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Combining human expertise with state-of-the-art logistics technology

New algorithms are improving logistics, but the human touch remains important. Here's why.

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There are different opinions about whether containers will be shipped without any direct human involvement in the near future. What is indisputable is that the new frontier of tech-enabled operations will bring about a leap in productivity if paired with deep logistics expertise. According to the *Economist*, "removing administrative blockages and outdated practices would, by some accounts, do more to boost international trade than eliminating tariffs."[1] We know, for instance, that shipping flowers from growers to retailers involves up to 200 documents and sign-offs from more than 30 unique organizations. Manual processes, such as spot quotation to booking, might take around three days on average.[2] Thus, there is significant potential to capture additional value from the $150 billion global forwarding market, with Drewry estimating current "waste" at over $500 million.

Is it really realistic to ship containers with almost no human involvement? How important will human expertise in logistics be?

Traditionally, logistics firms aim to optimize four contradictory goals: customer satisfaction, employee satisfaction, supply-chain reliability, and efficiency gains. Given strong industry-wide cost pressure, the focus tends to skew toward efficiency gains while the other three goals get overlooked. This occurs because of the strong focus on optimizing individual process steps that run on asynchronous and dispersed systems, preventing proactive communication between the customer and the forwarder. Eventually, the greatest value added by the forwarder is its ability to apply deep logistics expertise while handling exceptions for customers.

Humans and algorithms at Forto

We believe that the best logistics systems combine human input and algorithms. People are the most natural contact point for customers, and their logistics expertise enables proactive and solution-orientated exception handling. Especially in high-wage European markets such as Germany, the highly skilled logistics workforce can spend their time on exception handling, rather than processing repeatable and standardized tasks. A recent report published by Novosensus stresses that freight-forwarding employees feel only moderately valued and recognized when pursuing standard tasks; by contrast, they feel appreciated when involved in exception handling, which contributes to overall job satisfaction.[3]

Algorithms, on the other hand, significantly improve daily operations for both customers and digital forwarders while simultaneously pushing efficiency gains to new frontiers. At Forto, we have already seen efficiency gains double by switching from traditional to digitized processes in our transport-management system. An internally developed system gathers all data along the supply chain centrally and notifies logistics experts when algorithms detect unusual shipment activities, allowing exceptions to be handled proactively. Our SCAI [supply-chain artificial-intelligence] system serves as a single source of truth, provides checklists, and applies artificial intelligence to improve efficiency by ensuring leaner and more reliable processes, as well lower costs. This is only one of multiple algorithm-enabled enhancements. In addition to improving exception handling, we have also automated many manual steps, such as bookings through application programming interfaces (APIs). Finally, we have automated customs-clearance processes and developed e-documents that will change how shipments are handled. There is still plenty of room to improve further.

For customers, tech-enabled operations do not only result in cost advantages. They also allow companies to maintain "one face to the customer" without any efficiency loss. Only one contact point is needed from shipment booking until arrival, and customers can take full control of their supply chain. Overall, the algorithms ensure three main customer benefits:

[1] "The global logistics business is going to be transformed by digitisation," *Economist*, April 26, 2018, economist.com.
[2] "How long does it take for your freight forwarder to provide you with a quote?," iContainers, March 11, 2016, icontainers.com.
[3] *Study of the human side of the logistics, freight forwarding and shipping industry*, Novosensus, January 2020, novosensus.org.

The best logistics systems combine human input and algorithms.

1. Customer-satisfaction surveys show that a platform's ease of use leads to customer-satisfaction higher than the typical industry standard.

2. Tech-enabled operations reduce the work steps required before successful booking, as well as the steps required for further documentation, tracking, communication, and monitoring.

3. Companies can offer customers new solutions, such as purchase-order management, that significantly improve supply-chain visibility and go beyond simple container tracking to product-specific tracking and steering.

In addition to the customer benefits, the algorithms also add significant value from a logistics-technology (LogTech) perspective. These value gains stem primarily from two sources. First, they optimize efficiency by improving operations. Second, they increase the quality of data, thereby creating additional monetization opportunities. Consider the following:

— Automation can streamline internal operations and lift earnings before interest and taxes (EBIT) margin by up to 5 percentage points. This EBIT uplift can subsequently be shared by all partners in a transaction, creating a win-win situation.

— Algorithms allow companies to optimize available rates and pricing instantly—a capability that is especially important for dynamic spot-market pricing.

— The availability of centralized, high-quality data allows supply-chain professionals to use new software-as-a-service (SaaS) solutions. Customers get improved visibility into their supply chain, resulting in working-capital savings of up to two to five days of inventory outstanding. The improvements primarily result from better forecasting, which optimizes order frequency, and from adjustment of safety stock. LogTech firms can thus access an additional revenue stream.

The SaaS business models originated in Silicon Valley and quickly spread around the globe. Today, they can be found in fast-growing startups not only in the United States but also in Asia and Europe. But how do the advantages of SaaS differ in magnitude and effect across different regions? According to the report *Startup funding in logistics* by McKinsey, the majority of LogTech investment flows into Asia and the United States. However, we expect the European LogTech scene to catch up for three main reasons.

First, the presence of incumbents in Europe yields a unique talent advantage. In 2019, over 30 percent of global forwarding revenues came from European incumbents such as Kuehne+Nagel and DHL Global Forwarding, signaling the importance and expertise of European forwarders. Europe's reputation for deep logistics expertise also allows LogTech startups to find and hire the right talent relatively easily, compared with other regions. The strong hub structure in Europe, which is concentrated around major ports such as Rotterdam and Hamburg, contributes to the easy access to talent. (The top three European ports account for 16 percent of

gross weight of goods handled.) At Forto, many of our recent top-management hires have long-standing logistics experience.

Second, the European logistics market is sufficiently large and still growing. Manufactured goods represent a disproportionately high GDP share of 15 percent in Europe, compared with only 11 percent in the United States. The European economy thus has a greater need for efficient logistics services.

Third, the funding time gap will close. Many startups in Asia and the United States recently raised later-stage funding, while their European counterparts are predominantly in earlier stages. Furthermore, the perceived underfunding is likely biased, since incumbents have made notable investments into internal, digitized solutions that are not incorporated in the overall funding perspective, such as DHL's marketplace, Saloodo.

We believe that the symbiosis of algorithms and humans will create a significant opportunity to improve supply chains during COVID-19. The algorithms are designed to fix complex and broken processes while people with logistics expertise can handle exceptions. We already see increasing demand for digital and flexible logistics solutions that allow global trading companies to adapt their supply chains quickly as circumstances change. For instance, companies may now want to respond rapidly to dramatic shifts in consumer-demand patterns, increase the scale of medical-equipment imports, or adjust to rapidly changing air freight markets.

Overall economic developments will also affect the VC [venture capital] market. In the aftermath of the financial crisis of 2008 to 2009, global GDP decreased by single-digit percentage points and global VC deal volumes declined by approximately a quarter. On the other hand, the effect on European deal volumes was rather modest, with declines of about 10 percent seen. Earlier-stage funding was more affected than later-stage funding. In contrast to 2008, and for the first time in history, governments are now also discussing protection mechanisms for young ventures. As of today, we expect COVID-19 to have the greatest impact on earlier-stage startups and industries that are directly affected. Logistics and trade remain the essential backbone of all economies, and these large markets will provide established LogTech startups continuous growth opportunities.

In conclusion, we believe LogTech will maintain its momentum. despite ongoing challenges, and become an even more interesting opportunity for investors. The European market, with German startups such as Cargo.One, Forto, and Sennder, coupled with continuous innovation by incumbents such as Maersk Spot by Maersk, is constantly growing—and it will be exciting to see what's ahead.

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