



A GLOBAL LOGISTICS DATA BACKBONE



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WHAT DOES IT OFFER?

A recent overall study of the current logistics process makes it clear that all parties involved are developing activities and implement changes to make their own part of the logistics process as good as possible but with that they miss the total picture.

In general, shippers demand better supply chain management and improved end-to-end chain visibility. To support that demand, a global logistic data backbone is currently in development.

THE CURRENT SITUATION

In the last decade we have seen numerous initiatives, discussions, events and seminars around electronic data exchange or e-freight. In most cases, these activities focused on a particular mode of transport or segment of the logistics chain and tried to bring parties together to come up with solutions for specific issues that were addressed.

Also, regulators are somewhat involved

in these activities and we have seen the willingness and preparations from that side resulting in changed regulations, which enable the industry to implement developments that allow information to be transferred electronically besides the exchange of the old-fashioned paperwork.

During an aforementioned study the Air Cargo Data Exchange Infrastructure was looked at in detail, which led to some disturbing conclusions:

- Many regional networks operated by local Cargo Community Systems.
- Poor or duplicate interconnectivity between stakeholders based on commercial agreements or technical abilities.
- No reliable data change propagation mechanism.
- Obsolete pre-internet standards, technology and infrastructure.
- High barriers to entry – difficult for everybody and too expensive for most small and medium players.

- Disconnected processes (quoting, booking, execution, invoicing...)

Furthermore, it became clear that in the current process, a total of 21 documents are being sent 40 times in 20 different steps for each individual shipment.

The data entered on these documents was split up between so called 'data owners' being the party responsible for providing a particular data item. In total seven 'data owner' groups were defined and within these groups a total of 21 different data items were counted.

When these outcomes were placed in a matrix it became clear that from the 21 data items, 16 of them were already repeated four or more times in the nine main documents involved in a shipment¹

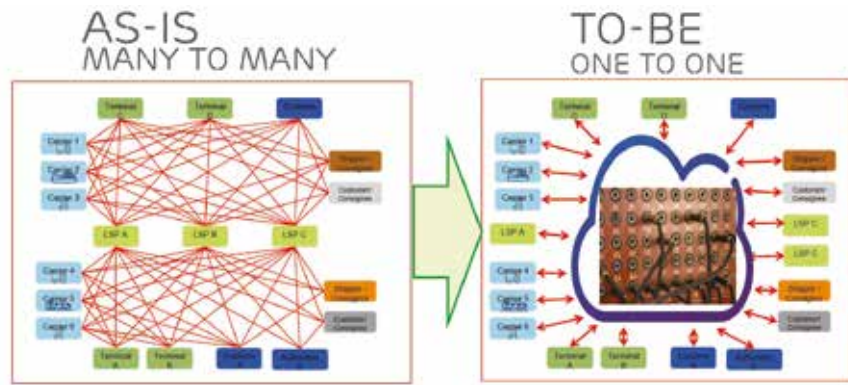
But, due to missing or incomplete connectivity, a lot of data is manually repeated, resulting in possible errors, higher costs, inefficiency and loss of time, just to name a few.

Although the focus for this exercise was

¹ Purchase Order, Invoice, Packing List, Certificate of Origin, House Waybill, Air Waybill, House Manifest, Customs Goods Declaration, Flight Manifest

on air cargo, it is obvious the other modes of transport will show more or less similar outcomes. Add the fact that at least sea and air transport are in basis part of a multimodal transport chain, the outcome of the total data item repetitions will be much higher, which will result in even more complications, including possible errors and higher costs.

A system that truly supports the exchange of data between all parties involved in the logistics chain will solve many of the issues. Enter the 'Logistics Data Backbone'.



A GLOBAL LOGISTICS DATA BACKBONE

First, what is the definition of a data backbone?

“A data backbone is a combination of hardware, software and services that connect trusted users in order to provide secure, fast and reliable data exchange and increase business efficiency.”

The idea is to create a system that gathers information from the 'data owners' during the shipping process and makes that information available to relevant (trusted) parties so that data can be viewed, reused or added when the shipment goes from A to B.

The Air Cargo Data Exchange study shows that using such a system could reduce the number of times the mentioned 21 documents are sent to just one instead of 40 and that it would reduce the required steps to do so to just 12.

An overview of the advantages of a Data Backbone are listed further in this article but the number of reductions in sending documents is a huge time and cost-saver. A Logistics Data Backbone would need to comply with some basic demands to be useful.

It should be an open, multimodal platform. Not that it should be freely accessible for each and every one with a computer, access should of course be authorised but not limited to just a few parties. All parties involved in the industry should, after being verified, be able to have authorised access to the information relevant for their business and customers only.

As indicated, the system should cover the entire supply chain (end to end/door to door) and actors, like:

- Business:** shippers, consignees, banks
- Logistics:** airlines, FFs, GHAs, GSAs, integrators, truck, train, brokers...
- IT:** CCSs, system and service/software providers...
- State/Regulatory:** customs, regulators, chambers of commerce...

It should also prioritise on the support of efficient operations, provide piece/item-level tracking (status+geo) across multiple



actors, support B2B, B2C, C2B, C2C, B2G, G2B flows, and enforce real-time master data management by its rightful owner.

All above implies that a lot of things need to be in place to make this work but above all, a data backbone for logistics should be highly secure and not owned by a commercial entity for obvious reasons!

THE BOTTOM LINE

There should be benefits for all parties involved to make a Logistics Data Backbone a success. Some benefits are obvious and will quickly pay off, while others need time to be proven. Below is a list of possible advantages for parties involved (See table on the next page):

However, it's not only positive news as the following also needs to be considered:

- The changing landscape might kill some businesses that are not able/willing to change or they may lose their competitive advantage.
- Change management is required!
- The vendor lock-in due to complex EDI links disappears. Depending on your business, that might be positive or negative.
- Confidential info/customer data is located in one system.
- Duplication of data will most likely occur in the beginning (old legacy system and new) which will add some costs.

- Loss of control in case of a system failure, potential down-time and data-quality. Redundancy will be required but there is always a risk.
- You most probably cannot share routing sensitive information or customer sensitive info in the system.
- Readiness to engage from some authorities as we have seen in the past with other initiatives
- Increase of transparency increases competition, also here depending on your business that might be positive or negative.
- Last but not least, is the solution and technology trusted in the beginning?

Finally, the impact for the IT community is significant as it all depends on how well they are able to adapt their current solutions to this new approach or develop complete new solutions and tools which make use of the Data Backbone.

As said, the Logistics Data Backbone is currently being developed and things are moving fast. The difference with other projects is the fact that Shippers are involved in this project and are the biggest supporters and contributors.

Without shippers, there are no shipments so when the most important parties in the Logistic Chain step in to push such a big project, it might well be the biggest game changer of the last decades in our industry.

<p>Shipper</p> <ul style="list-style-type: none"> • One electronic communication line (single window) • Documented events turns into track and trace information • Real time track & trace and early warning • Info arrival prior to goods • Pro-active failure management towards the end customer • Event management • Exception and acceptance handling • Ease to change provider/supplier • Low investment for small shippers to connect • Include letter of credit and DG management process electronically into total solution • Improved inbound visibility • Automatic & accurate CO2 reporting E2E 	<p>LSP/Freight Forwarder</p> <ul style="list-style-type: none"> • Same as for shipper, as similar relationship with other parties • Resource and capacity planning • Spend energy and cost on sales and not back office work • Increased fill rates by consolidating cargo • Will impact on business model to some extent, but will bring new benefits and services • Better customer service • Increased events quality • Improve planning capacities by not only pulling needed info • Reduced risk of errors (unique IDs) • Less paperwork • Document sharing (TC, export controls) 	<p>Carrier</p> <ul style="list-style-type: none"> • Resource and capacity planning • Waiting/idle time and yield • Visibility and control of volumes and where it is (T&T) • Resource and capacity planning for optimisation • Not only “pull” information for planning • Spend energy and cost on sales and not back office work • Increased fill rates by consolidating cargo • Single interface & get rid of paper • Develop new business (sell directly to SME) • Better utilisation (-/-30%) • TAT time reduction • Simplified compliance checks
<p>Ground/Terminal Handling Agent</p> <ul style="list-style-type: none"> • Same as shippers, forwarders, carriers • Resource and capacity planning • Reduced dependency of individuals • Easy access to documents • Single system to interface • Reduced complexity and improved data quality • Increased planning capabilities • Reduced paper and system clutters • Speed in processes • Ease in claim handling 	<p>Customs</p> <ul style="list-style-type: none"> • Visibility, transparency, efficiency, profitability • Risk analysis • Compliance verification and embargo fulfillment • Security and border management process • Trade facilitation • VAT & duty collection faster and easier • Pre-declaration and clearance • Supports single window lead by WCO 	<p>Authorities</p> <ul style="list-style-type: none"> • Harmonisation between governmental bodies • Consolidated statistics availability to Eurostat (and national) • Dispatch to right authorities depending on goods • Targeted regulations based on commodity type. • Police authorities ability to scan for “risks/threats” and profiling • Medical authorities compliance, animal decease • Communication on new regulations • Harmonisation between governmental bodies • Environmental and dangerous goods reporting • Easier connection to single window in other regions • Risk mitigation and evaluation

ABOUT THE AUTHOR

Herman first joined DGM as a member of the Special Project team at DGM NL. In the years that followed, he held senior management positions in DGM Systems and DGM Support, the head office of the international DGM network. Since 2003 he is Managing Director of DGM Software Development Group, an IT company specializing in databases, tools and solutions for all modes of transport, production, storage, handling and waste of Dangerous Goods

Robert Mellin is Strategy Development Manager for Business Line Industry & Society, since beginning of 2015. He was

previously Head of Ericsson Distribution Logistics. Robert joined Ericsson 2010 with more than 15 years experience in Global Supply Chain Management and Logistics Procurement. Mellin graduated with MSc in Economics from BI Norwegian Business School in 1995. He is based in Stockholm, Sweden.

ABOUT THE ORGANISATION

DGM Software Development Group A/S (DGM-SDG)’s mission is to deliver information technology expertise dedicated to safe production, storage, transport and trade of any class of dangerous goods or hazardous material. All activities are performed in accordance

with the global quality & safety standards: Rules and regulations of UN, ICAO/IATA, 49CFR - ADG - ADN - ADR – GHS - IMDG - RID – TDG – SEVESO, EC Standards and ISO 9001:2000. The company is headquartered in Kolding, Denmark with development offices in Denmark, Norway and The Netherlands and sales and support offices in the U.S., Europe, and Asia Pacific.

ENQUIRIES

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