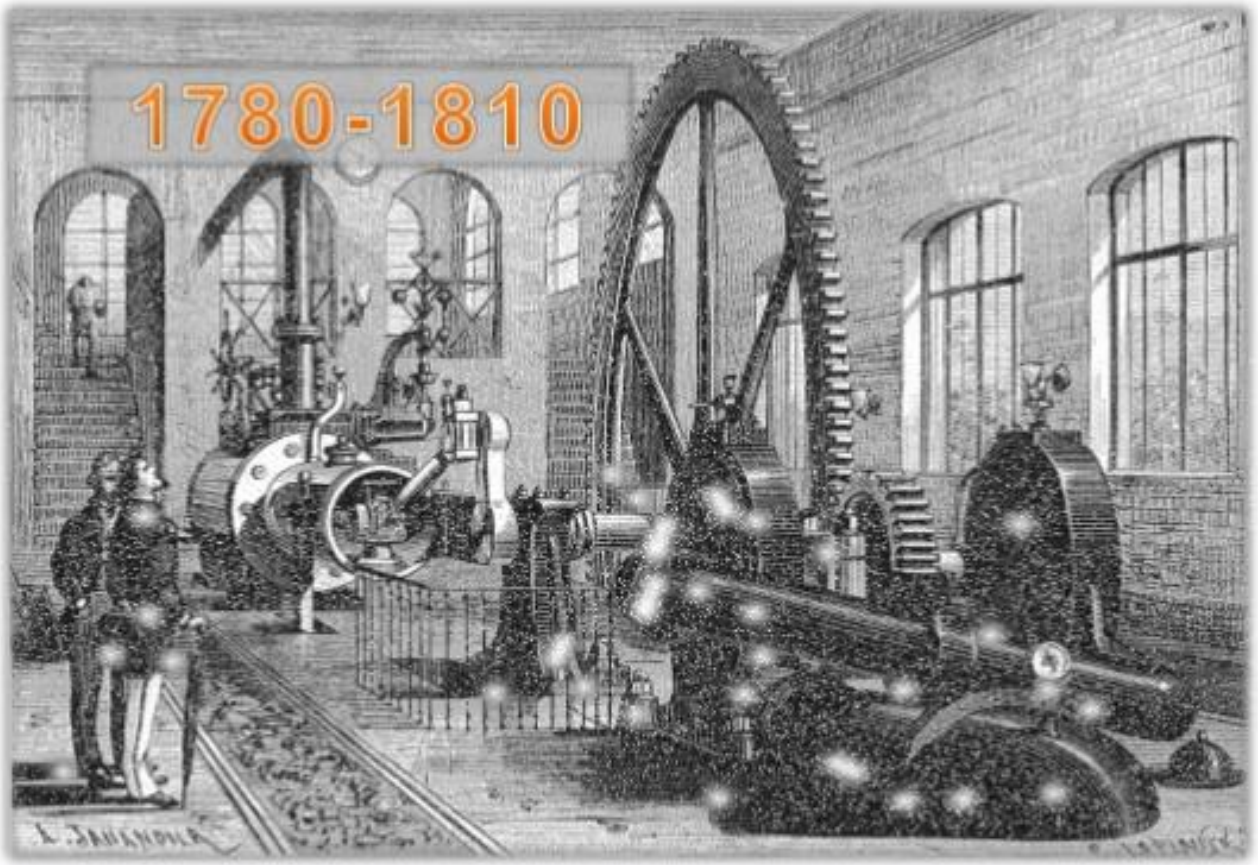
23rd May 2017

Outline

- Industry 4.0 Overview
- About papiNet
- Use case Norway
- Use case Sweden
- Use case France
- Use case Germany

First Industrial Revolution

Mechanization of production using water and steam power



Second Industrial Revolution

Mass production with the help of electric power

Third Industrial Revolution

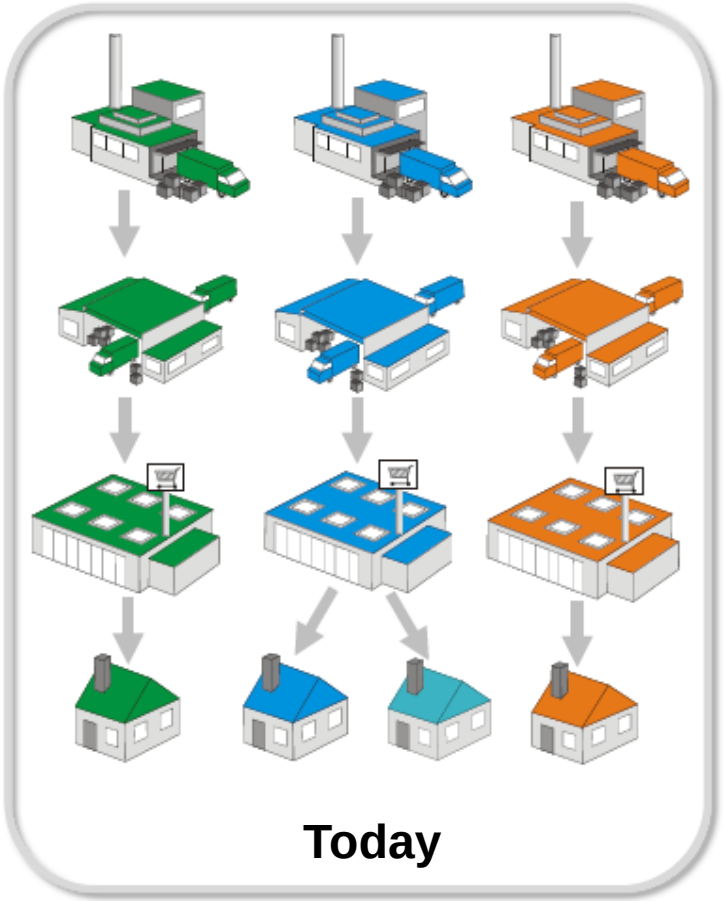
Digital communication technologies to automate production

Fourth Industrial Revolution

Interconnected systems for smart production

Supply Chains in the Future

papiNet



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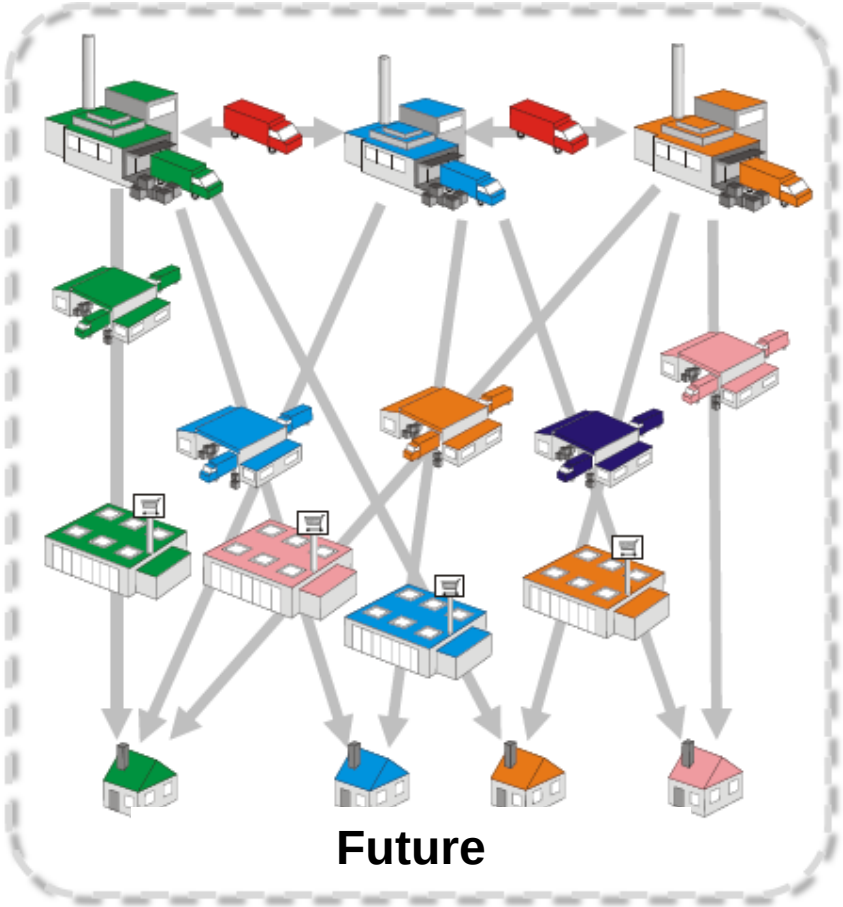


Future

Connecting Machines with Intelligent Networks

Concept of Industry 4.0 is to **interconnect** machines, sensors and control systems together via **intelligent networks** to achieve:

- **Dynamic response to product demands**, enable rapid manufacturing of new products
- **Real time optimization** of manufacturing production and supply chain networks
- Strong customization of products, **mass customization**
- **Self optimization**, self configuration, and self diagnosis
- Active support of the manufacturing process by **smart products** themself

Standardization as a prerequisite for Industry 4.0

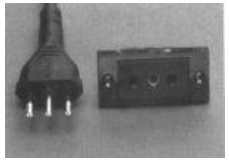
Industry 4.0 will involve **networking and integration of several different companies** through value networks.

This collaborative partnership will only be possible if a **single set of common standards** is developed.

Open communication standards
Key to success for Industry 4.0

http://www.forschungsunion.de/pdf/industrie_4_0_final_report.pdf

Why Standards ?



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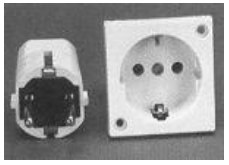

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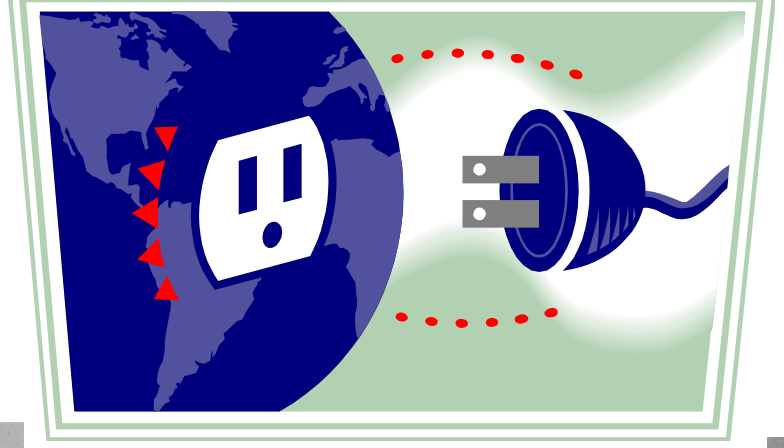

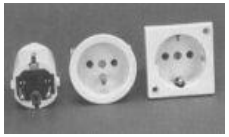

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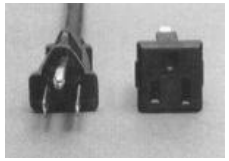

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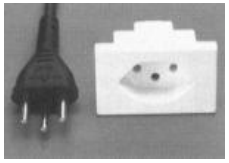

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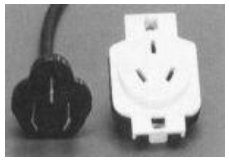
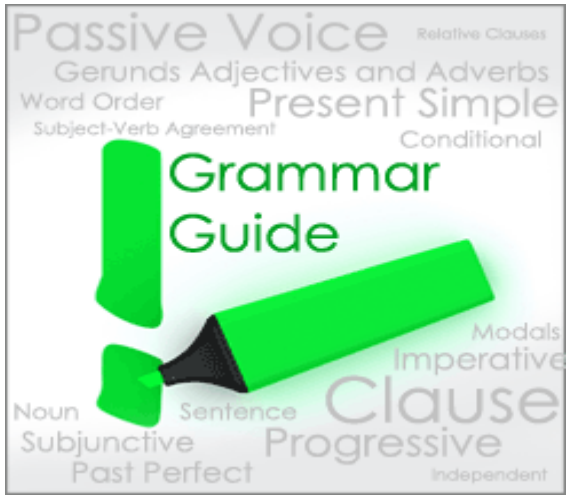


AUS

The Approach

- XML definition
- by W3C



- Business process definition
- Data dictionary
- by papiNet

- Gaining intrinsic value
- by companies

A brief history of papiNet

- Convergence of four related efforts:
  - European Paper Consortium for e-business (CEPI)
    - A consortium of European suppliers cooperating with customers within the industry
  - IDEAlliance (N.A.)
    - Formerly the Graphics Communications Association with its publication emphasis
  - AF&PA (N.A.)
    - US trade association for manufacturers of forest, paper and wood products.
  - SDC
    - Swedish association for Forest wood products.

What is the papiNet Standard?

- A set of standard electronic documents that facilitates the flow of information.
  - The standards ensure that business processes for commerce among partners are identified and described through common terminology and common business documents.
- Guidelines for **interoperability** at the data and transport level
  - The guidelines facilitate set-up and on-going collaboration

papiNet Market Segments

Forest

Wood products

Pulp

Paper

Packaging

Labels

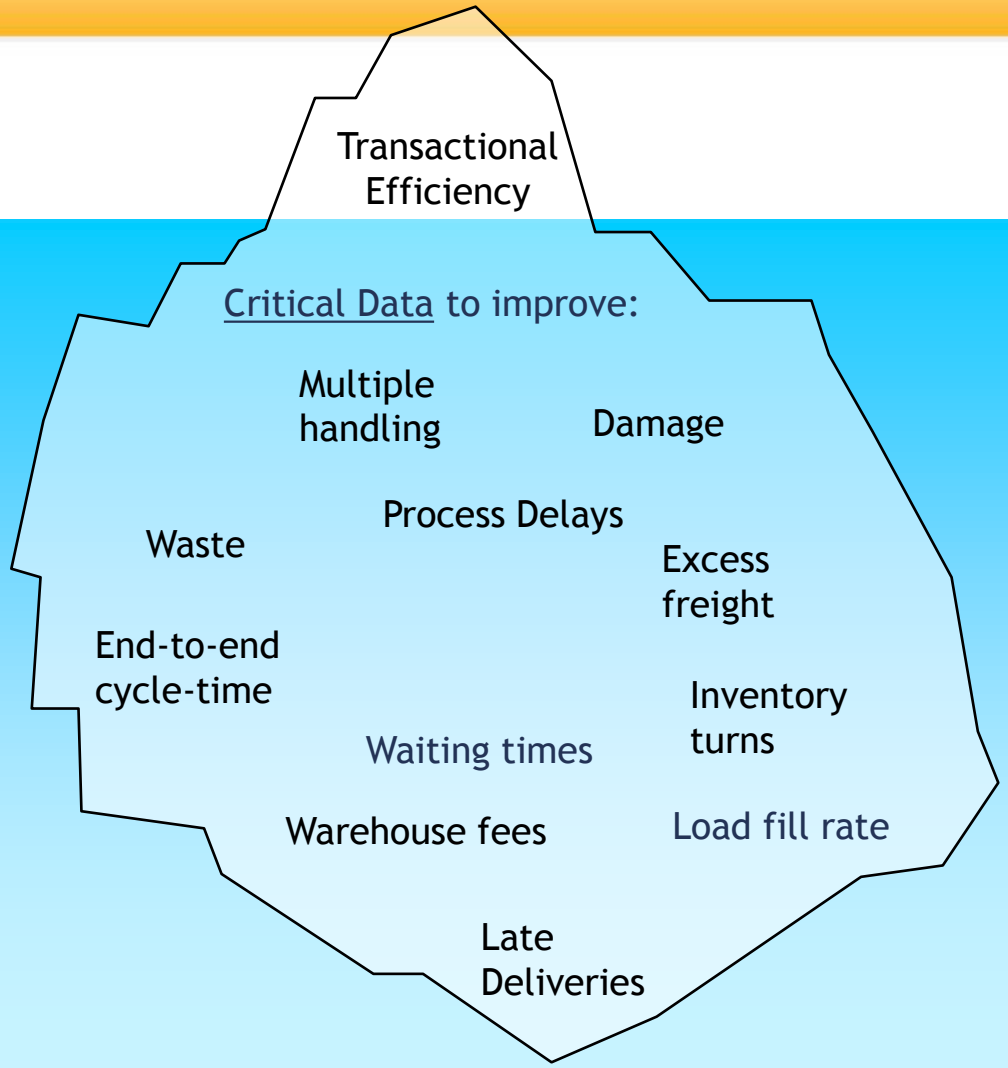
Books

Logistics

Goals

- Remove cost from the Supply Chain
  - transferring cost from one trading partner to another does not remove cost from the supply chain.
- Supply Chain Optimization
  - reduce inventory improve collaboration and shared decision making
  - standardize communication and work flows
  - increase returns on invested capital
- Cost Competitiveness

Gaining Value by Anlayzing Big Data



Perceived Value

Intrinsic Value

papiNet is…

- An enabler for collaboration, information sharing, process improvement and shared decision making
- The opportunity to improve processes across the entire supply chain network

<u>Not</u> an electronic marketplace !

<u>Not</u> a software!

papiNet SCOR Model

- Product Attributes
- Planning

- Request For Quotation
- Availability
- Purchase Order
- Order Confirmation
- Call-Off
- Order Status
- Inventory Status

- Product Quality
- Usage
- Inventory Change
- Product Performance

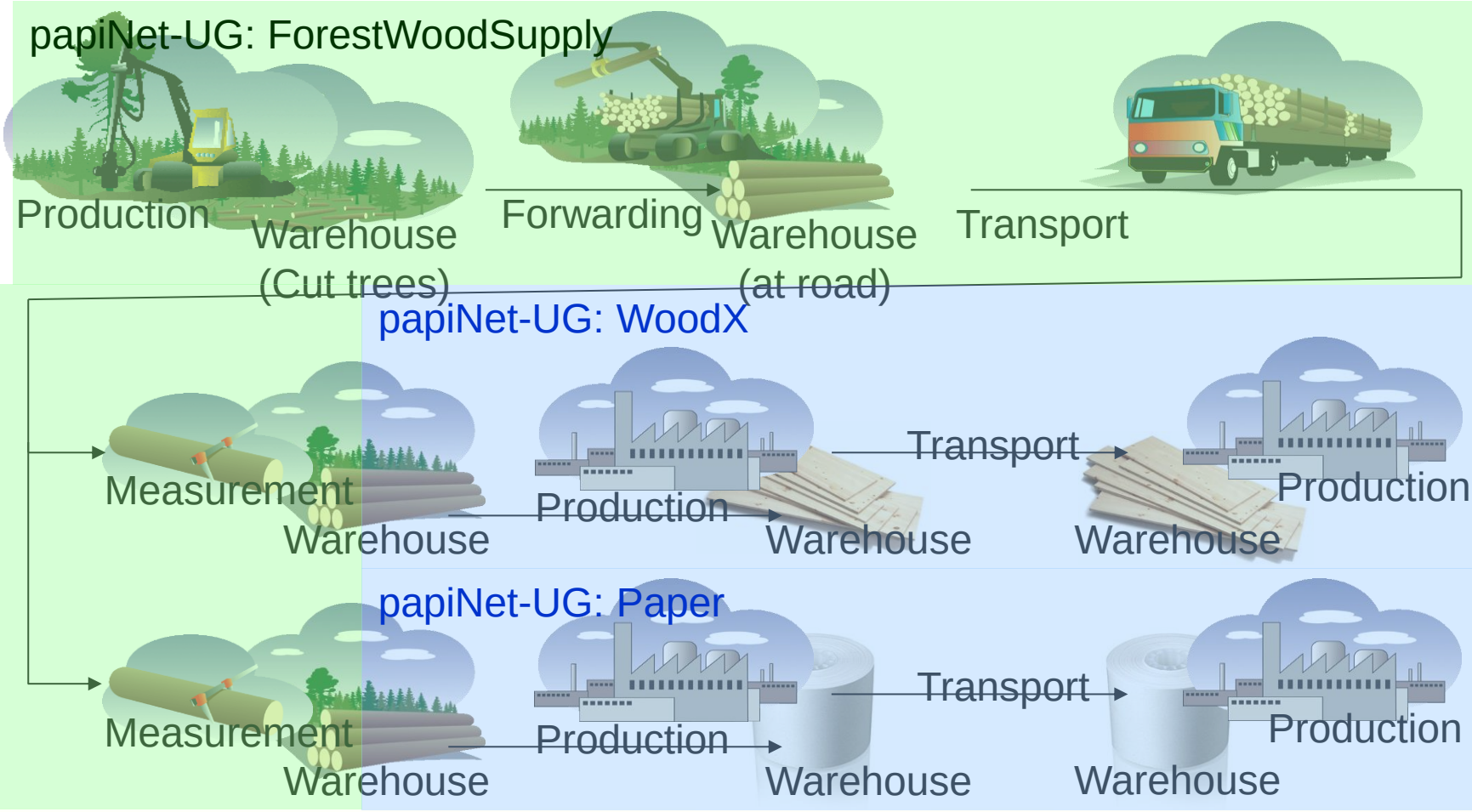
- Delivery Message
- Goods Receipt
- Invoice

- Credit/Debit Note
- Business Acknowledgement
- Information Request
- Complaint
- Complaint Request

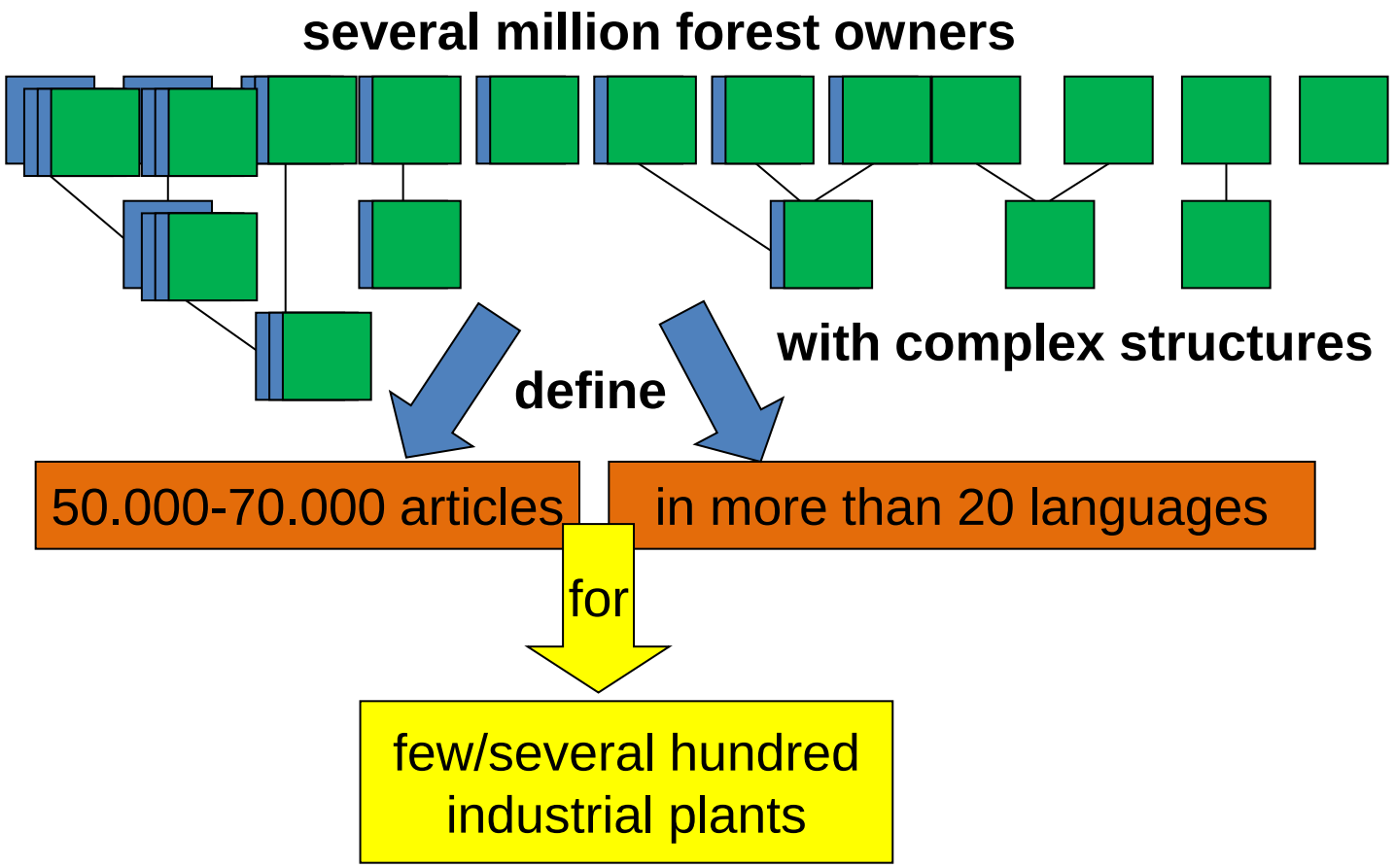
Standards are fundamental to an efficient supply chain:

- Enable timely, efficient and effective communications
- Avoid costly non-value added translation activities
- Enable fast and widespread connectivity
- Avoid “one-off”custom connections

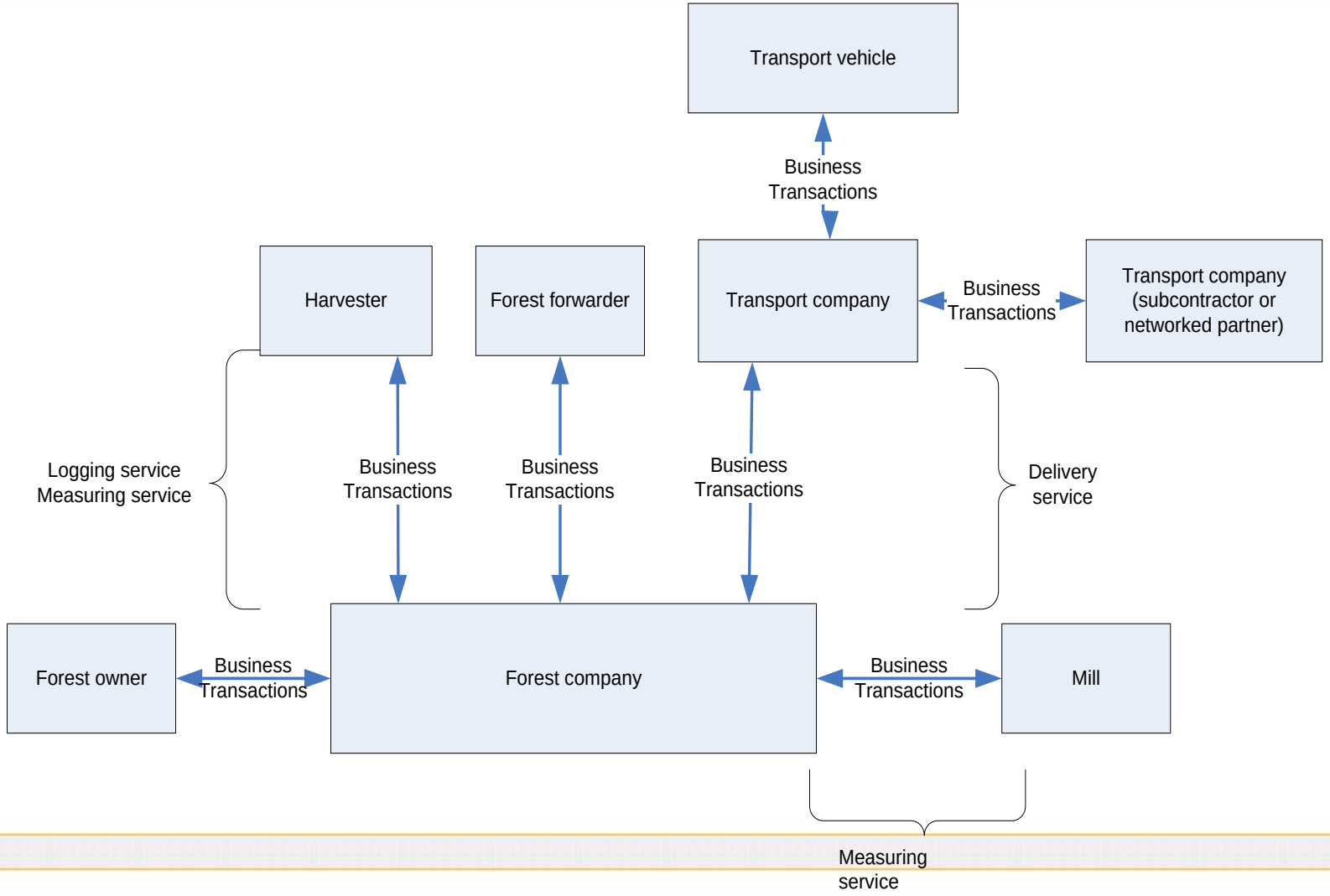
papiNet Forest Wood Supply



Forest Wood Supply Challenges



Forest Wood Supply: parties involved



The logistics chain and the data stream

Wood industry
Goods acceptance

Flow of Goods Forest

manually

?

Data

- **Wood acceptance**
- **Credit note procedure**
- **Freight forwarders‘ billing**

Use Case from Norway

- QR Code for measuring
- Wood Chip trade

SKOG-DATA AS

Use Case Norway QR codes

- Standard on all way bills for FWS
- QR-code presented on paper and smartphones / pads
- Speeds up measuring prosess and reduces error rate
- New project for automatic measuring of chips by scale
  - Scan QR-code, weigh and produce Measuring Ticket
  - Web-cam photo for control

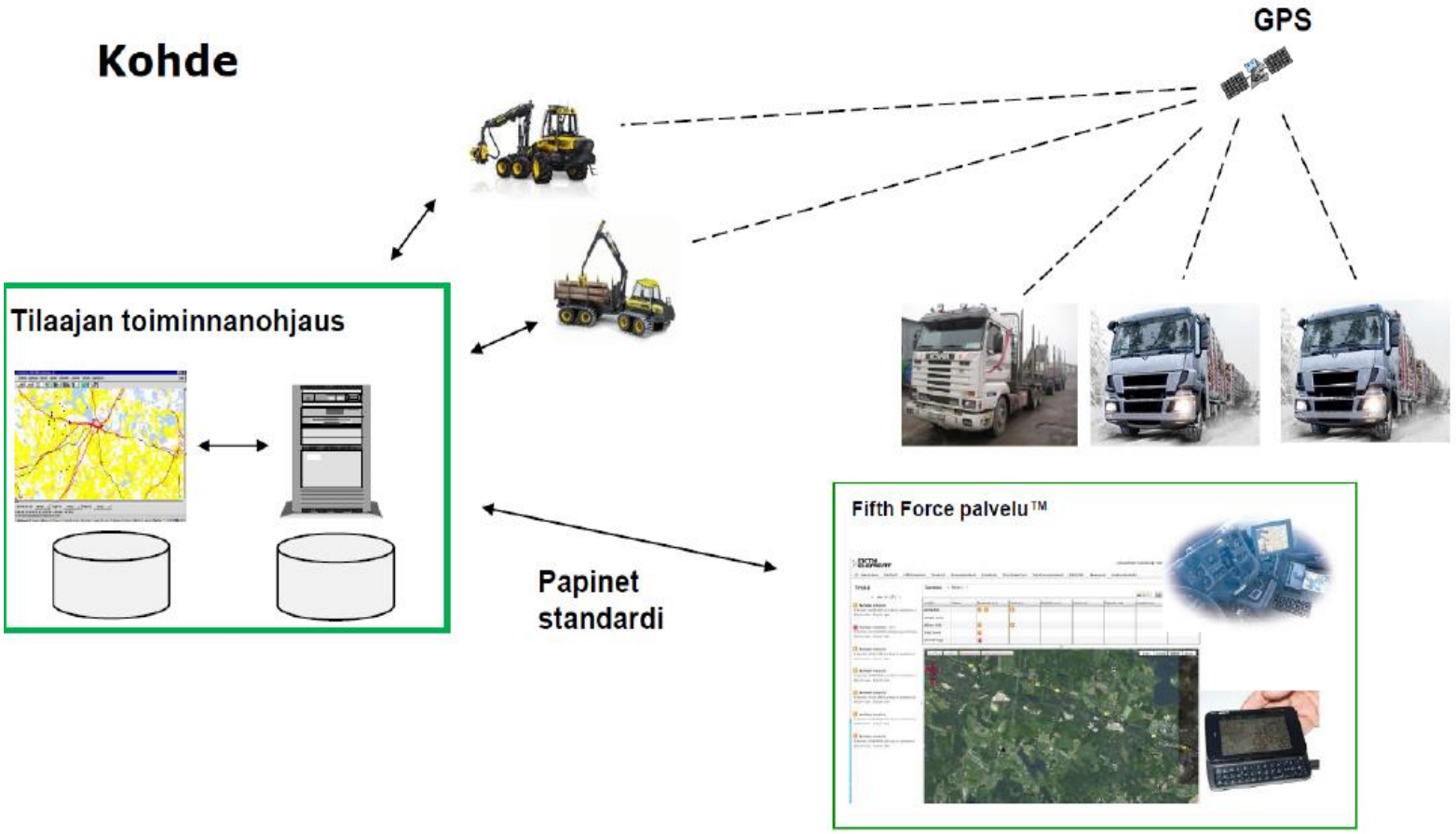
Use Case Norway Wood Chip Trade

- trade application VirkesHandel
- most of the wood chips trade in Norway is handled using the application.
- Each party in the business chain run their separate client and all data exchange is based on papiNet eDocuments

Use Case Finland

- LogForce™ is a software service for forestry related transport that is used to streamline the business for both the haulage contractor and the forestry company

Use Case Finland LogForce



Improvements by using papiNet

- more than **one million papiNet e-documents** are distributed every month
- more than 50% of Finnish timber transports are supported
- **30% better utilization of trucks**
- More business for transport companies
- Information transparency
  - All involved parties are informed in good time
    - Proactive operations, not reactive
    - Improved planning for better performance
    - Information availability for better business decisions
    - Increased information quality
- Reduced administration
    - Faster information transfer, less phone, mail, fax
    - Reduced manual operations, data entry, communication
    - Decreased manual control, comparison delivery invoice
    - More time for value adding activities

Use Case Sweden

- All Swedish companies in the forest wood supply chain are going to use papiNet
- Since 2014, the Swedish forest companies Sveaskog and Södra are invoicing forest wood sales using papiNet e-documents

Use Case Sweden SDC

- integrations between carriers and SDC
- reduce measuring times and waiting times at the places of measuring, carriers are now sending advance shipping notifications to SDC as the timber truck leaves the delivery origin. SDC verifies the Delivery Message and pass relevant data to the Place of Measuring provided by the carrier.
- This also brings down the costs of measuring, since a lot of data has been provided electronically and does not need to be manually entered by the measurer.

Use Case Sweden Sveaskog and Södra

- electronic invoices with detailed invoice specifications for efficient reconciliation.
- no longer need to conduct manual reconciliation of invoices
- papiNet documents Invoice and Invoice Specification are efficiently verified at Measuring Number level, which strengthens cost control and improves data quality.
- Traditionally, reconciliation of forest wood invoices is a both complex and labor-intensive manual process in Sweden.

Use Case France

- eMOBOIS master data
- electronic data exchange in the French bioenergy & woodchips supply chain

Use Case France Master Data Mgmt

The eMOBOIS project, coordinated by FCBA, is utilizing papiNet eDocuments to facilitate a master data manager to centralize and share product identifiers and descriptions. The product database is made up of Forest Wood Supply product components. It is hosted on a web portal with the data exchange platform and is updated in real time on the basis of information contained in papiNet eDocuments.

Use Case France Bio-Energy

Undertaken within the TRADE-project, this pilot is led by the national union of forest cooperative (GCF) in partnership with key bioenergy stakeholders. The new messages will use papiNet eDocuments and envelopes (mainly DeliveryInstruction for loading and transport, DeliveryMessage, MeasuringTicket).

Use Case Germany

agr Arbeitsgemeinschaft Rohholzverbraucher e.V.

kwf Kuratorium für Waldarbeit und Forsttechnik e.V.

DFWR Deutscher Forstwirtschaftsrat

Holzlogistikkette zwischen Wald und Werk

„ELDATsmart"

Marktzugang – Kommunikationsoptimierung – Effizienzsteigerung

15 years ago….


WWW


Value works
e-Marketplaces


Electronic Data Interchange
EDI


XML

Today….

MOBILE
SOLUTION

Mobile changed the world

The Future in the Forest ?

www.papinet.org