



FEATURE

Creating a competitive supply chain advantage through connected communities

The future of movement of goods

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THE DELOITTE CONSUMER INDUSTRY CENTER

Key success factors that can drive the movement of goods in the postpandemic world.

EVEN BEFORE THE pandemic started, global supply chains were experiencing growing pains as they adapted to meet the pressures of rising demand and a delivery system in need of an overhaul.¹ For example, shipping goods such as medicines, groceries, and everything else that powers our daily lives demonstrated the complexities of the modern supply chain. A single global shipment through this network of cargo ships, ports, airlines, rail lines, and trucking companies can involve as many as 30 businesses and up to 200 unique interactions, from its manufacturer to its final destination.²

METHODOLOGY

Deloitte commissioned an online survey with 182 supply chain leaders operating across trucking, ocean, rail, manufacturing, and retail in early 2020. We supplemented this research with conversations with supply chain and industry leaders operating across multiple segments of the transportation value chain. The survey results, coupled with leaders' input, enabled segment-specific insights.

Supply and demand issues during the pandemic revealed how fragile supply chains can be. But the pandemic also highlighted potentially new opportunities that can be derived from the current network and can help meet the increased demands of tomorrow. Change doesn't come easily, however. Improving the resiliency of the global transportation network will likely require players in all sectors to redefine how they connect and collaborate across the ecosystem to thrive in the years ahead.

Prioritizing key success factors

In our article, *How are global shippers evolving to meet tomorrow's demand?*, we examined how growing demand, increased customer expectations, and infrastructure limitations exert pressure on global supply chains and expose their inefficiencies. While innovation is driving measurable change across technology domains, we suggested that three pillars of strategic thinking—the connected community, holistic decision-making, and intelligent automation—can help define the future movement of goods.

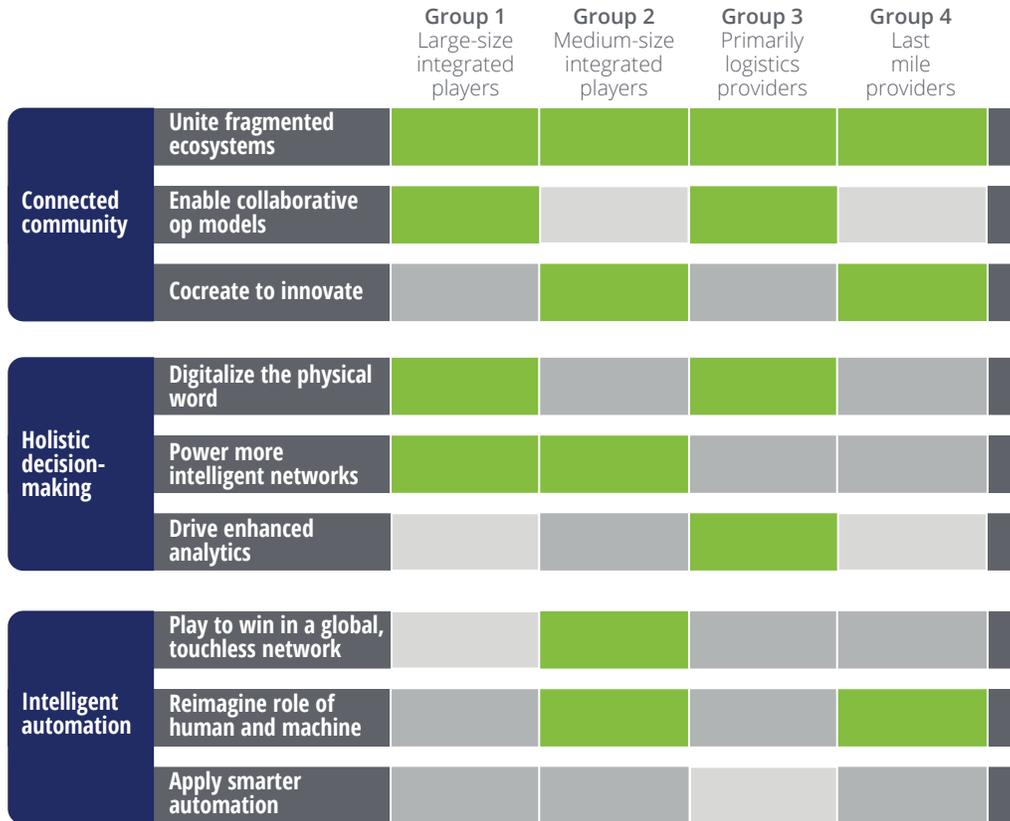
To confirm this thinking, we gathered deeper insights into these pillars and the pace of transformation in the ecosystem from supply chain executives (figure 1). Within each strategic pillar, we grouped specific action items into three success factors (for a total of nine) based on two components: company size (market share, revenue) and where a company plays in the ecosystem value chain (e.g., trucking vs. ocean freight). These nine success factors can help organizations succeed in the transportation segment.

We believe that recognizing these success factors can help steer companies as they navigate an increasingly complex and competitive transportation supply chain environment. The level of adoption of these factors varies from company to company, and can be prioritized as low, medium, or high importance. Company priorities differ based on their role in the ecosystem value chain (the “scope of individual organizations”) and the size of the company (i.e., market share, revenue), as noted above.

FIGURE 1

Prioritization of success factors to help organizations succeed

■ High ■ Medium ■ Low



Group 1: Large companies (>US\$10B of revenue + >20% of market share) that offer land transportation and air cargo
Group 2: Medium-sized companies (>US\$10B of revenue + <20% of market share) that offer land transportation and ocean
Group 3: Small companies (<US\$10B of revenue) that primarily offer logistic services such as 3PL/4PL and freight forwarding
Group 4: Companies that offer last-mile delivery of packages either directly or via a network of local, nonprofessional couriers

Notes: High—To be prioritized within next six months; Medium—To be prioritized between six and 12 months; Low—To be prioritized after 12 months.

Source: Deloitte analysis.

In this first of three articles, we delve deeper into connected community with a specific focus on the first three success factors to unite fragmented ecosystems, enable cooperative operating models, and embrace collaborative innovation.

Uniting fragmented ecosystems: A turning point in connectivity

Fragmentation is among the biggest hurdles across the global movement of goods today. A lack of horizontal connectivity across providers, cargo

owners, and end customers makes coordination difficult, contributing to systemic industry inefficiency. While industry pain points might seem insurmountable, there is hope. Meeting tomorrow’s rising demand and customer expectations can require ecosystem players and supply chain partners to rethink collaboration to bring efficiency to the network.

Enabling technologies are a key to uniting fragmented ecosystems, as these technologies

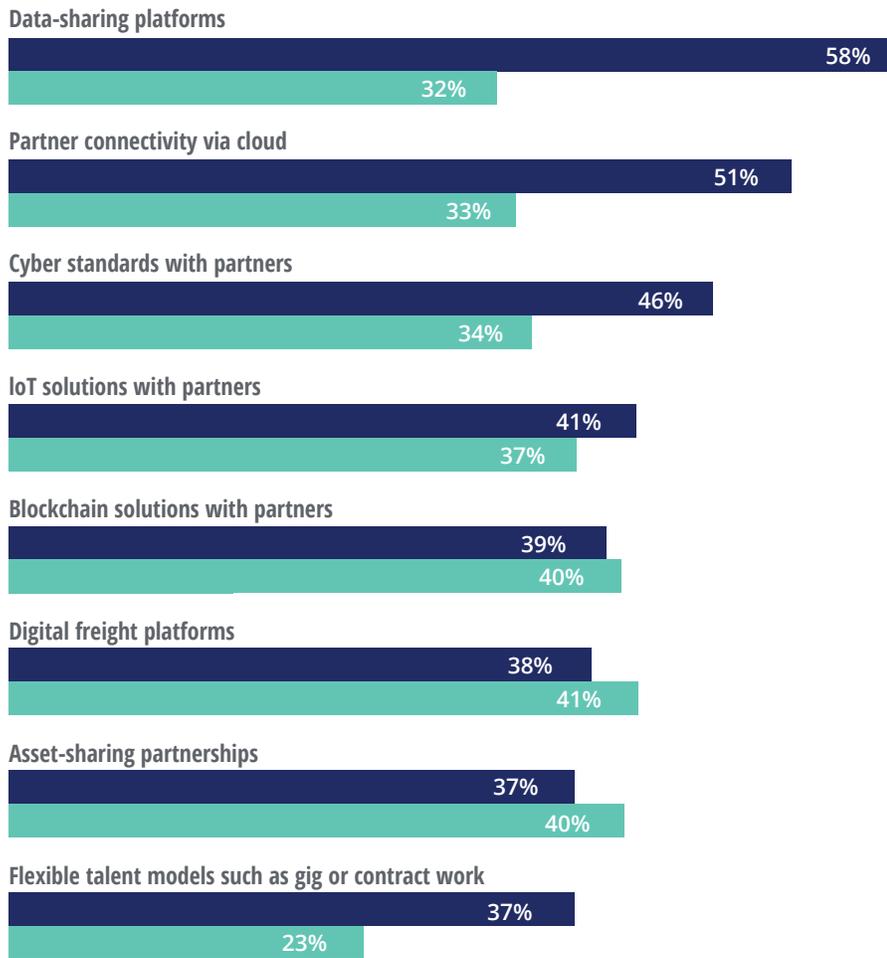
facilitate enhanced connectivity across the transportation network. This is evident in the fact that strategic investments in connectivity—once considered leading edge—are now becoming more mainstream.

A deeper look at our data suggests that an era of greater integration among transportation organizations is unfolding in the marketplace today. For example, smart port platforms in Rotterdam and Hamburg have recently expanded

FIGURE 2

Toward a more connected community

■ Actively using/piloting ■ Plan to invest in the future



Note: N=170

Source: Deloitte Future of the Movement of Goods Survey.

to the Port of Los Angeles, plugging railroads, truckers, chassis providers, warehouse operators, and other stakeholders into a digital feed of incoming cargo. Such planning tools help stakeholders become nimbler and more efficient, especially when managing e-commerce–driven surges that congest US ports.

Data-sharing also appears to be gaining momentum (figure 2). In fact, data-sharing participation surpasses 58% among retailers and manufacturers managing their own supply chains. These are areas where close supplier-distributor relationships have already driven significant digital supply chain integration. Data-sharing is currently the most used capability among respondents, which helps enable a more connected community. Of the respondents, 32% plan to implement data-sharing in the future. Even so, we still see variances in data-sharing adoption, depending on a company’s role in the ecosystem value chain.

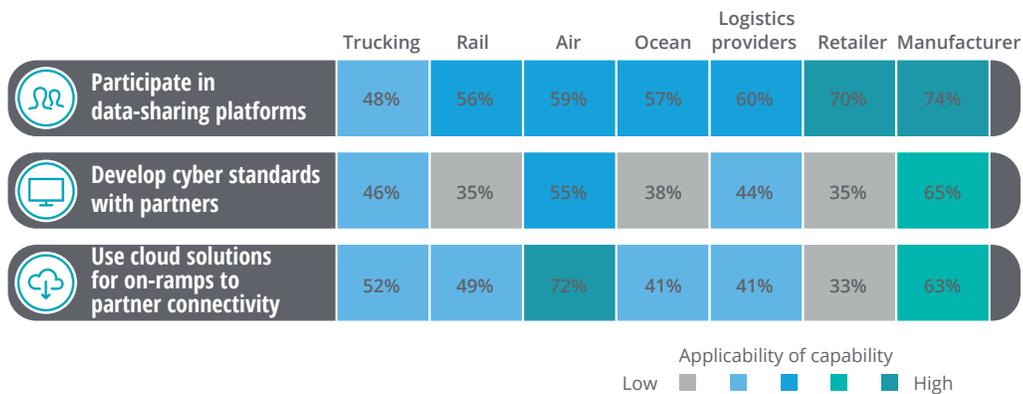
There are several capabilities that can be leveraged to enable a connected community. Figure 3 shows the top three capabilities and how specific segments are currently adopting them. Trucking, for example, illustrates that part of the story. It’s a

highly fragmented market—small players and tighter IT budgets—with 90% of the 470,000 US trucking carriers (about two-thirds of total trucking capacity) operating fleets of six or fewer trucks. Fortunately, pure tech players, such as digital freight exchanges, are stepping in and aggressively filling the gaps.³ These aggregators connect capacity to cargo and, generally, target the spot trucking market while seeking to expand across other segments.⁴

These exchanges create a new layer of connectivity in the ecosystem. But with 48% participation for trucking noted in figure 3, digital exchanges still have a long way to go. Further, the dozens of digital freight platforms competing for users could create a logistical challenge across the network, as no single platform would likely gain tangible network effects. We believe that consolidation of these exchanges could improve the digital freight landscape in the future. This, in turn, makes these platforms even more vital to the future success of transportation’s digitization journey. In the end, the data demonstrates that where you operate in the transportation ecosystem has an impact on the degree of applicability of the capability.

FIGURE 3

Top three capabilities needed to enable a connected community, by segment



Note: N=170.

Source: Deloitte Future of the Movement of Goods Survey.

GOING WITH THE DATA FLOW

Speaking of data, in a previously data-poor industry, rising digitalization and greater connectivity seem to be driving new value across multiple business functions of transportation organizations (figure 4). Functions such as sales and marketing and customer relationship management (CRM) are likely driven by retail, where data-sharing with supply chain partners is common and often centered around customer data.

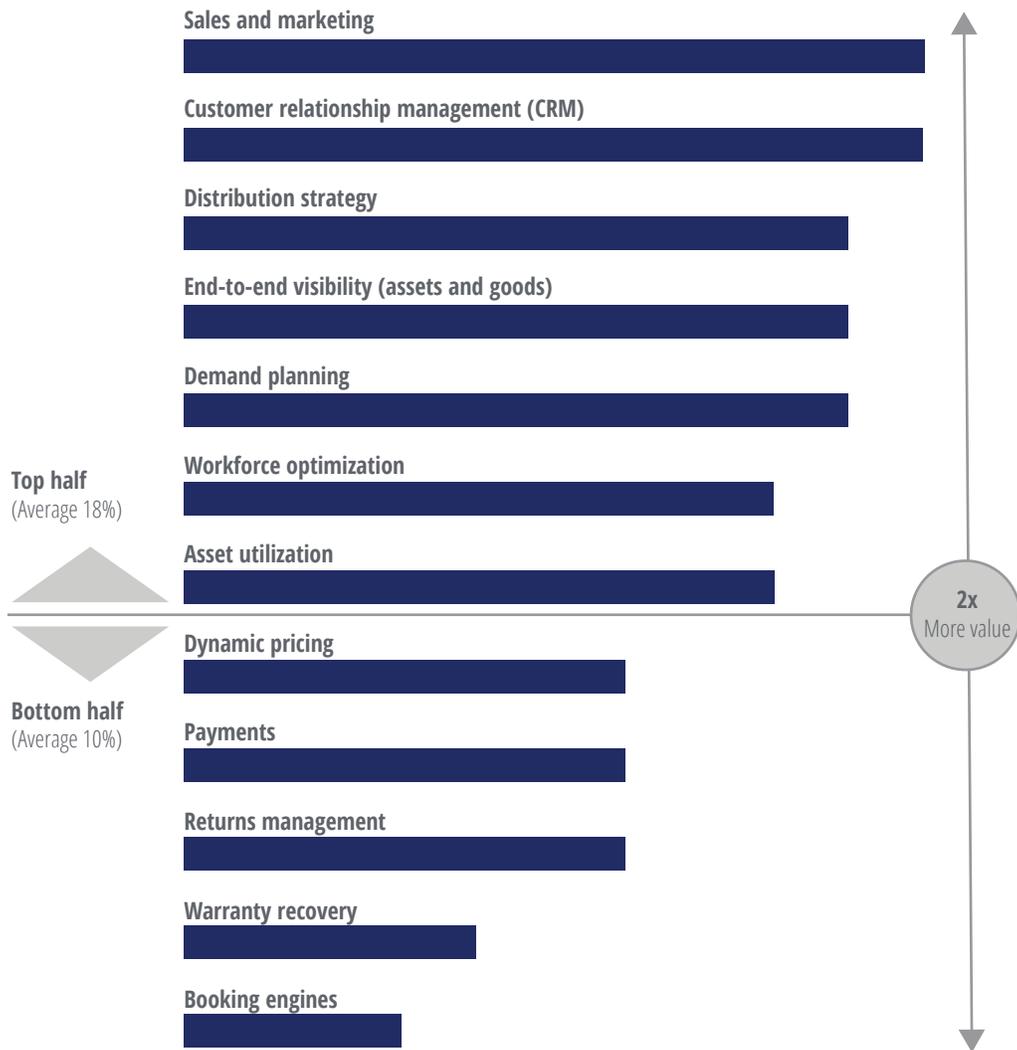
The evidence suggests that connectivity is also improving supply chain orchestration.

Figure 4 shows that players are looking to find value across all processes. The top two processes (sales and marketing and CRM) are two times more likely to generate value for players than the bottom two processes (warranty recovery and booking engines).

FIGURE 4

Rank of processes where data-sharing is driving value

■ Among survey respondents actively investing in/piloting data-sharing platforms



Note: N=99.

Source: Deloitte Future of the Movement of Goods Survey.

Enabling cooperative operating models: In it together

Enabling cooperative operating models is critical to the industry because growing real-time ecosystem connectivity can help create new collaborative, transparent, and technology-driven ways to do business.

The implications of a connected community extend beyond process efficiency. And early use cases in asset and talent management already demonstrate changes to some operating models. Asset management, maturing digitization, and ecosystem connectivity are also making a strong case for concepts such as asset-sharing (i.e., idle assets of one company can be leveraged by others).

In talent, real-time connectivity to open workforces, including gig workers, is enhancing organizational agility and transforming segments of the value chain (e.g., nearly US\$14 billion in global funding for crowdsourced delivery platforms in last-mile delivery since 2011, according to Deloitte research). Both use cases create sustainable opportunities for organizations to more effectively flex with demand and introduce variable cost structures into operations.

Deloitte's survey measured momentum behind asset-sharing and open-talent models as an early indicator for connectivity's broader impact on operations. These models ranked lowest in strategic investments in the connected community pillar. With 40% of respondents citing plans to explore asset-sharing in the future, such practices have potential for future growth.

The future of new talent models, however, is a bit more nuanced. One-third (34%) cited current use of gig workers, and only just under one-quarter (23%) cited future plans to transition to this talent model (figure 2). Beyond the impact of gig work around last-mile delivery, this model has not been

widely adopted in other transportation domains. For example, required licenses or certifications create barriers to entry for job seekers. Additionally, the courts could soon reclassify gig workers from contractors to employees, which could cloud the future of this promising talent model.

Collaborative innovation in a connected community

It is imperative for the industry to collaborate because, just as supply chain partners collaborate to move goods around the world, realizing the full potential of many advanced technologies will likely require teaming among diverse partners.

In fact, some of the most significant innovation happening across the movement of goods (e.g., cloud-based, integrated data-sharing platforms built around port communities) is coming from unprecedented industry collaboration.

Examining connected community through the lens of collaborative innovation, we see instances—particularly in higher-risk or unproven products and markets—where partners with complimentary capabilities are cocreating to accelerate modernization. For example, IBM is teaming with large telecom providers to fuse IoT and AI. This demonstrates how various tech giants are innovating beyond traditional boundaries that otherwise would remain out of reach for a single company to address independently, cost-effectively, and efficiently.

As supply chain transformation focuses on advanced technologies in the years ahead, we expect global shippers to take a more collaborative approach to innovation with key partners within the industry, and nontraditional partners beyond it. Evidence of collaborative innovation is emerging, particularly around technologies that are likely to require teaming, such as cybersecurity.

Nearly half of our survey respondents (47%) say they are working in tandem with supply chain partners to improve cybersecurity standards. This supports our findings of stronger digital integration as measured in our study. Collaborative teaming percentages are no less important, though they are lower for other technologies we measured, including IoT (42%) and blockchain (39%). But considering the relative nascency of those platforms, this activity is perhaps stronger than expected.

Of the respondents who use blockchain, one in five is considering early adoption. Our data reveals that blockchain is performing well as nearly 19% of respondents are looking to improve access to shared data repositories. Further, multiple stakeholders need the ability to modify these shared repositories, 41% of respondents said.

Across the transportation industry, cocreation is gradually becoming a driving force behind innovation in the movement of goods. Stakeholders—some even direct competitors—are growing more actively involved in planning and development, helping to create open platforms with mutually beneficial results. Examples of organizations looking beyond the four walls of internal R&D include collaborative partnerships between DHL and Huawei, as well as IBM's blockchain consortia agreements with global shipping organizations.

In last-mile delivery, we see FedEx and Pizza Hut teaming for robotic pizza delivery, and Target and Shipt are working to improve the crowdsourced last-mile delivery model in retail. In the years ahead, successful innovators will likely be those who leverage an ecosystem strategy that aligns their product portfolio with technology shifts, market trends, and evolving customer needs.

Conclusion: Connecting communities for success

A few players shaping today's logistics expectations epitomize our thinking around connected community. Amazon's end-to-end transportation network is one example. Alibaba's Cainiao, a digital logistics platform integrating hundreds of logistics providers, is another. Amazon's and Alibaba's digitally native platforms have reached incredible efficiency at scale and are helping to encourage more traditional players to step up.

Of course, there is no one solution—or even a set of solutions—that will work for every organization. A lot depends on the size of the business and where you play within the overall transportation supply chain ecosystem, so large integrated players will have different critical needs than logistics providers.

FIVE STEPS TO A MORE CONNECTED COMMUNITY

1. Develop and participate in new data-sharing platforms
2. Leverage cloud solutions to provide on-ramps to partner connectivity (e.g., cloud-based analytics platforms)
3. Participate in asset-sharing partnerships and flexible talent models
4. Collaborate and innovate with key partners to realize the full potential of advanced technologies
5. Automate physical work and digital processes/transactions at partner connection points

Our study captured signals of critical digital transformation in motion. Participation in integrated data-sharing platforms and investments in cloud connectivity suggest a critical turning point in the movement of goods. Transportation players should continue building on this momentum, focusing on the three overlapping dimensions of connected community discussed above—better connectivity, taking an ecosystem approach to operating models, and collaborative innovation.

In the end, as companies advance their operations toward the new normal, we believe they need to consider connected community—and holistic decision-making and intelligent automation as will be discussed in the next articles in this series. While the maturity of companies across each strategic pillar varies in the transportation ecosystem, it is imperative that the industry as a whole continues to unify its approach to improve the movement of goods in the post-pandemic world.



Endnotes

1. Deloitte FOMOG executive benchmarking and Deloitte analysis: "Out of 1,035 responses, pressures of rising demand had the highest applicability with 75% and technology with 70%."
2. American Shipper Staff, "Port of Antwerp to pilot blockchain container handling project," FreightWaves, June 28, 2017.
3. Adrian Gonzalez, "Trucking capacity: Tapping into the long tail," Talking Logistics, November 28, 2017.
4. Ibid.

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