DBE Core Platform
- Network as a Service (NaaS)
### DBE Core ecosystem research 2016-2019

#### ICT services
- tietto
- INEO
- CGI
- IBM
- OpusCapita
- Flashnode
- basware

#### Design services (EPC/EPCM)
- ALLSTARS Engineering Group
- Lehtosen Konepaja
- ONNINEN
- PARAMET
- Leivinen
- Hollihov
- Rolls-Royce
- WARTSILA

#### Suppliers
- ONNINEN
- PARAMET
- Lehtosen Konepaja
- Leivinen
- Hollihov
- Rolls-Royce
- WARTSILA

#### Hub Buyers
- Maritime hub’s
- Meyer Turku
- RMC
- Arctech
- MacGregor

#### Financing services
- Danske Bank
- Nordea

#### Government services
- VERO SKATT
- TULLI TULLI CUSTOMS

#### Focus
- Increase production, Sourcing, procurement, ERP
- Automated PLM: Sourcing, Procurement, Technical Data, 4 schemas
- Corridor as a Service, Automated gross border

#### Logistics services
- SmartLog
- SCHENKER
- CONSIGNOR
- VR
- SKAL

#### Logistics corridor
- Vedia

#### New supply chain financing
- THTH companies
Process industry

Maritime industry
Supply chain integration

LUT research 2015 Process industry

Case 40 companies supply chain:
Tier 0, observation 19 companies
Tier -1, observation 21 companies

Transactions per year
Invoices 2.5 million
Total transactions 11 million

Remark
2-4 % to the bottom line

Additional business benefit by productivity improvements

Remark:
in Finland we send 220M business invoices (B2B) and 240M invoices to consumers (B2C).
Alibaba 2018 November 11th
Single’s Day Transactions (TXN) volumes
- 1.5 billion TXN per day
- 325,000 TXN per second at its peak
- 200,000 payments per second at its peak
- 230 countries and regions

Source: www.Techcrunch.com  Nov. 12, 2018

Annual invoicing volume (in billions):

<table>
<thead>
<tr>
<th></th>
<th>Invoices</th>
<th>E-invoice penetration</th>
<th>E-invoicing growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer (B2C)</td>
<td>200</td>
<td>5 %</td>
<td>5%</td>
</tr>
<tr>
<td>Business (B2B) (G2B)</td>
<td>150</td>
<td>5 %</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>350</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Europe

<table>
<thead>
<tr>
<th></th>
<th>Invoices</th>
<th>E-invoice penetration</th>
<th>E-invoicing growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer (B2C)</td>
<td>17</td>
<td>2 %</td>
<td>20%</td>
</tr>
<tr>
<td>Business (B2B) (G2B)</td>
<td>16</td>
<td>18 %</td>
<td>29%</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Billentis, 2017
### International trade priority for digitalization

<table>
<thead>
<tr>
<th>Data source = S</th>
<th>Datan receiver = R</th>
<th>Datan reused R/S</th>
</tr>
</thead>
</table>

### Export

<table>
<thead>
<tr>
<th>Step</th>
<th>Party</th>
<th>Data Source</th>
<th>Datan Receiver</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order &quot;goods&quot;</td>
<td>R</td>
<td>S</td>
<td>R</td>
<td>S</td>
</tr>
<tr>
<td>Waybill to export “Airwaybill”</td>
<td>R</td>
<td>R/S</td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Invoice &quot;goods&quot;</td>
<td>S</td>
<td>R/S</td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Packing list &quot;goods&quot;</td>
<td>S</td>
<td>R/S</td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Waybill “CMR”</td>
<td>S</td>
<td>R</td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>L/C Application</td>
<td>S</td>
<td>R</td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Debit Note</td>
<td>S</td>
<td></td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Document Pouch</td>
<td>S</td>
<td></td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>Manifest</td>
<td>S</td>
<td></td>
<td>R</td>
<td>R/S</td>
</tr>
<tr>
<td>MRN by Customs</td>
<td>R</td>
<td>R/S</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Receipt &quot;transport&quot;</td>
<td>S</td>
<td></td>
<td>R/S</td>
<td>R</td>
</tr>
</tbody>
</table>

### Import

<table>
<thead>
<tr>
<th>Step</th>
<th>Party</th>
<th>Data Source</th>
<th>Datan Receiver</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs Destination</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
<tr>
<td>Terminal Authority</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
<tr>
<td>Ground handler</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
<tr>
<td>Forwarder</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
<tr>
<td>Transporter</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
<tr>
<td>Importer’s Bank</td>
<td></td>
<td></td>
<td>R/S</td>
<td>S</td>
</tr>
</tbody>
</table>

2019 DBE Core Platform
EU VAT legislation

On 11 December 2018, the Commission announced a proposal for new detailed measures that will pave the way for a smooth transition to new VAT (Value-Added Tax) rules for e-commerce that come into force in January 2021.

Digital Transport and Logistics Forum (DTLF)  
Electronic freight transport information (EFTI)
eFTI Regulation – principles

Concerns **B2A exchange of data for goods**, possibly at a later stage vehicles and drivers, B2B is out of scope but can be taken into account

**Harmonised transport data model** (similar to customs), based on international standards

**Harmonised/standardised interfaces** (access points)

"Pull mechanism" will be standard for exchange

For that purpose **IT used has to be certified**, but existing systems can be used

Certified systems will be called **eFTI Platforms** (can still be anything)

**Technological neutrality** – important to prevent unnecessary IT changes (caused by hypes). Blockchain for example can be used, but is not mentioned
Identified areas of work

DTLF SG1 – Paperless transport

Goods
- eFTI Regulation
  - Data modelling aspects
  - Functional aspects
  - Technical aspects
  - Platform and service provider requirements
  - Certification
  - Other aspects

Vehicles & Personnel
- Road
  - Access to data for regulatory purposes
- Air
  - Some room for DTLF work – TBC
- Rail, Maritime, ILW
  - No specific work – SPOCs designated for updates on developments
What DTLF SG1 is **not** doing

**Writing legislation** - The DTLF is an expert group with a mandate to assist & advise COM. Nonetheless important opportunity to “steer” it in the right direction – we should use it

**Building, prescribing or endorsing systems for data exchange** - It is up to every public and private sector party itself to find its most optimal solution – this includes the costs related to it

**Business to business exchange of information** - Where we can find synergies or win-win results we should of course, but the main focus/scope is on B2A

**Re-inventing transport & logistics** - There is always something to improve and it can be an entertaining topic for discussion, but it’s not a mandate for DTLF SG1

**Creating world peace, saving the dolphins, curing cancer or stop hunger** - It is of course good to achieve those things, but I am not sure we can achieve it through the DTLF SG1. Therefore we should not spend much time on it and focus on tangible result and the SG1 scope.
SG1 tasks relating to eFTI

**Grouping of activities**

1) Data modelling aspects
2) Functional aspects
3) Technical aspects
4) Platform and service provider requirements
5) Certification
6) Other aspects
7) Where relevant; Transport means and personnel

**Characteristics of the organisation**

- Matrix organisation
- Phased approach
- Task-based with deadlines
- Input and feedback from all DTLF Members is required and wanted
eFTI – indicative timeline

Application (Art. 17): 4 years – allow adoption of the implementing and delegated acts

17 May 2018
• Proposal adopted by Commission

29 Jan 2019
• First reading adopted by European Parliament

Sept/Oct 2019
• Start of EP-Council discussions in trilogue format

Q1 2020 – Q4 2023
• Preparation & adoption of technical specifications

June 2018
• Start of consideration by European Parliament and Council

6 June 2019
• Adoption of General Approach by Council

End 2019/Start 2020
• Final text adoption by EP & Council

Q1 2024/2026 (tbc)
• Entry into force
Digital Business Ecosystem

Global trade and logistics
Logistics as-is / to-be in 2 years “survey 2019 FI”

Level of running only digital processes

Target in 2 years
As-is
2019
Full digital
Logistics in Supply Chain - modules - processes

Process priority for integration:
- Sourcing and procurement
  - RequestForQuotation
  - Quotation
  - Order
  - OrderResponse
  - OrderChange
- Logistics
  - Packing list
  - Bill Of Lading
  - Air Waybill
  - Transportation Status
  - Transportation Status Request
  - Forwarding Instruction
- Technical Data documents
  - Automatic valves
  - In-line flow meters and pressure meters
  - Centrifugal pumps
  - Asynchronous motors
Logistics Harbor - stakeholder - process

Reference
Rotterdam harbour

Ocean carrier
the carriage of the goods under this bill of lading from place of receipt from merchant to place of delivery

CFS
Container freight station

Liner agency
A shipping agency, handling shipments and cargo

Depot
Storage area for empty shipping containers

Shipping Provider
the supplier or owner of commodities shipped. Also called Consignor

Inland carrier
A transportation line that hauls export and import traffic between ports and inland points

Terminal
is a facility where cargo containers are transshipped between different transport vehicles

CUSTOMS
collects the duties levied by a government on imported goods

Sea cargo UN/CEFACT
EDIFACT messages
- COPARN
- IFTMIN
- CODECO
- COSTOR
- COSTCO
- COREOR
- CALINF
- COPRAR
- COARRI
- VESDEP
- MOVINS
- BAPLIE
- COPINO
- COSTOR
- CODECO

Standards for integration:
Reference, Rotterdam harbours

Working paper 2019
Logistics in Air Garco - Stakeholder data and processes

- Letter of Instructions
- Packing List
- House Waybill
- Invoice
- House Manifest
- Master Air Waybill
- Flight Manifest
- Transfer Manifest
- Transit Declaration
- Freight Booked List
- Certificate of Origin
- CITIES Certificate
- (Phyto) Sanitary Certificate
- Shippers certificate for Live Animals
- Shippers Declaration or Dangerous Goods
- Certificate of Death
- Export Goods
- Export Cargo
- Customs Release Export
- Import Goods
- Import Cargo
- Customs Release Import
- Certificate EUR.1
- ATA Carnet

Reference
IATA

Standards for integration:
- Letter of Instructions
- Packing List
- House Waybill
- Invoice
- House Manifest
- Master Air Waybill
- Flight Manifest
- Transfer Manifest
- Transit Declaration
- Freight Booked List
- Consignment Security Declaration
- Certificate of Origin
- CITIES Certificate
- (Phyto) Sanitary Certificate
- Shippers certificate for Live Animals
- Shippers Declaration or Dangerous Goods
- Certificate of Death
- Export Goods
- Export Cargo
- Customs Release Export
- Import Goods
- Import Cargo
- Customs Release Import
- Certificate EUR.1
- ATA Carnet
- Locate
- Track
- Monitor
- Notify / Alert
- Respond / Interact

Interactive Cargo
Transport User,
Transport Service Provider,
Transport Network Manager

Transportation
Import
Carrier/Air Line
Ground Handling
Import Forwarder,
Consignee/Shipper

One Record
Reference, IATA

Slide 17
Focus on correct data for multimodal logistics

Multimodal

Order
Packing list
Invoice
Waybill

Terminal

Road

Air

Sea

Rail

Logistics

Road cargo

Sea cargo

Rail cargo
Data ownership for new value add services?

**Single Window model - data storage**

- Buyer
- Buyer Operator
- Seller
- Seller Operator

**Four corner model - document transfer**

<table>
<thead>
<tr>
<th>Business process A</th>
<th>Business process B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal System</strong></td>
<td><strong>Internal System</strong></td>
</tr>
<tr>
<td>Create and send</td>
<td>Receive and Process</td>
</tr>
<tr>
<td>Buyer Oper.</td>
<td>Buyer Oper.</td>
</tr>
<tr>
<td>Data A</td>
<td>Data B</td>
</tr>
<tr>
<td>Seller Oper.</td>
<td>Seller Oper.</td>
</tr>
<tr>
<td>Receive and Process</td>
<td>Create and send</td>
</tr>
</tbody>
</table>

**Distributed model – data sharing**

- Core Endpoint API
- API repository
- Data A
- Data B
- T1, T2
- Ledger
- Company Internal integration
- Buyer A system
- Seller B system
Financing e.g. “working capital”
Order – OrderResponse - OrderBacklog

Buyer A

Core Endpoint
Igration logic

(1) API Call - Order

Seller B

Core Endpoint
Igration logic

(2) Store – Order

(3) API Call – OrderResponse

(4) Store – OrderResponse

(5) API Call – OrderBacklog

Financer C

Core Endpoint
Igration logic

(6) Store – OrderBacklog

(7) Verify – Order

New business model
- 20% more working capital

API and Blockchain calls
1. Buyer A sends Order to Seller B
2. Buyer A stores Order into Blockchain
3. Seller B sends OrderResponse to Buyer A
4. Seller B stores OrderResponse into Blockchain
5. Seller B sends OrderBacklog to Finance C
6. Seller B stores OrderBacklog into Blockchain
7. Finance C verifies Order from A to B
Global trade towards Distributed Ledger

From current document exchange to Distributed Data Sharing

- Seller
- Bank
- Transport operators
- Authorities
  - 1. Purchase Order
  - 2. L/C Application
  - 4. L/C Notification
  - 5. Invoice "goods"
  - 6. Packing List "goods"
  - 10. Packing List "goods"
  - 11. Letter of Instruction
  - 12. L/C Instruction
  - 13. Air Waybill
  - 14. Air Waybill
  - 15. Credit Note
  - 20. Air Waybill FWB
  - 21. House Waybill FHL
  - 22. Air Waybill FWB
  - 24. Invoice "goods"
  - 26. Certificate of Insurance

- Import
  - Authorities
  - Terminal operators
  - Transport
  - Bank
  - Buyer
  - 27. Transport Order
  - 28. Receipt
  - 29. Cargo Receipt FQH
  - 30. Export Goods Declaration
  - 31. Customs Release Export
  - 55. Customs Release Imports
  - 57. Transport Order Destination
  - 59. Receipt "transport"
  - 60. Consignee Receipt
  - 64. Handling Fees Origin

- ... Packing list
- Invoice
- Waybill

2019 DBE Core Platform
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www.dbecore.com

Please send me a note, we would like to tell you more of Distributed Ledger