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HOW TECHNOLOGY TRANSFORMS OCEAN CONTAINER SHIPPING



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Over the past 15 years, the ocean logistics industry experienced vast changes to business models, services and technology adoption. In 2016, the pace of technology innovation accelerated as participants sought business model optimisation. Digitalisation is now a competitive necessity. This trend will continue in the next 15 years, creating new opportunities – and winners and losers. In this paper, INTTRA outlines our vision for the direction of information technology-driven innovation from our vantage point as a neutral service provider. We foresee that:

- Ocean shipping will become increasingly interconnected, accelerating business velocity, elevating digital networks and neutral platforms, enabling consolidation of operational/financial flows and raising intermodal visibility and engagement via multiple physical tracking devices.
- Digitalisation will leverage new integration protocols and technologies, such as blockchain, predictive analytics, and artificial intelligence to increase efficiency and reduce costs.
- The industry will adopt an agile, iterative

innovation model favouring targeted, short-term ROI technology solutions often delivered by disruptive startups.

- The digital divide between companies embracing full digitalisation and those lagging will widen.

OCEAN INDUSTRY CANNOT AFFORD TO STAY MANUAL; WILL DRIVE TOWARDS FULL DIGITISATION

In 2016, overcapacity reached 30% for many carriers¹, spurring \$8-10B in losses industry-wide², and the top 20 independent shipping lines in 2015 shrank to 14 over 18 months³. Industry consolidation creates the perfect opportunity to rethink processes, digitise shared operations and adopt common technology platforms, reinventing today's highly manual processes and communications. Carriers, forwarders, and shippers also need to standardise procedures to capture synergies from alliances. Many CEOs are using information technology as the primary means of achieving long term-profitability.

The speed of technology adoption in ocean shipping is accelerating.

INTTRA was created in 2001 to transform container procurement, documentation and tracking from manual to digital. INTTRA has been very successful, digitally processing 27% of containers in global ocean trade in 2016. But 15 years later, approximately half of all bookings are still manual. Yet in 2016, we saw an encouraging sign: INTTRA's global eVGM Initiative and other industry groups collaborated on a digital approach to SOLAS Verified Gross Mass (VGM) compliance and development of common standards, resulting in the vast majority of VGMs being transmitted electronically, showcasing the industry's ability and desire to digitalize.

The pace of digitisation accelerated over the past 15 years. Carriers and shippers moved from standardising form exchanges early this century, next to bespoke, single-process products (e.g., rates management) then to ERP systems. Recently, cloud-based Transportation Management Systems (TMSs) have rapidly proliferated, allowing shippers to avoid expensive in-house implementation. INTTRA believes that technology will be the major driver in transforming ocean shipping, while the gap

to more accessible business analytics (e.g., through PaaS and SaaS models), more predictive (e.g., automatically replacing bad data and suggesting outcomes with high probability) with greater accuracy and velocity (via AI and machine learning). These technologies also advance bot usage, which can automate business processes and operations, such as confirming bookings, streamlining customer service or navigating complex environmental and compliance regulations.

Progress is occurring today with early tools and technology solutions, but these are fragmented and lack integration across all data points required to base execution on predictive (future) scenarios rather than historical analysis. Leveraging these trends on a trusted network will create significant opportunities to improve planning, reduce costs, increase efficiencies and business velocity, by utilising standardised data sets and Cloud computing over the next several years.

INDUSTRY MUST MOVE TO A MORE AGILE, ITERATIVE INNOVATION MODEL

- Small, focused tech solutions with short-term ROI. Low margins and traditional allocation of operational vs. technology investment reduce discretionary spending on new technology solutions, even those with higher projected returns. Many expensive ERP projects faltered recently, contributing to distrust in major technology initiatives. INTTRA envisions the emergence of “packaging of innovation” - incremental changes with clear results and faster routes to ROI instead of drastic changes.
- Much opportunity for disruptive startups and focused solutions: This trend will also benefit new and emerging companies that combine shipping and technology expertise to solve well-defined customer problems with advancements in rates management, shipment visibility, predictive analytics, electronic bills of lading and container movements. The “packaging of innovation” is further supported by heavy venture capital investment in logistics technology recently. But this trend could contribute to fragmentation and isolated networks if not implemented on a common platform.

THE DIVIDE BETWEEN DIGITIZED AND NON-DIGITIZED COMPANIES WILL WIDEN

Shipping companies vary in sophistication of technology systems and data use, as well as system integration levels. We see the ‘digital divide’ widening. Currently, service in this industry is as much about

managing paper and regulatory processes as transporting goods. INTTRA believes this will change, with many players disintermediated in the race for first-mover advantage. We see this change necessarily emerging in an agnostic, neutral model that spans the industry.

Operational flow is only as efficient as its slowest link. Full automation industry-wide will take time. The digital divide between ports, terminals, countries, shippers, carriers and container depots will likely expand if organizations don’t take advantage of standardized digital networks. The most advanced players will streamline significant parts of their operations and start building digital networks with other IT-savvy providers, increasing profitability and improving service delivery. INTTRA works with all types of providers and network participants to help enable these improvements.

Preparing for the future: digitize, interconnect, and pilot new models.

We see three actions companies can start taking to prepare themselves for an inevitable all-digital future.

- Participate in and support industry-wide working groups and neutral networks that enable industry standardization and communications.
- Prepare for the digitally integrated shipment lifecycle by digitizing business processes via risk-averse paths of incremental refinement, and combining the best commercially available skills and technology with in-house expertise.
- Invest in, test and pilot new tools and technologies such as analytics and artificial intelligence to identify new opportunities for revenue optimization and cost reduction.

Over the next 15 years, information technology will significantly transform ocean shipping and related logistics value chains, changing industry processes, participants and the overall landscape. Advancements in digitization, integration across the transportation chain and data flows will enable new business models, causing further competitive differentiation. Those who fully embrace technology and select strong partners to drive innovation will occupy the winning side of the digital divide.

¹<http://www.scdigest.com/ontarget/16-08-23-1.php?cid=11138>

²http://www.americanshipper.com/Main/ASD/Container_carrier_losses_could_reach_10b_in_2016_65157.aspx?source=ASDSide

³http://www.americanshipper.com/Main/ASD/Container_carrier_losses_could_reach_10b_in_2016_65157.aspx?source=ASDSide

ABOUT THE AUTHORS

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Jeff L. Howard is Senior Vice President, Product Management and Chief Product Officer of INTTRA. Prior to joining INTTRA, Jeff was Vice President of Flex System and BladeCenter at Lenovo. Before that Jeff retired from IBM after 30 years, holding various global leadership positions in product management and marketing across various IBM systems including responsibilities for product management of IBM POWER5, POWER6 and POWER7 servers. He holds 7 US patents.

Peter Spellman is Chief Technology Officer at INTTRA, responsible for leading global architecture, engineering, and technical operations. Peter has over 25 years of innovative experience in devising, defining, delivering, and managing complex software solutions with the last 8 years focusing on cloud-based systems. Prior to INTTRA, Peter was founder and CTO of TraceLink, a pharmaceutical supply chain network platform. He has also held technology, engineering and product leadership positions at SaaS startups SupplyScape, Performaworks, and iWant, as well as the MITRE Corporation and Microsoft.

ABOUT THE ORGANISATION

INTTRA is the electronic transaction platform and information provider at the center of the ocean shipping industry. Its customers can book and track containers and submit shipping instructions within the industry’s largest e-commerce network, gaining access to over 45 carriers and NVOCs. Through Ocean Schedules, customers can select from 12 million voyages annually.

ENQUIRIES

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