

The Virtual Box - Electronic business tools for container shipping

On September 18/19 members from the liner community and providers of technology to this sector gathered in Hamburg to debate the latest developments in electronic business for containers at *Digital Ship's* conference

THERE'S SOMETHING very attractive networking the computer systems in container shipping.

Imagine: a shipper having container loads with many different shipping lines can book and track the shipments on a single internet page.

Imagine: authorised government agencies can find out in two seconds, from a secure internet page, what is inside any container bound for their country.

Imagine: the computer system can constantly check the shipper's data, the terminal's data, the shipping line's data and the

to manage data sharing and documentation requirements." Optimum is a spin-off of Stolt-Nielsen's former in-house supply chain development team, specialising on the needs of the chemical tanker industry.

Ms Kline said that an essential issue was to assign the data-ownership in order to ensure a high quality of the data that goes through the system. This applies to both order fulfilment data and tracking and tracing information.

"There must be a zero-tolerance on errors. It is important to have accurate documentation, not only in the post 9/11

Kline concluded, is that "each party only updates its own system, there is no need to re-type data on the other end as this should be integrated and kept up to date with changes."

Freight forwarders

Will van der Schalk of German freight forwarder A. Hardrodt, described his company as a typical medium sized forwarder representing a large group of the industry. His message to the providers of electronic systems was, "make things easy and don't forget about the user, who has to use the systems every day."

He continued to say that A. Hardrodt has been committed to the use of EDI links since the late 70s, when this technology was not even named EDI. The most central piece of integration can be found in the network of the company's 22 offices around the world.

"File transfer is essential to us. The customer expects us to transfer data between the offices, with ports and carriers," he said.

The particular challenge lies in the standards, according to Mr van der Schalk, "which not every forwarder can easily handle. The airline industry, however, is a good example for how it could work."

Flexibility is very important, he said. Referring to the three carrier portals, INTTRA, GT Nexus and Cargosmart, van der Schalk noted, "as a forwarder you have to sign up to all of them. You do not have a choice if you want to reach all carriers, but even if we put in place an IT infrastructure, some carriers and shippers might not."

Surprisingly, despite being a pilot member of the INTTRA, A. Hardrodt is not yet integrated with the system but has to use the online access. "There is much work to be done yet," he said, "standards must be found to simplify interfacing."

Mr van der Schalk summed up, "So far, we've been spending too much money on using those portals rather than saving any. Hopefully this will change. We do believe in it, though."

The portals

After this reality check, Henrik Dam Larsen of container shipping line -backed portal INTTRA, had his say on where his company is at. He confirmed that the ocean transport was somewhat far from a common IT standard.

On the other hand he said, it has been widely acknowledged, "that we can use the internet for real business nowadays."

According to him, 70 per cent of computer outputs are currently manually input (retyped) into another system.

"There is no worse thing than having systems which cannot communicate," he commented. The long-term INTTRA solution would be to connect all trading partners together for a simplification and automation of container booking processes.

Carrier-own portals, mainly on the back of their websites, do not solve the problem, said Mr Dam Larsen. What is

needed is a central hub, "which has to be sponsored by the carriers." INTTRA itself represents some 46% of the world's container volume and is open for everyone else to use.

His vision, so he said, was to have one central hub to which everyone, including brokers and authorities, would sign up and then use for more effective communication. For that, "the mentality has to change. People must be able to trust the system." He said "But there is much work to be done: Integration is desirable, but not practised at the moment."

Later on in the panel debate, when asked whether he would be able to imagine a common portal instead of the three existing (INTTRA, GT Nexus and Cargosmart), Mr Dam Larsen responded, "It wouldn't be easy for the three portals to integrate. It certainly isn't the right solution at the moment. However, I can imagine, that in the future there could be one physical network that supports different providers of virtual portals / software. In fact, that'd be my dream."

Cargosmart

Carsten Schneider of Cargosmart presented his portal's track record of 3800 company accounts, 5000 users and 4-9000 e-mail notifications sent out each day. He claimed that the portal handles 55.000 shipments per day.



Volkhard Erdelbrock, DAKOSY

consignee's data and flag up when the data doesn't crosscheck the way it should. The result is that everybody's data is much more accurate and everybody knows exactly what to expect.

While these developments are many years off, there are more developments than you think moving in this direction. Digital Ship gathered some of the leading players to a conference in Hamburg in September, to find out how much progress has been made so far.

One of the more interesting discussions of the conference was the possibility of integrating between the three container shipping backed portals, GT Nexus, INTTRA and Cargosmart, enabling shippers to work with every major shipping line in the world from a single internet page.

Right now, there is no integration between the systems, which means that shippers have to use all three systems if they want to talk to all of the shipping lines; the portals are saying that integrating would be very difficult technically and also there are enormous commercial difficulties. Each portal needs to work out how to become financially secure in its own operations before it considers giving or sharing business to a rival.

Over the longer term though, integration looks inevitable. DAKOSY, a system used by terminals and forwarders in Hamburg, already integrates with INTTRA and is in talks with GT Nexus and maybe also Cargosmart.

Could the next stage be that freight forwarders can talk to all of the different portals at once, tracking their containers on one screen, by going through DAKOSY?

Optimum Logistics

Candice Kline of Optimum Logistics opened the conference talking about "how

world," said Ms Kline referring to the increased security requirements after the terrorist attacks on the US last year.

Cargo clearance

One of the requirements set by the US government is that shipping lines are requested to submit their cargo manifests 24 hours before the ship sails rather than off the coast of the target country. "Electronic manifest requirements are more strict nowadays," she said. In fact, all information has to be detailed and specific to the cargo; generic information is neither useful nor secure enough.

Much of the data required for documentation is already stored somewhere on the carrier's side anyway. Integrating with a company's in-house ERP system, SAP for instance, enables this data to be used for identification purposes. Of course, this data then needs to be crosschecked.

Through Optimum's TradeLink system, for instance, "all carrier data is added after a deal is fixed, the data is sent on to the shipper; both systems have both pieces of information. Whenever a change occurs in the in-house system, TradeLink automatically updates all the other participants," said Ms Kline.

As an example of this automated process, Ms Kline named the Bill of Lading, which can be filled in automatically by Optimum's system. TradeLink also supports online tracking and tracing, which features event alerts and shipment notification so the authorised user is kept up to date of the cargo route.

According to Ms Kline, SAP, for instance, "seems to be little suitable to ocean transport administration."

Optimum provides an add-on module to such standard applications. In essence, the most important aspect of all this, Ms



From left: Mark McGlade, Savi; Mark Parsons, Freight Traders; Henrik Dam Larsen, INTTRA; Carsten Schneider, CargoSmart; Tim Power, Conference Moderator; Candice Kline, Optimum Logistics

will to change them, even if they might improve using the new tools." He said adoption was incredibly slow because there was no real feeling of commitment to the new system.

"At the moment there is not really one particular business model for shippers to get their freight onboard, there is a combination of tools that work," he said. "But to be honest, we have overestimated the internet capabilities of some of our customers," Mr Schneider drew the bottom line.

Ashley Skaanild of GT Nexus estimated the worth of the global logistics industry at four trillion dollars/year. He said there was a lot of wastage, which would call for "strategic supply chain management." Yet with poor quality data and inability of some partners to co-operate this would not be an easy job.

Open-sourced platforms allow people to collaborate better, he said. "You have to find the right technology to support your relationships," Mr Skaanild continued. What this means is that physical relationships and processes have to be translated into the virtual environment. Only that way can it work.

"All partners at GT Nexus are encouraged to bring in all of the companies they work with along the supply chain," he continued, "and we create private networks for them." Private networks are collaborative workspaces which enable authorised parties to access data, which is persistent in the network, stored in a neutral place, so to speak.

Freight Traders

Mark Parsons of Freight Traders talked about his system, which enables shippers and shipping lines to negotiate procurement of ocean freight online.

Mr Parsons commenced his presentation saying he was looking at the issues from both the shipper's and the e-commerce provider's perspective.

For his current job he was drawing a lot of experience from his time at Kellogg, a global corporation with a huge demand in logistics services.

He drew attention to the time it takes to agree an ocean freight tender. Reverse auctions were dismissed by him as counter-productive and "not really working." This might be a matter of perspective. However, Freight Traders have specialised in long-term, high-volume tenders.

Mr Parsons pointed out that "streamlining business processes can lead to an expansion of the business for both shippers and carriers." He also agreed that standards were needed; "The quality and structure of information improves as it becomes more standardised," he said.

Otto Versand

Andre Zuppa of Otto Versand, which is said to be the largest retailer in the world, spoke on the challenges of being a global business. Otto was one of the first companies to join Bolero.com because of cost and administrative reasons, he said.

"Bolero appeared reliable. It covers all areas that are important to us. We want to settle the majority of trading activities without paper, but 100 per cent is not actually achievable," he continued. Paperless trading does not mean,



From left: Peter Costantino, Australian Customs Service, John Cushing, eModal; Neale Molyneux, NYK Line Europe

however, that other media beside the electronic channels are not being used anymore.

All departments of Otto are to connect via a common ERP (enterprise resource planning) system, which will achieve full in-house integration during next year, said Mr Zuppa. The challenges, however, are to get all employees to use the system and to cross cultural barriers that may well occur within global corporations.

Smooth in-house integration is an important pre-requisite when trying to get into paperless trading and connecting to external platforms. With various freight forwarders and shippers as well as banks joining Bolero, the trading community is becoming somewhat more diverse and allows for an efficient use of the system.

G-Log

Yet, this sort of integration is only possible if the legacy systems are flexible enough to allow for it. Dominic Logan of software provider G-Log pointed out that many existing systems "have limited visibility and are hard to change."

He called for the development of standardised, expandable systems which could be customised according to the need of the user. He also said that the quality of data that is fed into systems is up to the people who "own" it.

CCE Web

The sort of data that Jakob Katsman of CCEWeb spoke about,

relates to financial activities, i.e. payment processes. He gave an example of virtually paperless trading by explaining how Letters of Credit are issued electronically.

Whereas his company had problems convincing people to use the system, ("our system was too advanced for the market a couple of years back"), it was now successfully promoting paperless payments via the internet.

In essence, a buyer can contact his bank electronically, which via CCE Web's GlobalTrade establishes a two-way connection with a

document clearing centre. The Letter of Credit notification is then sent on to the seller's desktop - all electronically. The result of it all: the exporter (seller) gets paid quicker and all parties involved save administration costs.

Issues such as the recognition of electronic signatures have been solved by letting banks act as their customers' agent. Documents, which require a manual signature can be printed out in the bank and signed by an authorised representative. This, again, proves that 100 per cent paperless trading is not yet achievable.

Container security

On a slightly different note, Mark McGlade of Savi, spoke about container security. Representing a company which is most active for the US military, he proved to be an expert on the physical tracking and provision of information related to the cargo industry.

Mr McGlade said, that today more than ever, it is essential to have end-to-end management of supply chain assets and their contents in order to protect them from unauthorised access and tampering. Today's solutions address the lack of visibility and unstructured, useless information.

He said that around 6-19 per cent of the global supply chain spending goes wasted because of logistical problems. Containers arrive at the wrong time at the wrong place, and that's not been the exceptional case.

In the case of the US Depart-

ment of Defence, in the Gulf War many containers had to be opened first in order to find out their contents. Both for the military and the commercial business, this should not have to happen.

In technical terms, container tracking facilitates a number of media, often in combination. Tags are attached to each individual container. They can have different forms: bar codes, laser cards, smart cards, passive tags, contact memory buttons and active tags. None of those do a good enough job by themselves: they have to integrate with each other.

Mr McGlade also drew the scenario of the "modern Trojan horse", which enables illegal parties and substances to be smuggled into the country. With the new technology, authorities can be alerted directly; it might even help to undermine such movements altogether.

Cost of security

In the concluding debate, however, questions were raised about the cost of implementing such tools. As they are becoming mandatory after the events of September 11, 2001, huge costs lie ahead for the ship operators.

Mr van der Schalk of A. Hardrodt says, "Some of our customers are very sceptical and reluctant as they have already invested in security devices that are not good enough all of the sudden."

Satellite container tracking

Stephan Calkosz of Hansestar also spoke about satellite container tracking, a field, which he described as a "niche market until now." So far, he said, "our solutions have been applicable to very specific types of containers, with particularly valuable or important cargo.

The complexity of the devices has also kept the prices high and without the danger of compromising their reliability, it is hard to lessen the costs. "But we are working on it," he said.

The Hansestar solution, as opposed to Savi's tags, comprises a rather complex system, featuring sensor capability and satellite antenna. The box, attached to the outside of a container, can also be integrated with internal sensors and transfer condition data etc.

The data transferred to the shore, is presented in a report format, rather than graphically. The delivery channel can be either via a web-based interface, e-mail or full integration, i.e. file transfer. It is possible to integrate Hansestar data into other information systems, but with any other system that draws on a communications link via satellite or cell, "there are of course, physical limitations," concluded Mr Calkosz.

CONTAINERS & SECURITY

Integrating with truckers and ports

Phil Behenna of International Asset Systems (IAS) said "there has been a progressive decrease of profit for the container industry as shippers are getting more aggressive in trying to keep prices down." In fact, in strong year, there may be a 4-5 per cent profit margin, which could well turn into a minus in bad years.

"The carriers network is incredibly fragmented, they have to outsource the inland transport to third parties, this all means that the information flow is bad; there are information gaps," he said. "The carrier loses track of where the container is when it leaves the port towards land-based targets."

IAS has developed a system which is trying to connect carriers with truckers, depots and authorities. "There is a lot of information sitting in the carriers' systems, but this information could well be passed on more efficiently," Mr Behenna continued.

Some ports feel a responsibility to put in place a system that covers the information needs of the port community and organises port traffic more efficiently.

Mercator is an integrator, according to its own description, and caters for such demands. Customers include the Ports of Barcelona and Rotterdam. Ernst Scheel of Mercator said, "but the problems are the same in every industry. The complexity of nowadays systems poses difficulties to connecting them with each other."

"At the moment we have isolated systems that cannot communicate with each other. All information is stored away some-

where, but it is not worth anything if you cannot get to it. You also need to be alerted when changes to your systems occur."



Jakob Katsman, CCEWeb and Gregory Scharf, Klaxon IQA

Mercator's task would be to connect those systems, to make them talk and exchange data. The implementation of interfaces follows a design stage, in which the customer defines its own work flows. To accomplish this, most integrators use XML or one of its derivatives.

The secret, according to Mr Scheel, is to connect various systems to one central point, rather than creating links between individual systems.

But it is not only XML that does the job. So far, some of the issues could be solved via EDI. Volker Erdelbrock of Hamburg-based Dakosy said his organisation "has been active providing EDI solutions, even when the term EDI was not around."

Dakosy's solutions regard the transfer

of electronic information on vessel arrival, bayplan, booking, pre-arrival notices, loading order, gate in message, vessel departure, terminal performance etc. Additionally, dangerous goods activities are supervised and communicated to the authorities.

Transport orders are transferred from shipping lines to trucks railways and feeder companies, said Mr Erdelbrock. "Dakosy basically takes care of all EDI connections within the community," he summed up.

Robert Inchausti of Navis referred to the latest developments which may result in truckers having to make appointments at the terminal gates.

For ports, in particular, web services would be the perfect solution, he said, pulling data from haulers, shipping lines and other operators in real time where needed.

In fact, and going even further, John Cushing of eModal, presented the desirable "multi-port" platform. Again, it was emphasised that the host of such a system, would have to be a neutral party. Mr Cushing also referred to the phenomenon of the truckers queuing at the terminal gates, as they do not know for certain when their cargo is ready for pick-up.

"You want one single source of information rather than having to research into complex, branched out systems," he said. The advantage, so it seems, is not only for the truckers, but "the people at the gates, customs and authorities know who should be within the gates at which time." This is also a security measure.

But at the end of the day, it all comes down to money. "Demurrage payments can be done and tracked more easily... Plus, every time things slow down at the gates, someone loses money," Mr Cushing concluded.

Liner agents

Herbert Frick of Softship spoke about electronic tools for liner agents. "We used to have plenty of time to prepare documentation," he said. "But the data volume is too high to do documentation manually now."

As the pace of business is speeding up, timely data is needed. Liner agents typically have more than one other carrier customer. In order to be connected to all of them, it needs more than individual EDI links.

"The fully integrated system is still far from reality; proper data transmission is only possible with an in-house system. XML is a solution, but only if the IT infrastructure is there in the first place," said Mr Frick.

However, despite those issues, he predicted that liners will invest in their web presence and that there will be a shift towards the implementation of web-based commerce. The service providers, such as the agents, will follow everything the shipping companies require.

Fragmentation is the main cause of inefficiencies

Colin Francis, a consultant to Hutchison Whampoa backed portal LINE, mentioned the "30 mad scientists working on our solution in Cambridge."

He also confirmed what had been said earlier in the conference: fragmentation is the major cause of inefficiencies; in-house operations are often broken down by geography, mode and department. So are the databases, as a logical consequence.

Again, a neutral software/platform should go between those fragmented parts to enable the exchange of relevant data. During any work process, monitoring is essential, he said.

Mr Francis drew the example of truck sharing for in-land transport. If carriers share trucks, they could save a lot of money, but in order to do this they'd need to have up-to-date information on the routes and activities of partnering truckers. They'd also need to know who else might be going the same way from or to a depot.

Any data that is being stored on such a system would have to be neutral and non-commercial, otherwise collaborations among competitors would not work.

Tom Wright of TradeShip spoke about technology standards for the integration between supply chain partners. "How do we incorporate information?" he asked.

Apparently, XML and other web-based technologies would eventually replace the need for establishing individual electronic links, he said.

Nowadays you can have a system with "built-in" alert/notification and automated responses to events. This system would could "erase enterprise boundaries and extend the information flow to your partners in real-time," Mr Wright said.

Data can only become more accurate if it is entered at one point only, errors do not occur that easily, he continued. The data repositories are stored neutrally, but it has to be clear who actually owns the data that is fed in.

View from the chair

Tim Power, conference moderator, sums up the discussion at "Virtual Box"

IN "WHAT'S WRONG WITH THE WORLD", G. K. Chesterton wrote, "The Christian ideal has not been tried and found wanting. It has been found difficult; and left untried".

The same might be said for the process of integrating the container shipping community, the theme of the Virtual Box conference held in Hamburg last month.

This is not to say that the providers of e-business services (carriers, portals, logistics software houses and others) are not trying; they certainly are. But it is clear that this work has yet to make a significant impact on the way the industry works today.

This reality was most eloquently expressed by a rhetorical question from the floor, "When should we go to our company Boards and tell them we lied about the uptake of e-business services?"

The rewards of successful integration, though, were on view. Candice Kline of showed how Optimum Logistics' middle-ware, Translink, was allowing the straight-through processing of shipping data between the SAP ERP system of Lyondell and the operations systems of its carrier, Stolt.

This provides high levels of automation in booking, documentation and tracking and corresponding gains in productivity and accuracy.

In the operations arena, LINE's PARIS 2 central dispatch system uses shared information on road haulage plans to optimise the day to day movements of trucks and boxes among a group of carriers, starting to attack the 40% of moves that are currently made empty. 28% savings are achievable.

As Tom Wright of Trade Ship pointed out, the sharing of information required to reap these rewards is getting easier and less expensive: dial up internet access is being replaced by broadband; mobile access to data is becoming increasingly common and traditional EDI will be progressively replaced by cheaper and more flexible ways of data sharing.

Tools to facilitate integration are also now widely available as Ernst Scheel of Mercator explained. He says that the hard work lies not in the technology but in designing the right new business processes and understanding what legacy systems can really do.

Perhaps this goes some way to explain why e-business uptake is slow. Redesigning business processes is hard work and involves managing change; this takes time. This view is supported by the experience of CargoSmart who are seeing rapid adoption in Russia and much slower progress in Western Europe. Clearly when you start

from scratch, you can move more quickly to new processes and systems.

Adoption isn't helped either by the sometimes confusing messages put out by service providers. Comparing container shipping unfavourably with airfreight, a.hartrodt's Will van der Schalk cited carriers promoting their own sites against the portals of which they are members and bemoaned the lack of integration between the portals themselves.

All this means that, for the moment, the customer still has to cope with multiple interfaces if he wants to stay flexible on carrier choice.

This position is not really surprising. The truth is that the development of e-business has hardly started; three years is nothing in an industry that is centuries old. There are advantages too in the current rather chaotic state of affairs, most notably competition, which will keep driving innovation and, in the end greater value to customers.

Looking ahead, there are more questions than answers: will there be inter-portal integration? Will there be a single data repository for all container operations data? Will new web services technology create much more flexible answers to all these problems? Better come to the Virtual Box next September to find out.