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Fast and Furious

Riding the next growth wave of logistics in India and China

September 2019

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Acknowledgements

The logistics sectors of India and China are on the cusp of disruption. Robust economic growth and technology improvements have caused considerable changes. Despite significant country-specific trends and nuances, the underlying themes of economic growth, digital disruption and changing customer preferences prevail. These powerful themes will shape the future of the logistics industry over the next few years. They also give rise to clear opportunities for existing logistics players.

In this context, McKinsey's Travel, Transport & Logistics (TTL) Practice in India and China collaborated to develop twin reports that showcase trends, perspectives and opportunities in the logistics industry of the two countries.

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Thriving in the evolving Indian logistics sector

Logistics at the tipping point in India

In her Budget 2019 speech, Finance Minister Nirmala Sitharaman stressed the importance of robust physical connectivity[1] in achieving the government's vision of a $ 5 trillion economy. Existing government measures across various modes of transport, such as the Pradhan Mantri Gram Sadak Yojana, industrial and freight corridors, Bharatmala and Sagarmala projects, Jal Marg Vikas and UDAN Schemes are important enablers for enhanced logistics. The Indian logistics sector, already a $ 200 billion market[2], is set to grow at over 10 percent CAGR in the next five years to reach around $ 320 billion to 330 billion[3].

It is an exciting time for logistics companies—many are starting to create transportation eco-systems to offer integrated services, funding seems to be clearly flowing towards certain areas, and transport modes beyond road are receiving critical government attention. How well logistics players turn these emerging themes to their advantage could help them enhance efficiency and reduce costs for customers, unlocking business growth.

The sector is also constantly grappling with inefficiencies, however, because of which the cost of Indian logistics is 13 to 14 percent of GDP (in developed nations these costs amount to 8 to 10 percent of GDP)[4]. These inefficiencies stem from three reasons:

1. The two most unorganized sectors dominate the logistics market—road transport and warehousing. Road transport is particularly deeply fragmented—truck owners with fewer than five trucks constitute more than half of all goods vehicles on the road[5].
2. India's modal mix is heavily skewed towards road, with 60 to 65 percent of transport happening via road compared to 25 to 30 percent in developed countries, prompting higher costs[6]. The use of inland waterways and coastal shipping is limited, while the containerization of cargo in rail remains minimal[6].
3. Indirect costs are high[7] and include inventory carrying costs, theft and damages—often because of poor planning, forecasting and lack of proper management of stock.

1 https://www.indiabudget.gov.in/doc/Budget_Speech.pdf
2 Does not include hidden costs
3 https://www.business-standard.com/article/companies/logistics-market-seen-growing-10-5-a-year-to-reach-215-bn-by-2020-study-119031800701_1.html; Industry reports, expert interviews
4 https://economictimes.indiatimes.com/news/economy/policy/multimodal-logistics-park-policy-on-the-anvil/articleshow/66202088.cms
5 https://www.crisil.com/content/dam/crisil/our-analysis/reports/Research/documents/2018/november/crisil-research-opinion-road-turns-rough-for-small-fleet-operators.pdf
6 https://commerce.gov.in/writereaddata/uploadedfile/MOC_636850448855371480_Notification-Draft-05022019.pdf
7 https://www.livemint.com/Opinion/QwB4qFUMhwpQCQob0okhMN/Debunking-Indias-logistics-myths.html https://economictimes.indiatimes.com/news/economy/policy/multimodal-logistics-park-policy-on-the-anvil/articleshow/66202088.cms

1. Create an ecosystem through platformization for cost leadership

Several logistics companies are testing models to create a more transparent platform-based demand and supply matching system along with other value-added services[8]. A digital ecosystem or one-stop shop for all trucking needs could help optimize value across the chain of service providers, brokers, shippers and other partners like financers, fuel suppliers and spare part sellers.

1.1 Why the future seems to lie in platformization

A move towards an ecosystem and platformization could be logical and inevitable for three reasons

— **Road transportation is highly fragmented:** The approximately $ 110 billion market in India[9] can be divided into full truck load (FTL) and less than a truck load (LTL—which is 35 percent of the road transportation market). Owners of fewer than five trucks provide more than half of all goods vehicles on the road. Platformization provides the optimal means to aggregate such a fragmented market and better utilize trucks.

— **The digital revolution is sweeping the logistics sector:** India is one of the largest and fastest-growing markets for digital consumers, with 560 million internet subscribers in 2018 (second only to China)[10]. The cheap availability of data[11] and budget smart phones has brought the driver community online. The potential for disruption in logistics has been attracting investors over the last five years—total funding grew by 77 percent from $ 161 million in 2013 to over $ 2.8 billion in 2018[12].

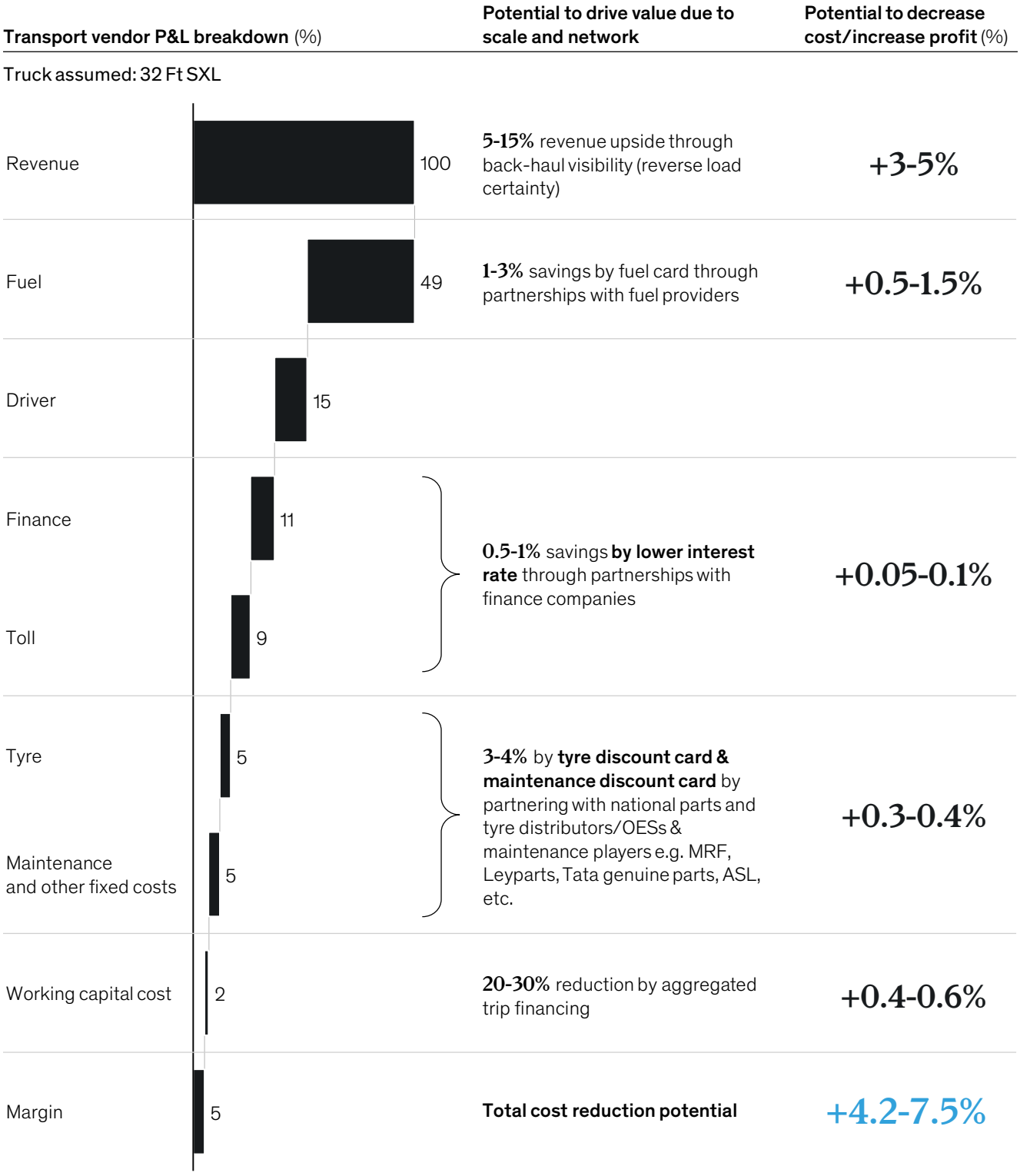
— **Significant issues plague the transportation value chain:** The market depends heavily on regional brokers and struggles with financing issues. Shippers face issues such as low-price power, low efficiency and transparency, and the limited visibility of vehicles and shipment in the value chain. Carriers lack skilled drivers, technology, struggle with unpredictable backhaul availability and face long detention times. Middlemen (one or many) bridge the distance between the shipper (load provider) and truck/fleet owner resulting in additional costs in the system.

A network and greater scale could help to organize this highly fragmented market, streamline costs for customers/shipment providers, convert large LTL to FTL by combining load and ensure steady load and profits to carriers/truck owners. This could help logistics players to double margins and resolve key issues (Exhibit 1).

8 Discussed later in this section
9 India Logistics: Clear Road Ahead, Edelweiss, 26 November 2018
10 Digital India: Technology to transform a connected nation, McKinsey Global Institute, March 2019
11 Digital India: Technology to transform a connected nation, McKinsey Global Institute, March 2019: The monthly data price per GB as a percentage of monthly GDP fell from 6.1 percent in 2014 to 0.1 percent in 2018 (McKinsey Global Institute analysis)
12 Crunchbase, VCCEdge

Exhibit 1

Scale is the name of the game: To organize the market, players need to start creating an eco-system as they can provide significant cost benefit to customers



2x

margin potential

Already, logistics players are attempting to create a network at scale through one of three approaches:

— **Line haul (FTL/PTL) focused network (asset-backed/"asset right"):** This model requires the right mix of asset ownership and service provider partnership to be cost competitive. The load needs to hit a critical mass on the network to ensure maximum utilization of trucks resulting in cost leadership. Algorithm-based load allocation could help select the right truck and ensure backhaul availability with minimum wait times.

— **Last-mile delivery network:** While this model helps to reduce costs by consolidating loads to convert LTL into FTL movement, it can also use the same network for only FTL services. Offerings include same-day delivery, time-window/slotted delivery, multiple payment options, streamlined return logistics and 24x7 visibility. The fulfilment centres also function as warehouses.

— **Hyperlocal services:** This model requires high utilization to address skewed demand during peak time periods. For this model, load consolidation and route planning are critical to reduce costs. Key success factors also include expanding the network to multiple cities across India as well as deep pin-code level coverage within the city. Utilization of the fleet by venturing into adjacent value pools may become the key (e.g. food delivery agents doubling up as parcel carriers in lean time periods)

Logistics players could choose a mix of different models to offer integrated, "one-stop shop" services to their customers. For instance, TVS Logistics Services (now TVS Supply Chain Solutions) bought a 51 percent stake in WDSI, which owns the platform iLoads[13]. This adds line-haul network capabilities to their existing last mile and warehousing capabilities. Delhivery—which started as a hyperlocal food delivery startup, added e-commerce delivery and now also offers cross-border, B2B logistics and integrated distribution solutions[14]. Similarly, Stellar Value Chain Solutions (a contract logistics company) acquired Patel Roadways to penetrate the express and LTL distribution space in India[15]. LoadShare is building a network by enabling small and medium enterprises (SMEs) in logistics with technology, operations know-how and a pan-India part truck load network[16]. Global players like Hong Kong logistics startup Lalamove is expanding its on-demand delivery services in India[17].

1.2 How logistics players could tap the platformization opportunity

Logistics players could strive for success by doing the following:

— **Achieve scale at speed:** This is a market where the "winner will take most" if not "all". Many aggregator platforms have vied for this space in recent years. Numerous active trucks/service providers and shippers on the platform could optimize load matching, backhaul availability, benefits due to bulk purchasing, etc. Even players who initially decided against using brokers rapidly moved to partnering with them in favour of scale. Achieving scale helps build immunity against new players. For instance, truck-hailing platform Blackbuck has grown to cover 3 lakh trucks in three years and aims to increase the number to 10 lakh by 2021[18]. Similarly, Rivigo has launched Relay as a Service (RaaS) to all fleet owners apart from their owned trucks to bring in efficiency at scale.[19]

— **Invest significantly to scale network:** While the number of funding rounds is declining year-on-year, the average size has increased. In FY 2019–20 YTD, around 25 percent of the deals received over $ 100 million as funding[20]. Private equity and venture capital (PE/VC) funds have identified a set of companies they wish to consistently invest in to transform them into national players with significant scale—pushing to the forefront a set of winners from the initial start-up pool. In a visible consolidation, a select group of companies are receiving around 60 percent of the funding share (Exhibit 2).[19]

[13] https://www.business-standard.com/article/companies/tvs-logistics-services-buys-51-stake-in-chola-s-wdsi-for-rs-422-mn-118092000998_1.html
[14] https://tech.economictimes.indiatimes.com/news/startups/et-startup-awards-2019-delhivery-wins-startup-of-the-year/70322313
[15] https://www.livemint.com/companies/news/warburg-pincus-backed-stellar-value-chain-buys-logistics-firm-patel-roadways-1555621104722.html
[16] https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/logistics-company-loadshare-lands-rs-32-crore-in-series-a-round/articleshow/63690577.cms?from=mdr
[17] https://thepassage.cc/article/1184
[18] https://asia.nikkei.com/Business/Startups/India-s-Uber-for-trucks-eyes-million-drivers-as-it-nears-unicorn-status
[19] https://www.itln.in/rivigo-launches-relayasaservice-to-revolutionise-trucking-goods-carrier
[20] Crunchbase, VCCEdge

— **Have a strategic approach to network creation:** This could be crucial to limit early losses, ensure service providers stay on the platform and achieve operational efficiency. Players could define the truck types, industry segments and corridors or routes where they want to operate and achieve scale in those. Mastering "to" and "fro" regions is a good way to ensure return load availability, be cost competitive and earn higher margins on those specific lanes/corridors.

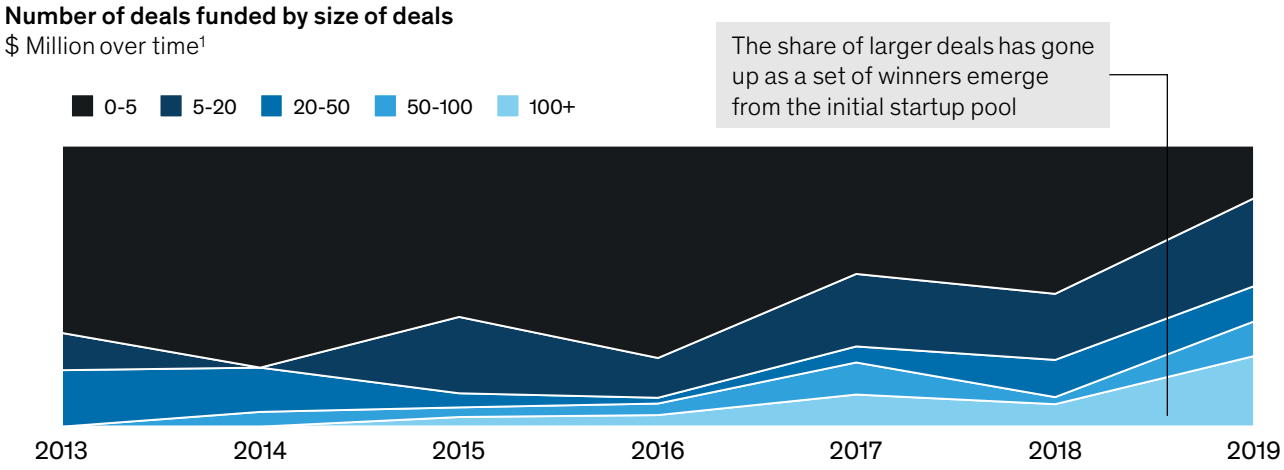
— **Treat technology as important but not more than hygiene capabilities:** While technological capability is essential for a seamless interface with all partners on the platform, players still need significant micro market ("mandi", broker and truck owner) knowledge and sales capability for operational efficiency. Multiple truck aggregating startups have emerged and shut shop, such as Trucksumo, Truckmandi, Zaicus, etc. because technology alone cannot replace brick and mortar businesses.[21]

— **Go "asset right":** By definition third party logistics (3PL) means asset light, but some form of asset ownership might be required to kickstart players in the quest for network scale. As an example, to offer a premium road transportation service, DHL launched SmarTrucking, a unique model of a 100 percent owned fleet for DPDHL—which usually follows the asset-light model of leasing vehicles. They aspire to create a fleet of over 10,000 trucks in India[22].

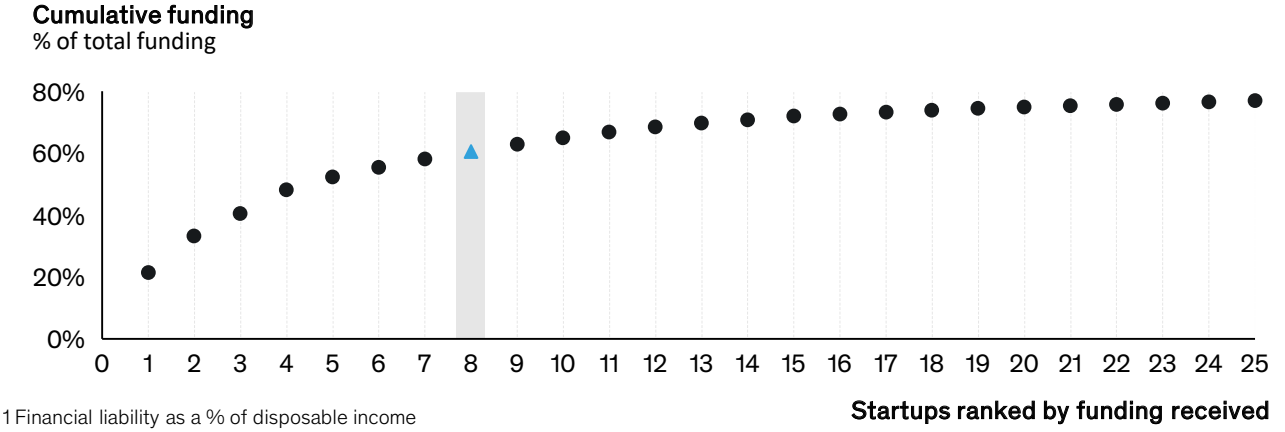
Exhibit 2

There is a visible consolidation of funding happening with 60%+ of funding going to only 8 players

25% of deals received funding of $100 Mn+ in FY'20



8 players getting 60%+ funding



1 Financial liability as a % of disposable income

Source: CB Insights, Crunchbase, Company websites

[21] https://economictimes.indiatimes.com/small-biz/startups/how-dreams-of-logistics-startups-turned-to-dust/articleshow/56695456.cms?from=mdr

[22] https://economictimes.indiatimes.com/industry/transportation/shipping-/-transport/dhl-launches-transportation-company-aims-to-own-10000-trucks-by-2028/articleshow/64292069.cms?from=mdr

— **Build crucial partnerships across truck value chain:** Exhibit 3 lays out the cost components of a running truck. By providing load, players only control the revenue. Partnerships across the value chain may help players to enhance the value pool in which they play. These partnerships could also help service providers to resolve existing pain points, e.g., providing fuel cards and a fleet management system by collaborating with regional and national service centres. Scale allows platform players significant purchasing power, thereby ensuring higher margins/price discounts. For instance, platform player 4TiGO has partnered with an oil company to purchase fuel at a discount and a bank to implement a B2B electronic payment platform[23]

Exhibit 3

Truck ownership ecosystem: Players can look at solving customer pain points, creating value and capturing part of the value

Non-financing needs | Financing needs

Purchase	Operations	Re-sale
Buying decision	**Business**	**Budget identification**
Need identification	Finding road marketplace	Annual fitness certificate	Refinance of truck	Market for used truck buyers
Reach out to potential customers for truck purchase	*Platform to find road-market place*	Lend to fund fitness certificate	Help in re-financing of other trucks, borrowing against truck	*Platform for used trucks*
Buying decision				Maintenance of truck
Advisory service on truck purchase				*Tie-up for maintenance Fund maintenance*
Finding a driver				Fitness check of truck
Platform to find drivers				*Conduct (tie-up to conduct and certify fitness)*
Financing operations	**Operational**			**Financials**
Financing for purchase	Salary to driver	Expenses to driver	Fuel costs	Valuation truck
Lend to fund truck purchase	Working capital loan to fund driver Provide pre-paid card	Working capital cards/ pre-paid cards for use	Fuel cards	*Help in arriving at value of used truck*
Financing the body				Financing of truck
Lend to fund body building				Lend to finance purchase of truck
Insurance purchase and registration	Spares and consumables	Maintenance cost	Change of tyres	Insurance of truck
Lend to fund insurance and registration of truck	Tie up with stores to fund Portal for all truck consumables	Tie up with shops to fund maintenance Service shops network	Tie up with shops to lend for tyres	Tie-up with insurance providers Lend to help fund insurance

[23] https://www.dnaindia.com/business/report-nandan-nilekani-supported-logistics-start-up-begins-operations-2218942

2. Transition from service provider to tech enabled supply chain knowledge partner

Customer preferences have been shifting—they have begun to treat supply chain and logistics not only as a cost centre but also as a differentiator. They are more willing to invest in supply chain digitization (GST and e-way bill have made the prospect of digitization more real), optimize the supply chain through network redesign, better forecasting, warehouse consolidation, etc. to improve operational efficiency and productivity, and cut logistics costs.

In this scenario, customers want logistics companies to act as thought partners rather than just service providers, being equally invested (such as through cost and service-level benefits). This is prompting changes in the contracting structure with logistics players—from fixed price for each lane and truck type, warehouse rental and manpower deployed, etc. to variable price linked to per unit quantity sold (e.g., number of tyres sold, volume transported) or cost-saving sharing models. For example, L&T Construction has partnered with TVS Supply Chain Solutions to create a 4PL control tower and manage entire logistics spend[24]; Asian Paints partnered with Mahindra Logistics to strengthen the supply chain in Eastern India[25]; and Maersk and BlackBuck have partnered to provide an online marketplace for containerized trucking in India[26]

2.1 Challenges for logistics players

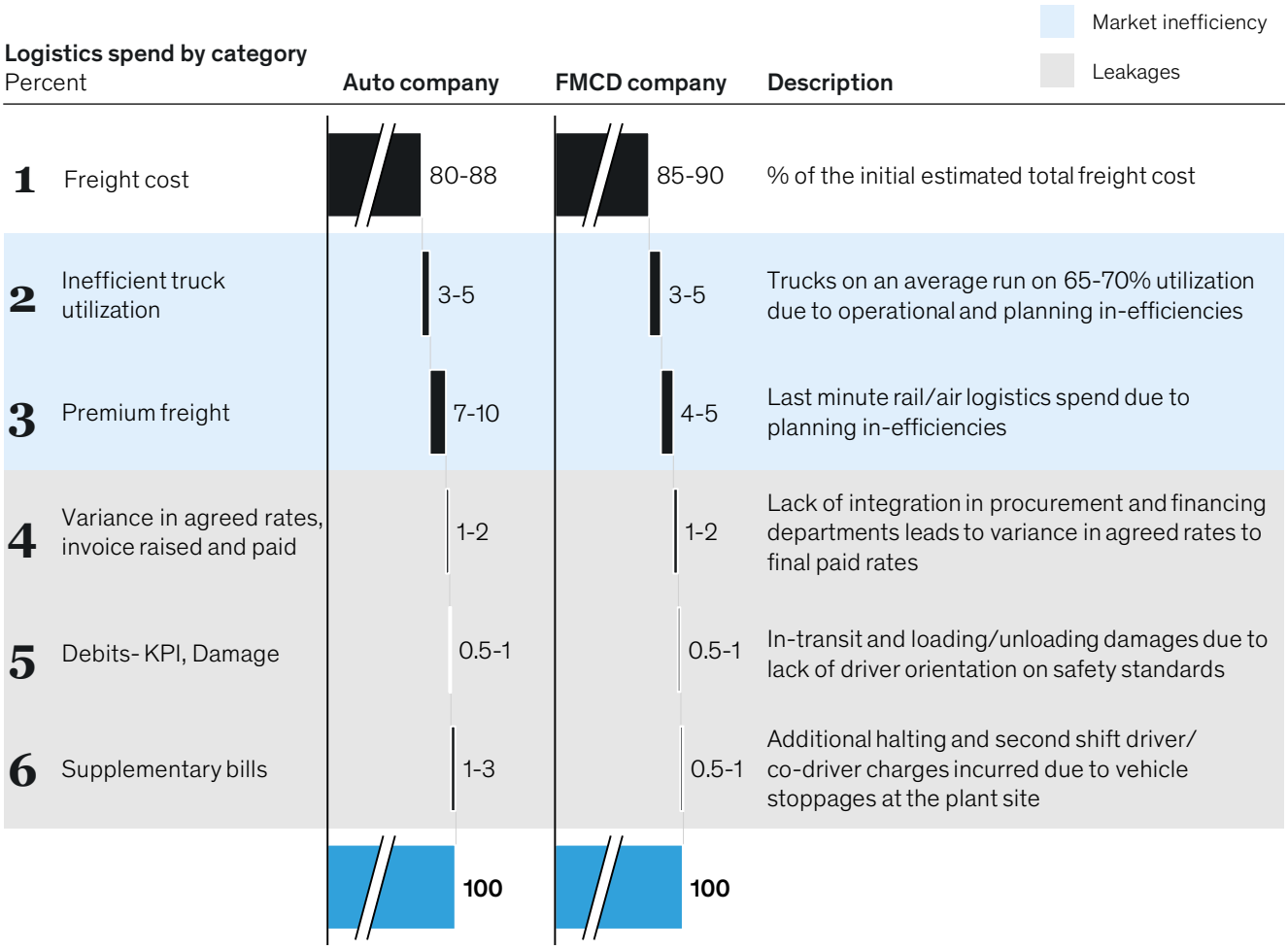
These shifts have led to certain challenges for logistics players. For example, the lack of transaction-level cost data at the customer end obscures clarity on supply chain cost—the existing freight bill has 10 to 20 percent inherent inefficiencies and leakages (Exhibit 4), capability mismatch across sales, solutions, operations management (traditionally more suited towards service provider rather than consultative selling) and risk mitigation among other.

This change in customer and market dynamics has encouraged the emergence of software as a service (SAAS) players who could help companies identify supply chain issues, digitize transactions, manage the performance of existing service providers and reduce cost. These pose a threat to traditional logistics organizations and are already attracting a significant share of PE/VC funding—2018-19 YTD has seen around $ 43 million of funding flow to SAAS players. Some examples include Loginext, LocoNav, Locus, Freight Tiger and Pando, amongst others.[27]

[24] https://www.linkedin.com/posts/bananayak_after-taking-the-1st-step-to-implement-4pl-activity-6552047668259061760-wnzl
[25] https://economictimes.indiatimes.com/industry/cons-products/paints/asian-paints-inks-pact-with-mahindra-logistics/articleshow/71150547.cms
[26] https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/maersk-blackbuck-partner-to-provide-online-marketplace-for-containerised-trucking/articleshow/70750300.cms
[27] Crunchbase, VCCEdge

Exhibit 4

Estimated logistics cost could increase by 10-20% due to various in-efficiencies and leakages



How does SAAS work?

SAAS uses a software platform to capture each transaction (adding a layer over the existing customer ERP). It raises indent requests to tracking and payment reconciliation, all in one place. These include:

– Freight planning and digital contract management

– Reverse bidding and market intelligence

– GST compliance and digital invoices

This enables visibility between consignors, transporters and consignees. It optimizes freight cost through capacity and route optimization as well as load planning and truck-mix optimization. In addition, it makes it possible to measure the performance of all stakeholders using analytics (through real-time dashboards and notifications).

SAAS is a nascent opportunity—providers still need to build strong capabilities to become logistics players. However, they enjoy several advantages that could help position them as cost-competitive E2E logistics providers:

— Saving costs

- Natural access to a large base of vendor networks and brokers enables them to match FTL load across multiple players, guaranteeing backhaul and the ability to optimize for the most suitable truck type.
- E2E visibility helps them identify inefficiencies across the customer's supply chain, e.g. inventory, stock damage, unoptimized load, etc.
- The digitization of several manual operations reduces company overheads.

— Simplifying operations: Digitizing payment, invoice generation, performance reports and indent management could simplify business

— Gaining trust: Entry through SAAS acts as a great customer lock-in due to the linkage with customer ERP. The customer enjoys visibility on real-time performance with SAAS players providing performance reports of all service providers or logistics companies. This helps them fully understand customer needs and pain points

SAAS providers can leverage these advantages and become logistics players by building up some strengths—having the right mix of customization and off-the-shelf products, adding operations management and on ground logistics management capabilities, having a clear strategy/approach to enter managed services (i.e., start as one of the service providers on certain lanes and grow gradually, or acquire/partner with another logistics player) and add contract structuring capability to create a win-win scenario for customers and themselves.

2.2 How logistics players could tap the opportunity in partnership

Existing logistics players could move towards becoming supply chain partners through a focus on three important areas:

— **Strengthen digital and analytics team:** Players need to add strong digital capabilities to their organization, going beyond merely having a control tower. These capabilities could cover network and route optimization, warehouse management systems, telematics solutions, data and predictive analytics, and the digitization of transport transactions, among others.

— **Develop consultative sales and solutioning capability:** Logistics companies could move from transaction selling to consultative selling by adding strong B2B sales and solutioning capabilities (e.g., IT consulting). The team could build up deep supply chain expertise, the ability to do short diagnostics/pilots to assess the potential benefit for customers and strong pricing and negotiation skills. These, along with the right checks and balances, could prevent future risk from a contract going south. There also needs to be a strong process for handover/initial implementation of the project to quickly identify and resolve issues and bottlenecks.

— **Shift mindset of the operations team from a logistics provider to a problem solver:** This could help capture value wherever inefficiency is visible. Companies could develop this through rigor in operational performance and daily work management. The key performance indicators (KPIs) of the operations team could also include metrics around customer satisfaction and not just operational excellence. This will motivate them to take a problem-solving lens for customers rather than purely improving internal efficiencies.

3. Differentiate through venturing beyond road transportation

India has a skewed modal mix which leans heavily on road (60 to 65 percent of transport happens via road compared to 25 to 30 percent in developed countries—prompting higher costs)[28]. Only 6 percent of freight movement happens through domestic waters as compared to the US (12 percent), Germany (11 percent) and Japan (34 percent)[29]. An optimal modal mix that seamlessly integrates with the current supply chain could cut logistics costs by around 1.2 percent of GDP[30]. The use of railways, inland waterways and coastal shipping is quite limited in India (Exhibit 5), and largely used only by the agriculture and coal sectors.

Exhibit 5

Logistics sector split across mode and industry

Indian domestic logistics market revenue
$ billion[1], 2018

	Road[2]	Rail (incl., waterway)	Air & Ocean	Cold storage	Non-cold Wr'hsing	VAS	Total
Agriculture							62-67
Automotive							5-8
FMCG							2.5-5
Pharma							~1.2
E-commerce							2.5-3.7
Cement							5-8
Steel							2.5-3.8
Coal							8.5-11
Chemicals							3.5-6
Retail							5-7
Metals							3-5
Oil & Gas							10-11
Textile							3.5-5
Other sectors[2]							61-85
Total	100-110	35-38	8-10	16-17	21-23	22-24	180-220

1 Average yearly exchange rate for 2017 of 1 EUR = 0.923 USD

2 Splits line-haul across sectors; includes Intra city road transportation for all sectors in "Other Sectors"

Source: Industry reports, Expert interviews

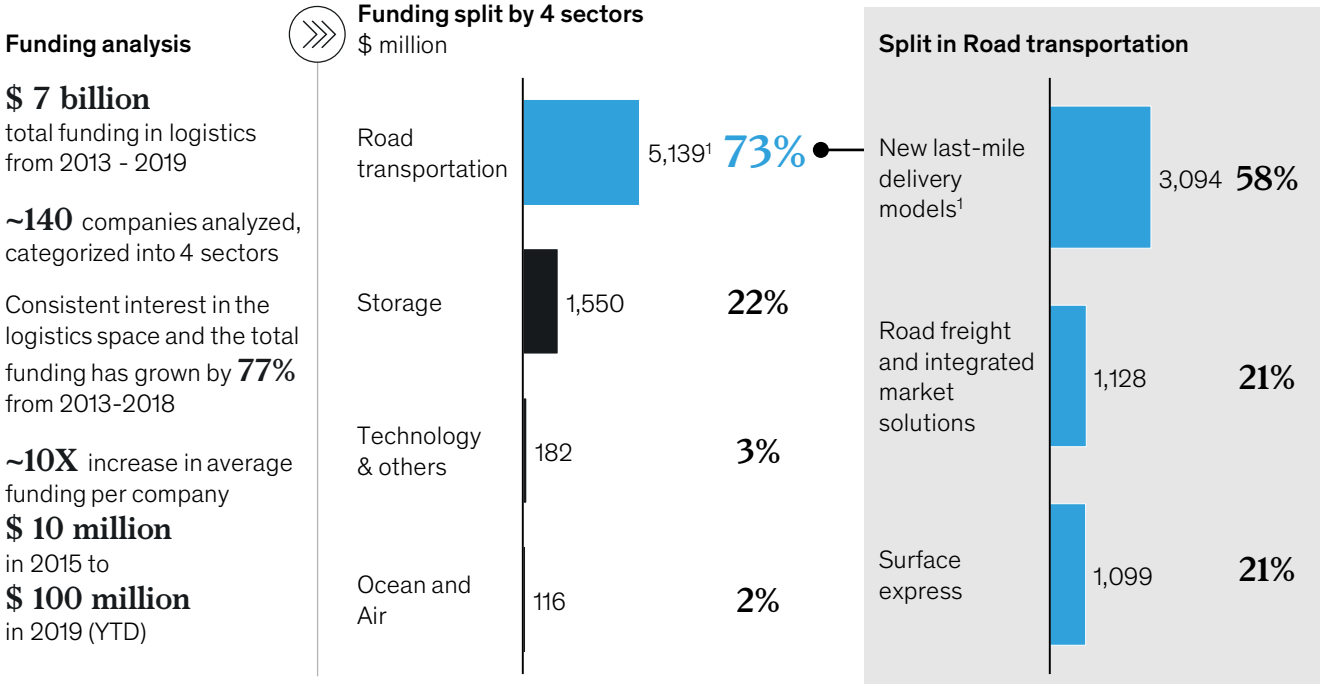
[28] https://commerce.gov.in/writereaddata/uploadedfile/MOC_636850448855371480_Notification-Draft-05022019.pdf
[29] https://www.chennaiport.gov.in/sites/all/themes/nexus/files/pdf/DOWNLOADS/frsa.pdf
[30] India Logistics: Clear Road Ahead, p. 3, Edelweiss, 26 November 2018

Road transportation has also received the maximum share of funding (around 73 percent of the total $ 7 billion funding in the last six years)—primarily on the back of market size and opportunity for consolidation. Funding to other modes is negligible (Exhibit 6).

The Indian government's thrust on multimodal logistics (through major projects in ports, inland waterways and railways as well as roads) could help to modernize and upgrade infrastructure, deploy advanced equipment and technology and also establish new storage and transit facilities, thus attracting investors to an improved freight industry[31].

Exhibit 6

Road transportation has also seen ~73% of the total funding in the logistics sector in last 6 years within which new last mile delivery models have seen ~58% funding



1 Includes Zomato's 2018 & later funding only (~$ 500 Mn)

Source: Crunchbase, VCCEdge

3.1 Why railways and waterways are underutilized

Rail is not the first choice for transporting long-haul cargo/containers primarily because pricing is unfavourable for container transport, there is a lack of reliable scheduling for freight trains and last-mile connectivity is poor. Freight prices are distorted because of high cross-subsidization between freight and passenger trains, resulting in higher than global break-even levels. The rail freight business also depends excessively on coal (it constitutes around 50 percent of the total business)—but the coal market is expected to decline[32].

Similarly, domestic waterways face numerous challenges—higher unit economics due to high first- and last-mile cost, unavailability of return load in most cases, high voyage costs for specialized vessels and high repositioning cost of domestic containers among others. Smaller shipment sizes of individual firms and a lack of agglomeration also creates sub-optimal use of ship capacity.

31 https://www.businesswire.com/news/home/20171205006077/en/India-Freight-Market-Report-2017---Research Bharat Mala, Setu Bharatam, district connectivity, Sagarmala, port-rail connectivity and the development of 106 national waterways are all government-announced major projects to enhance logistics in India

32 Growth (percent) in the production of core infrastructure (April–December Y-O-Y comparison): it was 9.5 percent in 2014–15 and 4.6 percent in 2015–16. National Council of Applied Economic Research, study sponsored by The Railway Board, Ministry of Railways.

How the government could enhance multimodal logistics

The government has launched a few measures to help overcome the issues plaguing rail and domestic waterways. For example, allocating higher funds in the FY20 Railways budget, developing two dedicated freight corridors from Mumbai to Delhi, the Sagarmala Programme, planned development of National Waterway 1, etc[33]. The government could continue this thrust on multimodal logistics in the following ways:

— Reducing the unit cost of economics for containers and ensuring reliability of tariffs. For example, one way could be to double-stack the containers under wire. This would require the Railways to innovate on container size to suit domestic transportation

— Increasing the pace of innovation of special wagons designed for special load/ cargo, just as wagons were specially designed to carry passenger vehicles

— While the dedicated freight corridor will be complete by 2021–22[34], the government needs to simultaneously ensure its full utilization through a comprehensive business building effort, establishing feeder routes, strategically locating multi-logistics parks, etc.

— Instilling the ability for Railways to run time-tabled freight trains—this could enable reliable scheduling and delivery

— Developing rail and road connectivity to coastal berths and inland waterways in conjunction with sea side development

— Setting vessel availability and type standardization norms to prevent mismatch with parcel size

— Prioritizing development of coastal berths from major ports.

3.2 How logistics players could tap the multimodal opportunity

Logistics players could tap the emerging potential in multimodal logistics by differentiating themselves to gain a first-mover advantage. Towards this, they could:

— **Identify supply chains which might be cost effective** using multimodal transportation. For example, it is more cost effective to move steel from a plant in Visakhapatnam to Mumbai or move automobiles from Chennai to Gujarat through coastal waterways. Companies could strike relevant partnerships to develop a suite of offerings, so they need not own all the assets but definitely need an end-to-end offering for seamless movement. For example, Concor plans to launch cross-country refrigerated rail transport as retail modernization grows in India[35]. Logistics players could take a long term view of this multi-modal opportunity and aggressively pitch to companies in the relevant sectors to conduct pilots (currently, industry players are more willing to try out new modes of transport in a bid to reduce overall logistics costs).

— **Become the first mover to acquire strategic land parcels to develop agglomeration centres** (e.g., for cement and steel) or warehouses near the port area to facilitate movement, reduce turnaround times and increase coastal shipping viability. Adani Logistics has, for instance, set up a multimodal logistics park at Kila Raipur in Punjab and Allcargo is developing a multimodal logistics park in Jhajjar[36]. Given the government's significant investment and policy initiatives to boost multimodal logistics, it may be prudent to invest for the long term in building this network with the right strategic assets and partnerships.

Logistics companies need to carefully evaluate these opportunities as they determine their next steps and business strategy. Openness to change could be the key to turning the changing scenario to their advantage and thriving in the constantly evolving logistics sector. This could create a win-win situation for customers and logistics players as well as a world-class logistics industry, prompting growth critical to India's economic progress.

[33] https://www.indiabudget.gov.in/doc/Budget_Speech.pdf
[34] https://www.livemint.com/politics/policy/railways-mulls-privatising-train-services-in-coming-years-1568038588132.html
[35] http://www.fruitnet.com/asiafruit/article/179748/cold-chain-upgrade-in-india
[36] https://www.telegraphindia.com/states/north-east/adani-to-build-logistics-hub-in-assam-says-minister/cid/1670396; https://www.business-standard.com/article/companies/allcargo-plans-to-invest-rs-1-000-crore-in-logistics-park-development-119042000005_1.html


FRAGILE

New trends in the dynamic China logistics market

Logistics at the tipping point in China

China's—and the world's—logistical needs have shifted. Purely cost-oriented warehousing and transportation services have given way to smart supply-chain solutions that can meet evolving omnichannel needs. As online and online-to-offline commerce continues to grow,[1] even rural customers have heightened expectations for fast, high-quality service. And in China's cross-border e-commerce business—which reached nearly 9 trillion renminbi in 2018—there are currently no dominant logistics players, despite booming cross-border trade.

For leaders to emerge and for the industry meet its customers' needs, it will need to employ new technologies, such as advanced analytics and machine learning. Few traditional logistics companies in China, however, have sufficiently invested in analytics capabilities. Even fewer have studied how smart logistics might fit into their strategies. Meanwhile, digital competitors threaten traditional players' business models as growth and competition erode margins.

A select few traditional logistics players have begun transforming their businesses to respond to these drastic changes in China's logistics industry. As they adapt, three trends have developed.

First, in-house logistics business units are transforming from cost centers into end-to-end solution providers with online and offline capabilities—offering their customers more value-added services and enjoying economies of scale. To do so, they are developing omnichannel service capabilities and offering a full range of supply-chain solutions.

Second, some established Chinese logistics companies are going global. China's exports reach customers with high purchasing power in Europe and the United States as well as customers from emerging markets such as Southeast Asia and Brazil. Historically, either European or US importers have managed China's exports. But power is shifting, and more Chinese manufacturers are expanding their own supply chains internationally. Cross-border capabilities confer huge growth potential for logistics companies, some of which are forging partnerships to build their own supply-chain networks around the world.

Third, logistics companies are employing new technologies—including advanced analytics and machine learning—to improve their supply chains by, for example, better managing transportation safety and asset utilization. More logistics companies are also using advanced analytics to offer demand forecasting, inventory management, and supply-chain financing.

These three developments are evidence that China's logistics industry has entered a new era. In this report, we examine these trends and make suggestions for how established logistics companies in China might respond. To survive what lies ahead, industry players must think through the essence of their business, clearly define their own unique value proposition, and embrace innovative technologies and business models.

[1] Online to offline (or offline to online) refers to a two-way purchasing behavior between the online and the physical stores for e-commerce players or e-retailers, which use both online and offline channels as an intensive strategy.

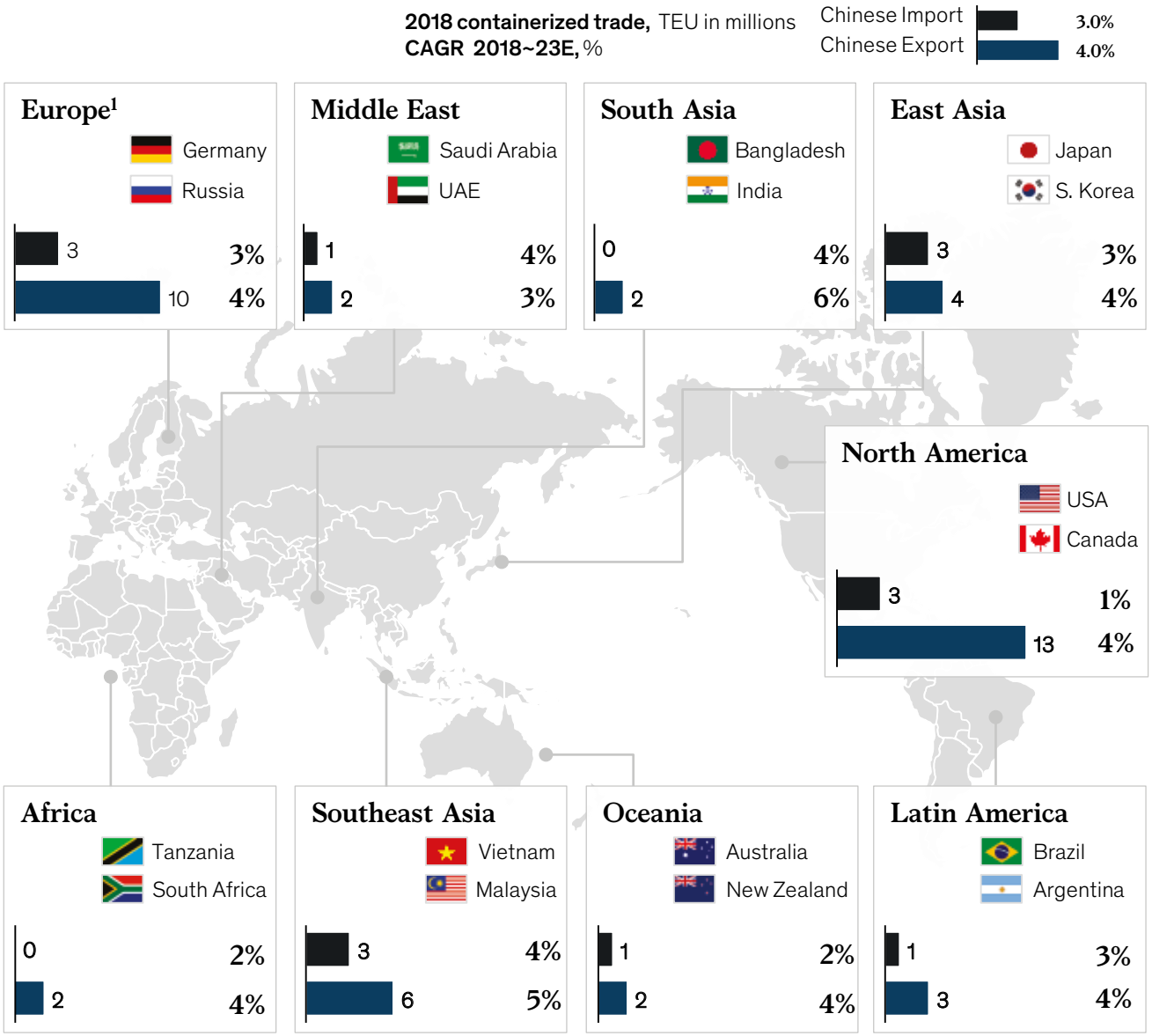
China's logistics promise

China has modernized its transport infrastructure faster than any other nation in history. In a matter of 20 years, the nation virtually went from last place to first—building new superhighways, high-speed trains, and the most modern airports and automated seaports in the world—laying the foundation for China's fast-growing logistics industry.

As China's economy boomed, so did its logistics market. China has become the biggest importer and exporter in the world, and its logistics market is also one of the world's largest (Exhibit 7). Indeed, the total China logistics market has grown from 2 trillion renminbi in 2001 to 13 trillion renminbi in 2018. In the same time period, the logistics cost share of GDP decreased from 19.0 percent to 14.8 percent, showing improved logistics efficiency. When compared with developed economies like the United States, whose logistics cost share per GDP is 8 percent, China has plenty of room to further improve its logistics efficiency. In the future, we expect the Chinese logistics market to grow in both quantity and quality.

Exhibit 7

It is expected that the trading volumes between now and 2023, Chinese exports will maintain about a 4 percent growth rate



1 Including Russia, five Central Asian countries and the South Caucasus

Source: MGI Global Import and Export data base 2018

Among the logistics markets, B2B sectors such as contract logistics, freight forwarding, trucking, shipping, and railway, are growing moderately at between 4 and 9 percent per year. And B2C sectors, driven by strong consumption, are growing robustly—particularly cross-border e-commerce, which has been growing at a swift 30 percent a year over the past five years and is expected to continue apace.

Given the size and growth rates in the logistics sector, a great deal of value is clearly at stake. Significant rewards may await the traditional logistics companies that make adequate investments and adapt to current market trends.

Three trends shaping Chinese logistics

The emergence of new types of logistics players is challenging the business models of traditional logistics companies. Leading logistics players—especially B2C logistics companies such as Cainiao, JD, and SF Express—have already explored smart logistics, while many traditional logistics companies struggle to keep up. For traditional companies to stay relevant to China's logistics future, they will have to pay heed to the following trends, and then change course.

1. Transform to end-to-end solution provider with integrated online and offline capabilities

Traditional B2B industries are embarking on a digital and information revolution that will transform traditional industrial logistics, warehousing supply chains, transportation, and other logistics fields. The logistics operating model is rapidly restructuring to meet the demands of this new age. For most, this has involved acquiring integrated online and offline capabilities that can satisfy, among other demands, an expectation of the near-instant last-mile delivery of retail goods. In 2016, for example, with FreshHema Alibaba introduced a new retail concept that features offline shopping, dining, and online delivery within 30 minutes.

New expectations for delivery speeds

A new retail era is characterized by using big data and digital capabilities to integrate online and offline retail stores, logistics, and deliveries and to more sharply focus on customer experience and satisfaction. With the advent of this new era, Chinese consumers have embraced the omnichannel shopping experience and have gravitated toward online-to-offline (O2O) experiences.

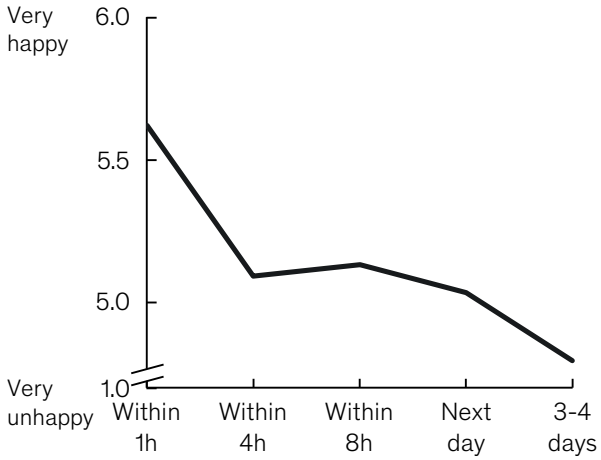
Indeed, buying one's favorite products anytime and anywhere has become a key feature for shoppers. Retailers are attempting to capture every buying impulse before consumers change their minds. Super-fast delivery is a key capability in this regard. Our research shows that fresh food delivery within one hour not only makes more consumers interested in buying, but also significantly raises the satisfaction of those who do. And of the respondents who use O2O food delivery services, 36 percent say they also have strong interest in noncatering instant-delivery services (Exhibit 8). The trend toward near-instant delivery challenges the "next day is fast enough" attitude held by the leaders of most e-commerce platforms. Some major brands are learning from, and even already using, the O2O delivery platforms for half-hour delivery.

Exhibit 8

Consumers are happier and more likely to use services when offered faster delivery times

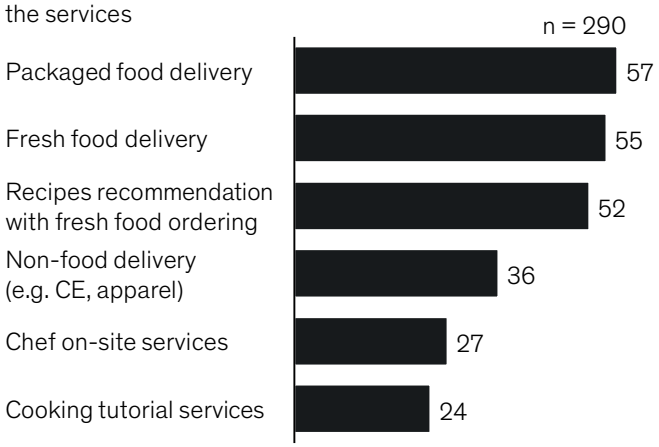
Please rate your satisfaction with the speed of last delivery, fresh food example[1]

Average score, 1=very unhappy, 6=very happy



Please describe the degree of your agreement that you'd like to use the following potential new retailing services offered in O2O food delivery platforms

Percent of O2O food delivery users 'likely' or 'very likely' to use the services



1 Please note Chinese consumers tend to skew towards the positive: as a result 4 and below is considered dissatisfied.

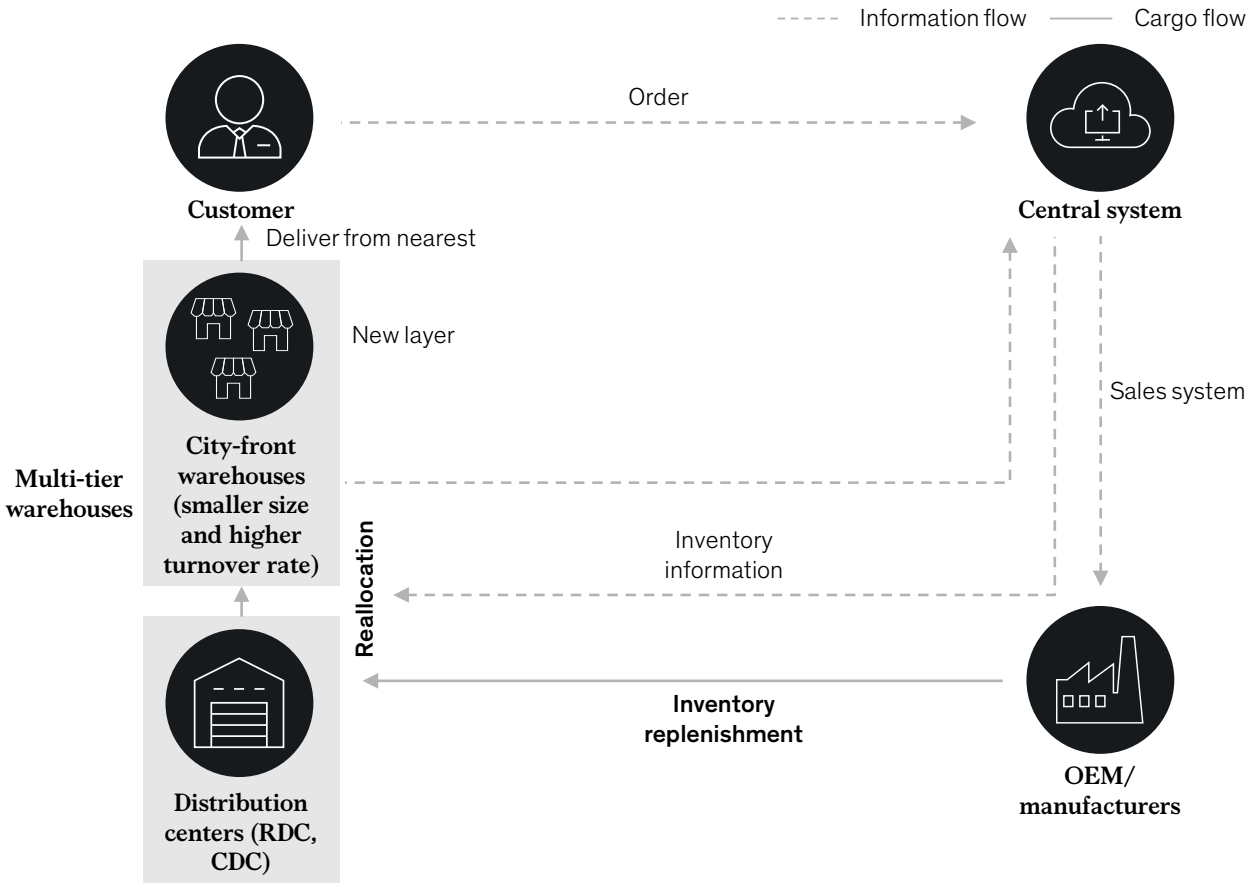
Warehouses are moving closer to customers

Having city-front warehouses—that is, smaller warehouses in downtown areas with high turnover rates—is accelerating the response speed of supply chains in China. To accommodate e-commerce and changing customer expectations, some consumer goods and retail players have re-orchestrated their supply chains to support both online and offline sales and deliveries.

Currently, e-commerce platforms, express players, and third-party warehousing companies are aggressively investing in city-front warehouses to ensure that e-retailer's products are delivered to both B2B and B2C customers with faster delivery time. And as retailers move their warehouses closer to customers, they're also reducing response and delivery time by using advanced analytics to forecast demand in city districts (Exhibit 9).

Exhibit 9

Advanced analytics could help forecast city-front warehouse demand



City-front warehousing and inventory decentralization uses big data analysis, cloud computing, and other technologies to shorten the distance between warehouses and consumers and dispatch orders from the closest warehouse. This improves the overall efficiency of multi–distribution center networks. Advanced analytics and automation technologies also allow city-front warehouses to plan inventory and automatically fill orders, as well as actively distribute omnichannel inventory by signaling replenishment requests.

Leading e-commerce companies—such as JD and Tmall—are developing their own proprietary cloud computing platforms for their city-front warehouse networks[2]. Through distributed, multiregion network planning, these leading players have successfully improved their overall efficiency, improved customer satisfaction, and enhanced their customer retention and loyalty.

[2] "SF, Cainiao and Jingdong, who can win the logistics war?" Tencent, February 26, 2018, news.qq.com.

SF Express, "3T1D,"[3] and other express companies are developing city-front warehousing on top of their well-established offline logistics networks, which efficiently integrates warehousing, line haul, and last-mile delivery. Furthermore, they're generating additional revenue from their resources and efforts by providing integrated supply-chain solutions for e-commerce and manufacturing companies.

Third-party warehousing companies, such as Fineex.com and WWWarehouse[4], are digitizing more of their existing offline storage networks. Their offline operation capabilities are a key part of the value proposition for their real-time warehousing supply-chain solutions.

Vertical logistics platforms capture more value

In-house logistics business units are transforming from cost centers to third-party service providers, allowing them to deliver more value-added services and take advantage of scale.

Manufacturers and wholesalers are building integrated in-house platforms for logistics. While third-party logistics providers continue to specialize and grow, the internal logistics units are moving toward independent profit-generation and away from being cost centers. This transformation will improve utilization of existing assets (such as vehicles and warehouses) and personnel and will create synergies for cost reduction. The logistics units could also expand into other value-added services, including supply-chain finance, upstream procurement, and downstream distribution.

Consider steel logistics. China's steel e-commerce trading platforms account for nearly 30 percent of national bulk e-commerce enterprises[5]. The platforms started in earnest in 2012 and the proportion of trading on steel platforms has already exceeded 10 percent, making steel the fastest growing commodity e-commerce sector in China. Both traditional steel groups and emerging steel e-commerce platforms such as Yungang platform (56steel.com), ZhiYi Da (Zyd1056.com), and Zhaogangwang (pangmao56.com), have launched steel logistics platforms. These platforms enable all logistics parties to share information and connect with each other, with central management of order flows, transportation flows, bill flows, and third-party vehicles.

To win in B2B service, providers of vertical platforms need to clearly define their core competitiveness and differentiate themselves from others. For instance, safety and emergency handling should be positioned as the key capabilities of a chemical logistics platform, while end-to-end visibility and management are essential for a cold chain logistics platform's service offering.

[3] "'Front warehouse' becomes the new favorite? Ali, JD.com and SF each have their own tricks for the 'front warehouse,'" Warehouse in Cloud, June 11, 2018, 50yc.com.

[4] "E-Commerce Back-end Service Provider 'Netcang Technology' Receives Chuangdao Investment," Pencil News, December 5, 2018, pencilnews.com.

[5] "References of the steel network model to the construction of China's logistics information platform," Sohu, November 28, 2017, sohu.com; http://www.sohu.com/a/207243908_747469; https://baike.baidu.com/item/%E6%89%BE%E9%92%A2%E7%BD%91/10844057?fr=aladdin; "About Us," 56Steel, 56steel.com; "River Steel Tangshan Iron and Steel, 'Zhi accessible' platform operators beginning to bear results," HBIS Group Tangsteel Company, tangsteel.com.

Responding to Trend 1

How to start the transformation

Traditional logistics players can transform themselves into end-to-end solution providers with integrated online and offline capabilities. To do so, they must start by developing omnichannel service capabilities, and then elevate their offering to supply-chain management.

Develop omnichannel service capabilities

Omnichannel shopping with online and offline integration has become the new norm, and consumers will continue to demand omnichannel logistics as well, where they can make an online purchase and pick up their orders offline, or arrange for delivery from the nearest city-front warehouse. Logistics players should take the following steps:

— Systematically set up a nationwide, multilayer warehouse network to cover smaller cities and support an increased delivery speed

— Build a centralized system to connect the information flow of each logistics process along the goods' life cycle from manufacture to end user

— Improve the use of logistics assets by sharing the warehouse management service and delivery service among multiple clients

— Establish a strong last-mile delivery capability for high-quality deliveries with options of 30 minutes, one hour, same day, or next day

Elevate current offering to supply-chain management

With lean supply-chain management, one of the leading electronic manufacturers in China cooperates with upstream and downstream partners. It acquires data which it analyses to forecast demand with the help of the digitization in traditional B2B industry. This improves raw material procurement, manufacturing, distribution, and end-user product availability.

2. Design a step-by-step globalization plan rigorously

China has become the biggest importer and exporter in the world and also boasts one of the largest logistics markets. Despite that cross-border e-commerce has grown at a robust 30 percent per year for the past five years, no single logistics player dominates cross-border e-commerce. While the inbound and outbound logistics markets are essentially up for grabs, some Chinese logistics players are proactively investing internationally and building 'international domestic' networks.

Making international investments and collaborating with global players

At the end of 2017, SF Express formed a joint venture with UPS to launch an international economy express delivery service: Sino-America Direct Freight+. The main value proposition of the service is cost effectiveness, attention to cargo safety, stable service quality, and convenient customs clearance. As the pilot service offering, the Sino-American product offers doorstep pickup by SF Express in China, and fast customs clearance and last-mile delivery in the US by UPS, which guarantees delivery within seven business days. According to the data disclosed, the products developed by the joint venture have achieved good results. The timeline has improved by two days since the launch, and the revenue has increased.

For cross-border imports, Cainiao (the logistics subsidiary of Alibaba) is the key pioneer[6]. Cainiao is promoting a smart logistics network with global delivery within 72 hours. In the entire Tmall International cross-border e-commerce business, about 90 percent of orders are fulfilled by Cainiao. At the end of 2016, Cainiao launched global fulfillment centers (GFCs) to help overseas merchants sell their goods to mainland China, Hong Kong, and Taiwan. Orders from Chinese consumers are sent directly to GFC warehouses, and GFC provides the merchants with stocking, picking, dispatching, inventory management, and other value-added services. Therefore, the merchant is only required to send goods to the nearest GFC warehouse, and the rest is fulfilled by Cainiao. This operation model has reshaped e-commerce imports by shortening the timeline for overseas delivery from two weeks to five days. By the end of 2018, Cainiao had deployed ten GFCs in cities such as Frankfurt, Los Angeles, Madrid, Osaka, Seoul, and Sydney. In the next two to three years, Cainiao plans to double its current total overseas warehouse space to one million square meters.

Building an international-domestic organization

With e-commerce players and retailers expanding into Southeast Asia and other developing markets, Chinese logistics players are proactively investing internationally and building international–domestic networks.

Logistics companies typically start with traditional operating models which consist of overseas warehousing and partnerships with local logistics providers. They are now beginning to move further toward a localized operation mode, including establishing a self-owned local logistics network with integrated operation standards and IT systems.

In September 2018, JD launched its most advanced intelligent warehousing and logistics center in Thailand[7]. To cover the entire country, JD built three networks for specific products, which are the networks for large parcels, medium to small parcels, and cross-border parcels. In Bangkok specifically, JD offers a "211" time-definite service (same-day delivery for pickups before 11 a.m.; next-day delivery by 2 p.m. for pickups after 11 a.m.), so that local consumers can enjoy the accelerated service that consumers in China are used to. In the future, JD Logistics plans to build the world's most efficient "forty-eight, either way" network (48 hours from China to the world, 48 hours local delivery within the same country), by applying the Chinese Express Standards and end-to-end capabilities to all international-domestic markets.

6 "Cainiao International Guan Xiaodong: Construction of a new global logistics system will reach 72 hours," DoNews, April 25, 2018, baijiahao.baidu.com.

7 http://m.ebrun.com/306859.html; https://tech.qq.com/a/20180910/093498.htm.

Responding to Trend 2

Design a step-by-step globalization plan

To globalize, China's logistics leaders first need to address common challenges. Many have little understanding of local market regulation and customs. Furthermore in local markets it is relatively easy for competitors to replicate what the logistics leaders do, and it can be difficult for incumbent players to determine when they should build a capability themselves and when it would be best to find a partner that can provide such a capability. To meet these challenges, providers must take the following steps:

Assess the infrastructure and regulations in different countries

Logistics companies in China must rigorously assess the infrastructures and regulations in different regions across South and Southeast Asia. Customs regulations vary by market, which affect the delivery time of cross-border shipments. This should also be a key consideration factor when designing the cross-border products and routes. Players must guarantee the time or speed to consumers by complete assessment of local conditions and offering enough flexibility in the back-end operation, including different transport modes and customs clearance methods.

Develop tailored solutions for e-commerce platforms and brands

A robust strategy must include partnerships with cross-border e-commerce platforms or leading brand manufacturers. At the same time, players must create their tailored solutions, including finding local logistics partners, customs clearance. Considering the fast-growing market, cross-border logistics companies may need to redefine product and service delivery commitments to win.

Build self-owned cross-border operation capability

When the cross-border business has reached a significant size, logistics companies could begin to localize operations and build a self-owned 'international domestic' network, where the logistics company itself controls the assets and the supply chain rather than relying on partners Despite the risks of making huge investments in warehouses, trucking, and last mile delivery, among other things, consistent delivery quality is key to acquiring and maintaining customers.

3. Accelerate digitalization and smart logistics innovation

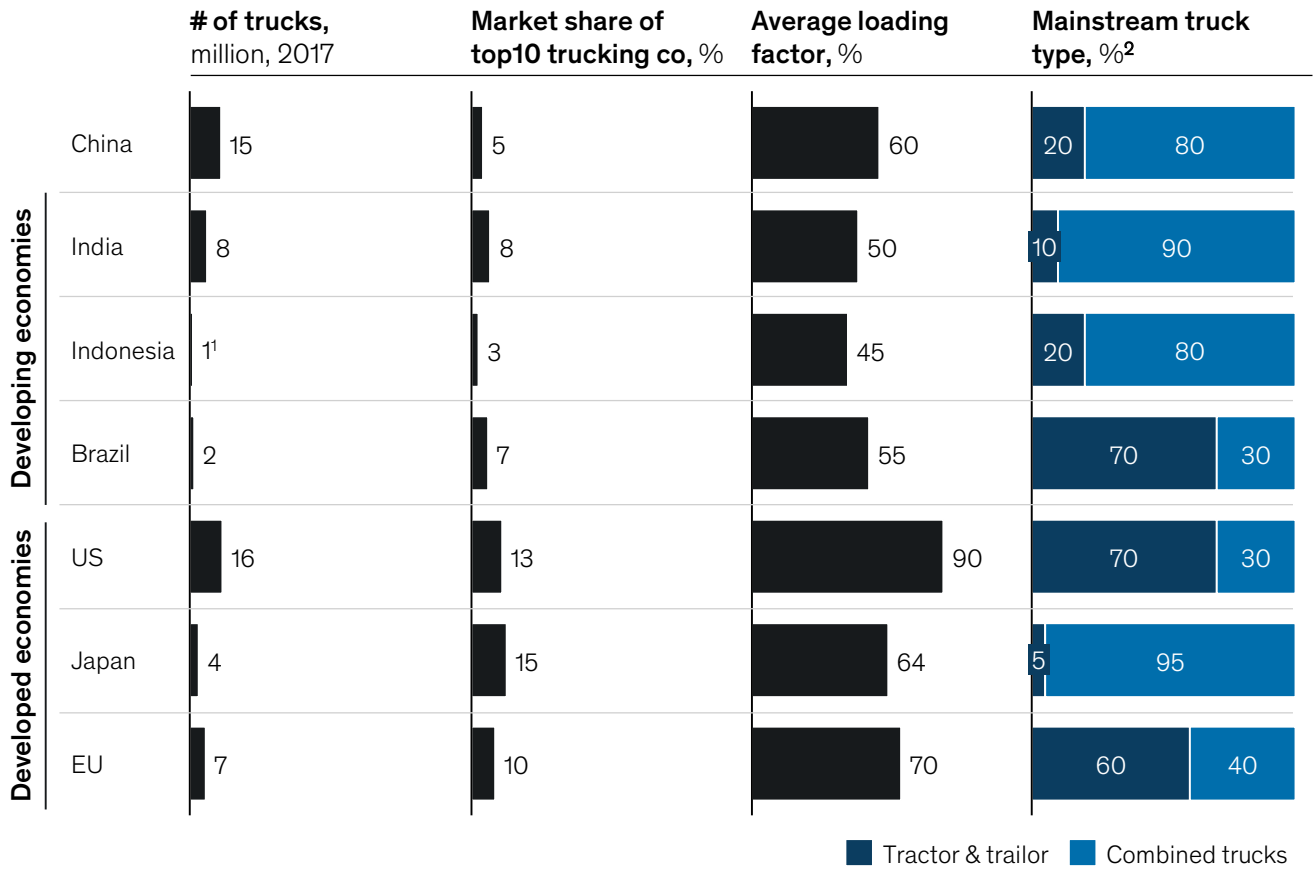
Cutting-edge digital technologies are reshaping logistics and boosting supply-chain productivity. In the past five to ten years, leading logistics companies, platforms, and cargo owners have accumulated high-quality data and enhanced their IT capabilities. The next wave of digitization will include big-data analysis for fleet and supply-chain management as well as improved operational efficiency through automated, unmanned facilities and equipment.

Big-data analysis in fleet management

Transportation is a key area to pilot smart logistics in China. While China's truck fleet is one of the largest in the world, the country's utilization is still behind the European Union, Japan, and the United States (Exhibit 10). The fragmented full-truckload market makes up about 75 percent of the trucking industry while the less-than-truckload market is more consolidated, with top players capturing 10 percent of market share. The increasing cost of labor means that fleet efficiency improvements are critical for Chinese transportation companies (Exhibit 11).

Exhibit 10

Truck utilization in China lags behind that of developed economies.



1 Assume freight heavy trucks account for 80 percent of total freight vehicles

2 Determining factors for truck type mix include the comprehensiveness of the local trucking regulations and readiness of the transport facilities, as well as the fitness of the local transportation infrastructure for tractor-trailers, in countries like Japan, Indonesia, India, many small, narrow roads are not suitable for tractor-sized large trucks

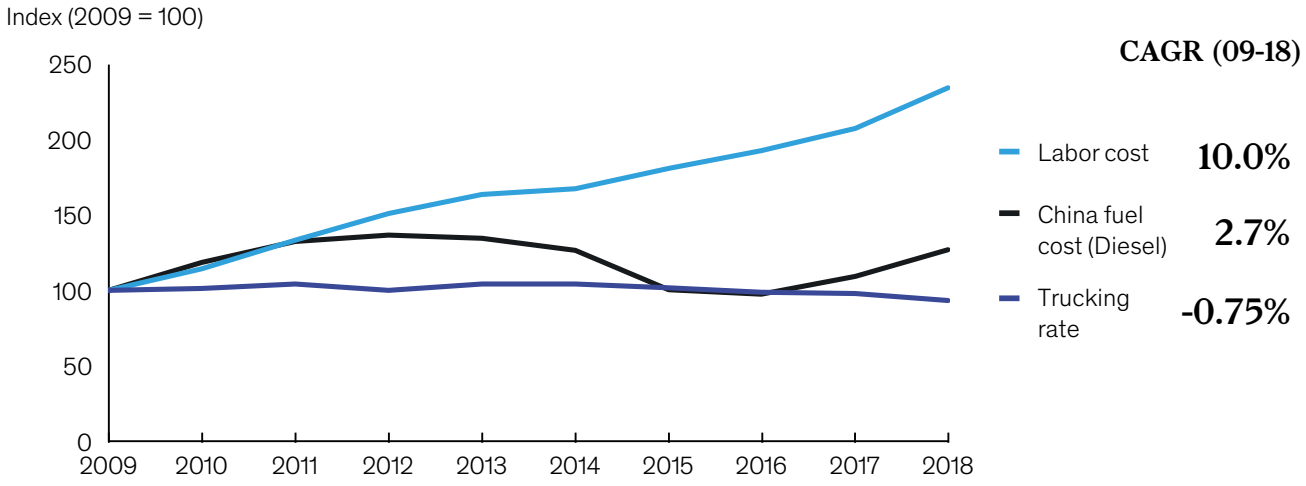
Source: Local Government database, expert interviews

One emerging smart-transportation-solution company provides digital solutions for line-haul transportation in multiple industries (Exhibit 12). One such industry, chemicals, has always struggled with transportation safety management. Big data analysis can help. By installing hundreds of sensors on a truck, for example, analysts in a central control tower can monitor, track, and analyze drivers' behavior in real-time. The analysts can deduce whether a driver is tired, driving too fast, or exhibiting other inappropriate behavior and then alert the driver. In addition, the sensors relay mechanical information about a truck's systems, so when there's a potential or actual breakdown, the software will send out maintenance instructions and provide 24/7 support.

This solution helped one leading domestic petrochemical company reduce its daily average high-risk transportation incident rate to below 50 percent of the industry average. The solution also helped the company increase its six-month safety index by 20 percent and shift its incident management from being purely reactive to proactive.

Exhibit 11

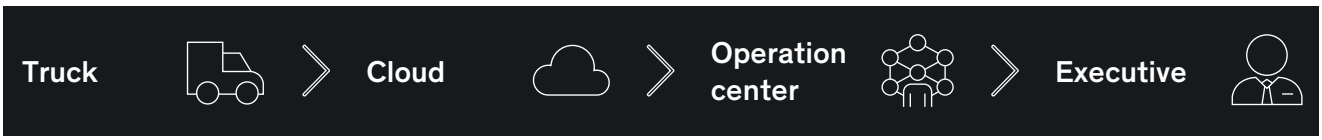
From 2009 to 2018, transportation labor costs have significantly increased, fuel costs have steadily increased, and freight rates have been stagnant



Source: China statistics yearbook; 12th five year plan on transportation; china federation of purchasing and logistics; road transportation association; CEIC; expert interview; company press

Exhibit 12

Case example: A smart solution for linehaul transportation serves several industries



Smart hardware for real time monitoring

Truck performance: engine, fuel, etc.

Driver performance: image, sound, etc

Location, timing, motion, cold chain condition, etc.

Cloud based advanced analytics

Drivers' **efficiency and physical conditions**

Truck's conditions

Potential **accident factors**

Route optimization

Data and analytics driven management

Real time and **comprehensive data** to understand whole network status

Advanced analytics based suggestions to optimize system performance

Online and mobile management interface

Aggregated and holistic view

Emergency and urgent intervene

Advanced analytics in supply-chain management

Beyond traditional transportation and storage, advanced analytics is allowing logistics companies to better forecast demand, reduce inventory, and enter supply-chain financing.

For example, Best Inc., a logistics solutions provider focused on the consumer-goods industry, now also offers omnichannel integrated supply-chain management services to its clients, which include Li Ning[8]. Best Inc.'s system offers customers online ordering, offline stores, offline warehouses, store-inventory management, and product delivery. Beyond its standard offering, Best Inc. forecasts the demand of many segments of Li Ning's operations. This guides Li Ning on raw-material procurement and marketing strategies. Best Inc. also provides supply-chain financing services to Li Ning's suppliers and distributors and controls the risk by using information from the supply chain.

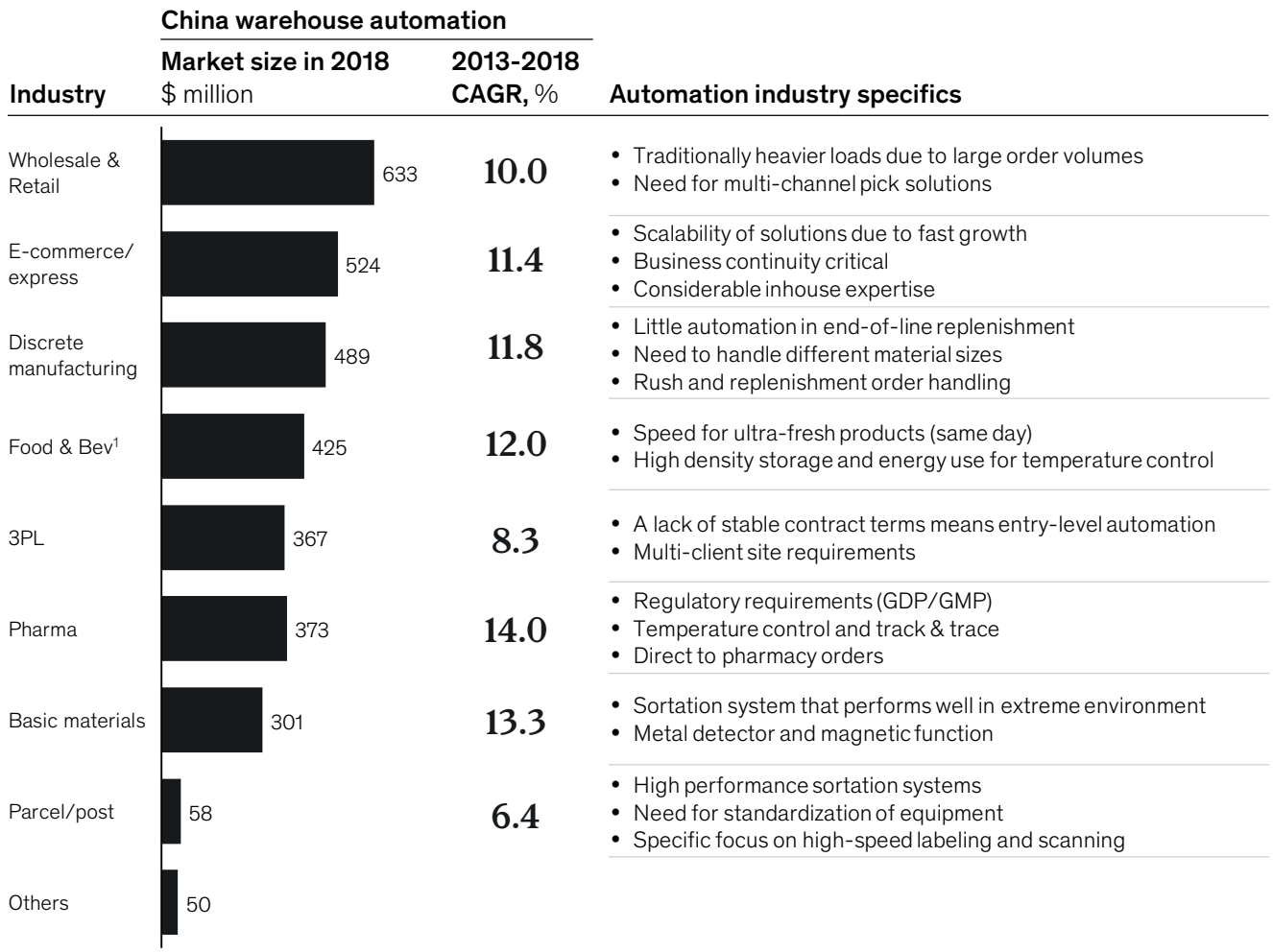
Automated and unmanned facilities and equipment

Logistics companies, driven by rising labor costs in China, are actively exploring smart logistics equipment to improve operational efficiency and better handle increasingly complex customer demands.

Due to the varying categories of SKUs, massive order volumes, and fluctuations of order quantity in the new retail era, traditional warehouse operations that rely on manual work are difficult to sustain. Thus, the emerging need for warehouse automation in China spans across industries (Exhibit 13).

Exhibit 13

Several industries in China require warehouse automation



1 As of manufacturer

[8] "How Best supply chain can help the new economy," First Financial, August 13, 2018, baijiahao.baidu.com.

One leading smart warehouse company's network covers more than 300 cities across China. It has established operation centers in more than 15 locations around the world and more than 300 global supply-chain sites. The daily maximum order processing capacity is more than one million pieces, versus fewer than 100 thousand pieces in similarly sized traditional warehouses. In its smart 3-D warehouse, cargo movement is automated by palletized conveying lines and stackers, which shrink and improve the usage of the storage area. The 3-D warehouse adopts a fully automated operating model, requiring no manual work. The automatic stacker and conveyor belt pull the items into the warehouse and the robot automatically stores the items on the shelf. Forklift automated guided vehicles (AGVs) and sorting AGVs match the right products to the right orders to the right people. Laser positioning and scheduling algorithms ensure stable AGV performance and accurate navigation. The action path can be adjusted at any time to adapt to production scenario changes.

Unmanned transportation—including drones and driverless vehicles—is another emerging area that logistics companies are exploring to widen their reach while reducing costs. Consider one of the leading express players. To overcome challenges posed by the relatively poor infrastructure in lower-tier cities and rural areas in central and western China, the company proposed using unmanned aerial vehicle (UAV) logistics. In 2015, it acquired a UAV company; by the end of 2019 it had launched its first innovative UAV with more than 100 related patents and built a UAV R&D system. It has also obtained airspace approval from the government.

In the future, the company will continue to promote its UAV strategy by establishing a large logistics UAV headquarters. It plans to connect the UAV feeder network with its national aviation network in 2020 to achieve the complete coverage of a regional cargo aviation network and realize next-day delivery for goods within the region. However, it will be a long time before drone-to-customer deliveries become commonplace in China due to a remarkably dense urban environment and tight control of air space.

Responding to Trend 3

Enhance data analytics capabilities

Traditional logistics players could start by deciding whether they should adopt analytics by either harnessing out-of-the-box tools or tailoring in-house solutions. If they decide to go the partner route, they could forge relationships with start-ups that focus on bringing analytics and digital solutions to business operations. Doing so successfully usually requires that partners have a deep understanding of the underlying logic of a business operation, and tailor their tools specifically to that the business. If a traditional logistics player decides to design its own solution, it should consider developing and implementing core solutions, such as network optimization for logistics, automation for warehousing players, automatic identification systems for shipping, and fleet telematics for trucking companies. If successful, they can subsequently attempt to develop in-house noncore solutions for supporting systems, such as for the HR and finance functions.

Actively identify and explore innovation opportunities from business scenarios

While it may seem obvious, more logistics companies must actively observe the changing business environment and identify potential opportunities to innovate. Before implementation, these opportunities must be proven to have a real impact on business, either by saving costs or increasing revenues. For example, a logistics company that has limited additional resources could apply dynamic pricing to maximize utilization and increase revenue. Given a scenario where a greater investment level is possible, they could implement automation to reduce warehousing labor costs. On the customer side, companies could analyze customer behavior data to better understand their preferences and habits and automatically recommend solutions—before customers even place an order. More customized solutions can lead to better customer satisfaction and more revenue.

Cultivate and invest in smart logistics innovation

Chinese logistics companies could invest in smart logistics innovations based on business needs. Cultivating innovation within a company requires not only providing financial and resource support but also creating a start-up mechanism or incubator, including an organization, a governance model, and key performance indicators. For example, a traditional player looking for long term returns could make equity investments in smart logistics startups, using a defined set of KPIs for investment. They also might consider setting up an internal fund that would essentially act as an internal incubator for new business ideas. They might also work more closely with certain vendors that can share valuable knowledge to bring industry best practices into their own business. Leading logistics companies should also try to work with government leaders to keep up with new regulations in areas such as drone delivery.

Conclusion

China's logistics industry is at a tipping point. As traditional models are phased out, forward-looking companies have an opportunity to increase their market share in what has been a highly diffuse industry. But to do so, companies must act now, starting with taking a hard look at their unique value proposition. They can then consider how they might benefit from embracing current trends—such as becoming an end-to-end solutions provider, expanding globally, and harnessing new technologies—and succeed in meeting evolving omnichannel needs and reaching previously unreachable customers at previously unimaginable speeds.

As noted in the first half of our report, logistics providers in India are also attempting to stave off competitive threats, become service providers to tech-savvy supply-chain partners within the industry, and embrace new technologies. As leading Indian logistics companies attempt to create web portals that provide every service a trucking company might need—from sourcing work, to scheduling maintenance, to making an appointment with a banker that can provide capital—they will need to achieve scale, become good supply-chain partners, and differentiate beyond road transportation.

As is true for their counterparts in China, logistics providers in India have no time to lose. Mainly because changing customer needs have brought new, technologically savvy competitors into the fold, including software-as-a-service players who can help customers identify supply-chain issues, digitize transactions, manage the performance of existing service providers, and reduce cost. These new entrants pose a threat to traditional logistics organizations and are already attracting a significant share of private-equity and venture-capital funding.

In both India and China, those logistics companies that wait to act risk being overtaken by nimble new competitors. They need to carefully evaluate the abundant available opportunities as they determine their next steps and business strategy. Openness to change—especially to digitization—could be the key to gaining an advantage and thriving in the constantly evolving logistics sector. This could create a win–win situation for customers, logistics players, and world-class logistics industries, prompting growth critical to their nations' economic progress.

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