Cognizant®

The Future of Transportation & Logistics

The future of transportation & logistics will offer a world of opportunities, but the transformation will require substantial steps and boldness. The industry needs to be open to new insights instead of being mentally closed by existing ones.

Each industry has its owns challenges, and digital disruption is everywhere. Organizations must be agile and build new momentum that respects the new reality of their industry. As organizations strive to remain relevant, they'll need to adapt to changes not only today, but also tomorrow. Change is the only constant. Constant change requires scenario-based thinking, exploring several paths and crafting a digital strategy based on preparing for the future. For businesses to stay relevant, they need to explore the future and look at next generations.

No one can predict the future; organizations must actively explore various possible futures to anticipate what disruptions are coming. We believe that future winners in the digital economy will be those that can deliver on one key insight: put technology in the background, and focus on people first. Putting customers first does not diminish technology's importance; rather, a deep customer understanding should help guide the choice of which technologies to incorporate in your business.

Cognizant can bring together digital strategy, deep industry knowledge, human sciences, experience design and technology expertise to help companies design, build and scale digital business solutions. Cognizant has both the expertise and experience with digital transformation. Together with clients we can explore tomorrow's opportunities.

A view by Cognizant's Center for the Future of Work

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The world of intelligent logistics

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Euan Davis leads Cognizant's Center for the Future of Work in EMEA. A respected speaker and thinker, Euan has guided many Fortune 500 companies into the future of work with his thought provoking research and advisory skills.

Within Cognizant's Center for the Future of Work, he helps ensure that the unit's original research and analysis jibes with emerging business-technology trends and dynamics in Europe, and collaborates with a wide range of leading thinkers to understand how the future of work will look. Previously, Euan held senior analyst, advisory and leadership positions at Forrester Research, IDC and CEB. Euan can be reached at: Euan.Davis@cognizant.com

FoW | Center for The Future of Work

A view by Cognizant's Center for the Future of Work

Meet the customer of the future

Chris fills his online shopping cart and clicks "order". He selects the option for "trunk delivery" and enters the code for the autonomous car outside his door. As he leaves his house, he sees the delivery drone fly away and uses his smart watch to open the trunk. His entire order is there. The car drives him to the nearest Hyperloop station. He'll be across town and in his office in 10 minutes.

At the end of the day, Chris activates the facial recognition scanner on an electric scooter outside his office. He's meeting his wife downtown for a bite to eat. Since it's such a clear, quiet night, they decide to order a flying taxi for the ride home. The overhead view of the city at night is just so breathtaking. Arriving home, they use their voice-recognition code to open the lockbox outside the door. Their automatic grocery order has arrived. Nice. Chris didn't even know he was out of razors, but there they are in the box.

Quick take
Post COVID-19 impact

The COVID-19 crisis has shown how delicate the supply chain has become. The heightened safety precautions have required the transportation and logistics industry to contribute to emergency services, as governments and logistics associations work hard to keep the essential supplies flowing. The current need for logistics companies to enable end-to-end visibility, agility, process flexibility and collaboration to support their customers should benefit these organizations post-COVID. The transportation and logistics customer of 2025 will require an ever greater degree of flexibility and visibility, and the lessons learned from this crisis should provide a launchpad for these organizations to provide just that.

A futuristic fantasy world that's centuries away? Not at all. In fact, this could be the reality of transportation and logistics within the next 10 years. And companies that move people and products will need to embrace the technology that will keep them relevant.

The race against time

Transportation and logistics today are all about time, accuracy and transparency. Consumers want clear insight into where their goods are, and when they'll be delivered.

Apps and emails attempt to keep them informed, with varying levels of success. And the roads in urban areas are getting ever more crowded as logistics companies struggle to live up to their service level agreements and deliver at the speed customers demand. Availability, affordability and efficiency are the name of the game.

In the midst of all that online shopping, customers aim for more, better and cleaner mobility. Alternatives to personally owned vehicles are infiltrating major cities around the world. And while today's passengers need to be satisfied with disconnected services and managing multiple mobility options on their own, passengers of tomorrow will require nothing less than total integration.

Embracing the possibilities

With each technological advancement and new development, consumers expect more. And as competition grows, logistics and transport companies are exploring ways to meet these demands and distinguish themselves from the competition. At the same time, ownership is becoming a thing of the past.

The sharing economy is making it more desirable and economical to own as little as possible. Pay-per-use services like Uber and Airbnb show that customers are more than happy to share, as long as their experience is seamless, safe, cost-effective and smart.

Connecting the components

Tomorrow's customers won't be satisfied with a vague email about the location and expected delivery time of their packages. They'll grow tired of needing multiple apps to determine the best route and mode of transport to work. Over the next decade, customers will demand nearly instant delivery of goods and services, and a single, integrated mobility platform that combines their need for speed and convenience with their desire for sustainable travel options. And of course, the entire process will have to operate from a single app on their mobile phone or smart watch.

For logistics companies, this means embracing technology. The outerweb, AI, the Internet of Things (IoT) and 5G wireless technology will not only boost capacity and mitigate risk, but will also improve the customer experience. From predictive route optimization to demand forecasting to anticipatory shipping, logistics companies should aim for connected, empowered visibility and efficiency.

Drones and droids will increase delivery and reduce road congestion.

Advanced technologies also promise to resolve the long-standing "last-mile" challenge of delivery. With the rise of "V2X" solutions, vehicles will soon be able to communicate with other vehicles (V2V), with pedestrians (V2P) and with the transportation infrastructure (V2I) to create spatial awareness and monitoring that will allow safe autonomous vehicles to proliferate. Drones and droids will increase delivery and reduce road congestion. With intelligent systems, logistics companies will also be empowered to share transport lines to increase efficiency and speed.

Travel and transport will benefit from smart city developments that offer a variety of clean, convenient, safe transportation options that customize the best routes for each individual. AI technologies will bring together personal and mass transit options, sharing and mobility as a service (MaaS) solutions into a hyper-personalized, seamless approach to door-to-door travel, operable from a single, integrated and smart app.

The future of transportation and logistics is human

For the transportation and logistics industry, connectivity is key. Collaborative robots, drones, and advanced sorting and tube systems will respond directly to the needs of consumers. 3D printing will reduce long-haul distribution. Data will make returns management, warehouse logistics and distribution smarter, faster and more efficient. Robots will be ready to deliver on demand. Biometric identification will make deliveries nearly fail-proof. And apps will deliver real-time information to customer that is highly accurate and convenient.

Connectivity will extend throughout the transportation ecosystem. Smart cities will work with auto manufacturers, energy and utility companies, finance and telecommunications businesses to offer seamless, ultra-personal transportation solutions. Digital signboards and navigation systems will be continuously updated to create the smoothest routes and safest options. From fully autonomous cars to a high-speed Hyperloop, from shared scooters to flying taxis, consumers won't just want available solutions to be efficient and affordable but also convenient, sustainable, safe and multi-modal.

" the **future** of **logistics** is human "

Throughout Chris's day, he used a variety of ordering and shipping options, multiple forms of transport, and many secure forms of identification. But all of his activities will be linked together in a single app that transparently reports his usage, costs and energy usage. Because in 2025, connectivity and convenience will rule.

The result? Transport and logistics companies will be fully focused on anticipating consumer needs and exceeding customer expectations. Data will be king, and customers will hold the power in the palms of their hands.

An external perspective by futurist & trendwatcher Tony Bosma

Transportation & Logistics **reinvented**

Tony Bosma (1973) is a futurist and trendwatcher. He is the founder of futuring and consultancy organization Extend Limits (www.extendlimits.nl). Extend Limits does not predict the future but helps organizations anticipate it. Do not ask yourself why things are happening. Ask yourself why hasn't it happened yet? This is the mindset companies need to adopt in this era of change.

Tony Bosma is an authority in future thinking and trendwatching and was nominated in The Netherlands several times for trendwatcher of the year. He is an internationally renowned keynote speaker. He is known for his confronting, inspiring, visually attractive and surprising sessions about a wide variety of topics. He also works for a variety of companies and governments, helping them anticipate the future and, more important, challenge and question today's world and mindset.

In collaboration with Cognizant, Tony Bosma did extensive research into near future trends across industries. Together with Cognizant, he made abstracts of the most dominant developments – not far fetched futuristic worldviews - but realistic developments which are seen right now. These are not only plausible future developments but also the challenges of technological developments.

Transportation and logistics is one of the most dynamic of all industries. Futuristic ideas and concepts range from Hyperloop systems and space elevators, to underground tubes, teleportation and drone swarms. Meanwhile, our growing cities face enormous challenges, many of which are mobility- and transportation-related: congestion, air quality, ambient noise and carbon emissions, to name a few.

When we envision future cities and new mobility systems, imagining self-driving trucks, autonomous robots and flying drones is the easy part. What will be more difficult is accommodating product delivery and human needs, particularly when it comes to last-mile delivery and the need for adaptive and flexible logistical systems.

Whether we see autonomous e-cars, electric planes, ghost ships, 3D print hubs, advanced manufacturing or smart transportation hubs emerge, what's certain is that the future of logistics will introduce a world of opportunity. The biggest progress will be made by focusing not on making logistics more efficient but by incorporating new technologies into the existing infrastructure to redefine transport and logistics.

To do this successfully, the industry has to be open to new insights instead of being closed by existing ones. It needs to shift from a siloed world of reactive operations toward adaptive and smart predictive networks of supply chain operations. And it needs to reset its focus from "cheaper, faster and more efficient" to "smarter, disruptive and different." This will take a renewed effort to work together across the ecosystem. To meet the growing demand of delivering goods in an innovative, personalized and meaningful way, cross-border collaboration will become a necessity.

Logistics takes place in a fast-changing and fragile business environment. Globally, logistics has become more complex and costly as political tensions rise and protectionism increases. The need for sustainable logistics will grow day by day. Uncertainty is the new certainty, and anticipatory thinking and acting is the new normal.

" Digitalization threatens to fundamentally disrupt logistics but could also unlock $4 trillion of value for the industry and wider society. "

World Economic Forum

The world of intelligent logistics

Meanwhile, demand is growing for transparency and flexibility. Digital brokerage platforms connect demand and supply with a variety of providers. Services are becoming digitally tailored to customer needs. Information, rates, tracking and tracing all need to be transparent. The growth of online shopping is creating new demands for fulfillment and delivery. High-tech end-to-end fresh chains are making it possible to deliver sensitive goods bought online. Logistics organizations will need to integrate the ever-growing number of retail channels into their logistics networks. The industry needs to extend beyond the traditional services it delivers to meet the demands for ease of use and availability to end consumers. The ability to deliver anything, anytime, anyplace is the new mandate in the near future. Facilitating easy returns and making deliveries on the spot – to a closet or car trunk – or try-and-buy deliveries are just the beginning. As customer demands and expectations rise, the need to be flexible and innovative also increases. Technology will help meet these needs, as well as introduce many opportunities.

The world of intelligent logistics

The future of logistics will be defined by data, analyzed by artificial intelligence and driven by machines. Gartner has predicted that by 2023, AI techniques will be embedded across 50% of supply chain technology solutions. McKinsey has said machine learning will provide supply chain operators with more significant insights to improve performance and anticipate anomalies. Using advancements in smart and self-learning software, logistics businesses have a massive potential to improve utilization of capacity, reduce risks and improve the customer experience. Intelligent services will include predictive route optimization, demand forecasting and even anticipatory shipping.

The machine knows what and when to ship products before we do. All this data is useful not only for logistics planning, maintenance and services; anonymous data on logistics in cities will also provide important insights to city planners. Our living environments will become smarter, anticipating and human-centric with the data that logistics provides on a daily basis.

Connect the unconnected

The outerweb, edge computing, Internet of Things (IoT) and 5G wireless networks will connect the disconnected linear world of logistics, empowering visibility and efficiency. Intelligent logistics networks are on the horizon, which increases the traceability and reliability of operations. Every item within the smart logistics network will be enabled to exchange information about the whereabouts, condition and treatment of goods. Because of this, we will see the rise of a demand-driven, market-responsive supply chain model. Mobility as-a-service and transportation as-a-service will become de rigueur in today's on-demand society. A virtual, connected logistics model will be driven by integrity and transparency. As it becomes more important to reduce the negative impact of consumption, the demands on logistics will change. Telematics and sensors will enable smart trucks and other future mobility systems to make use of dynamic route optimization and avoid unnecessary deliveries, miles or even under-utilized transport vehicles. A connected network will be able to calculate the best and smartest way to deliver products to end users, where and how they want.

Responsible, meaningful logistics

"Fair and responsible" are becoming the new cornerstones for business growth in logistics. Logistics and transportation need to be based on adding purpose to society. Because of this, brands are focusing on the societal and environmental impact of the end-to-end route their products travel. Supply chains need to be fully circular or at least should not negatively impact the planet or people. We move to a world where growth in logistics will even mean a better and more greener planet because future logistics will improve our living and natural environment.

The traditional linear supply chain will become a circular one as products flow linearly from raw material to end product, to product and materials reuse. Reverse logistics will become common and even be critical to the survival of brands and the success of business models as environmental impact becomes directly linked with economic success or failure. The combination of smart logistics with distributed ledger technologies such as blockchain

> **68% of people in the developed world will live in cities.**
> *United Nations*

will help meet transparency demands. Blockchain will enable anyone along the supply chain to track products and trust the accuracy of data. Blockchain's peer-to-peer technology will match packages to trucks, drones and cars, in a direct and automated way. Every activity along the journey – every move, step, mile and handling – will be registered, analyzed and visible to anyone.

Sharing and co-opetition

Today's infrastructure has reached its limits, and building a fundamentally new one would be time-consuming, costly and complex. Meanwhile, today's cities face many infrastructural bottlenecks, resulting in logistics constraints. In addition to technological solutions, future solutions lie in changing the working model. Sharing and co-opetition will become a necessity. The societal shift from ownership to access – in which value is derived from not how much you own but how little you can get away with owning – is one of the most dominant trends of the past decade. Similarly, future value creation in logistics won't depend on having assets but on the ability to intelligently use access within the logistics network. Particularly with crowded and growing urban areas, it will become necessary to share equipment transportation networks and warehouses. Companies need to look beyond their own goals and start with working and acting together. This also means the reset of business models. Shared access to mobility and logistics will also help fight inequality, because access to mobility is access to future opportunity. Most car manufacturers are adapting to these new business models to remain relevant in the future of city mobility.

Humanless logistics

As mobility, logistics and transportation become autonomous, the industry will fully revolutionize the cities we live in, how we move, consume, work and socialize. The means of getting from point A to B will shift as vehicles become more than transportation tools. People will be able to do other activities as their commute is no longer consumed by driving activities. Autonomous transport also promises to lower the costs of consumer goods.

While autonomous systems and intelligent highways have been promised for years, these capabilities are most likely to emerge at scale from 2030 and beyond. That's because fully scaled autonomous capabilities require not just technology but also changes to regulations, mindsets and infrastructure. We will move to a world where self-driving rideshare services will be more interesting and less costly than owning a private vehicle. Until then, we will see the rise of constrained autonomous delivery, such as delivery robots for the last mile.

The rise of drones or unmanned aerial vehicles is already being applied in some parts of the world, and many of today's delivery companies invest heavily in drones and autonomous robots. So while these capabilities will emerge, their form will be different, and the speed of large-scale acceptance will probably take longer than we expect because of the need to establish the safety and trustworthiness of these autonomous technologies.

> **Networks of autonomous surface and underwater vessels are set to radically change the nature of maritime operations. Developments widely reported in media, such as those in autonomous shipping, are developing with greater pace than expected.**
> *Global Marine Technology Trends, 2030*
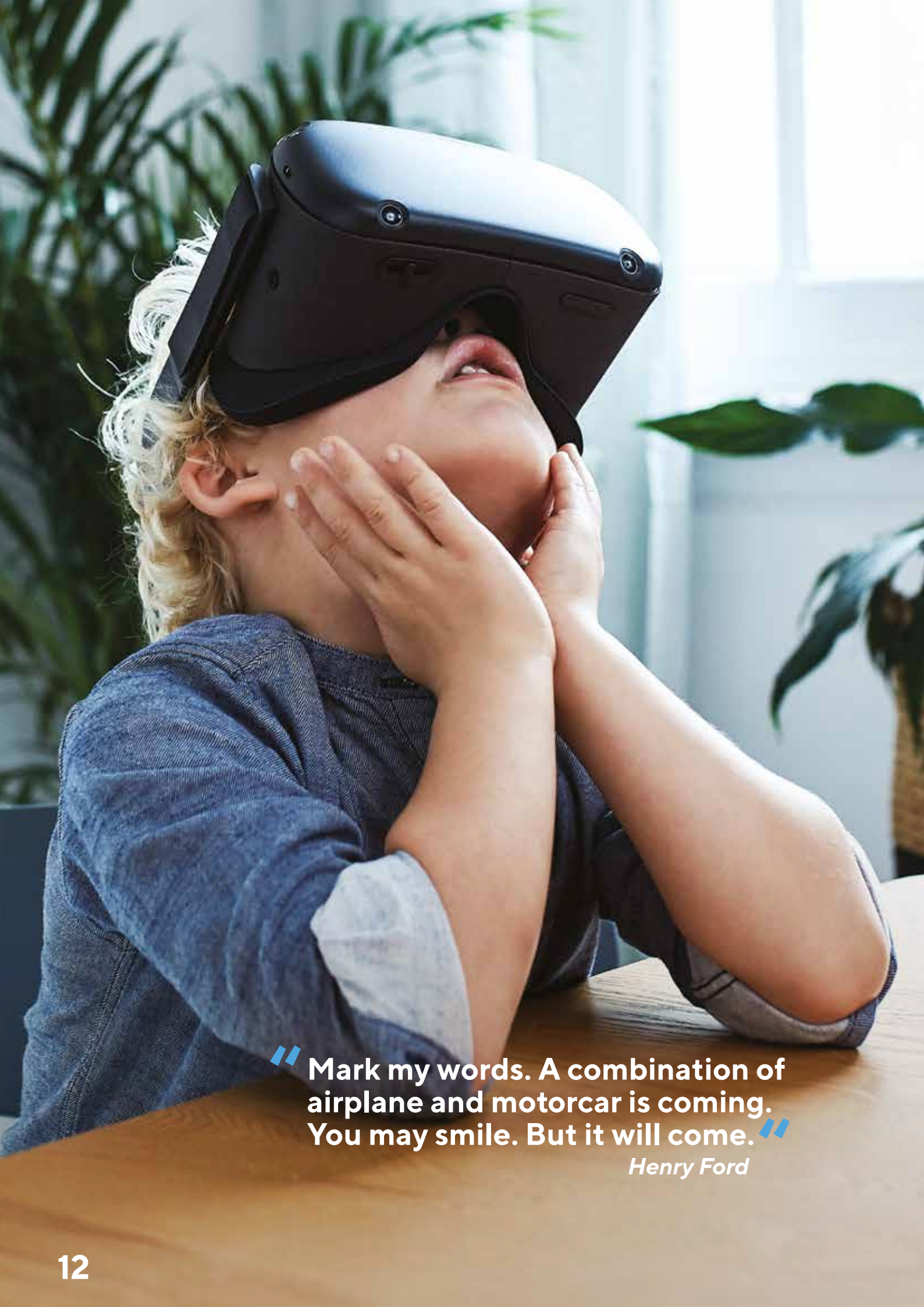
"Mark my words. A combination of airplane and motorcar is coming. You may smile. But it will come."

Henry Ford

Imagine, one day...

By letting go of our mental barriers, we can think freely about a possible future of logistics. Imagine that in 2050, factories and distribution no longer rely on humans. Human activities have nearly completely disappeared from factory grounds, and factories have become interconnected with customers. Collaborative robots, intelligent unmanned aerial vehicles, advanced sorting systems and tube systems are the new modes of transportation and logistics. These smart machines interface directly with consumers to understand their needs and wants. Robots deliver purchases instantly. Biometric authentication makes it even possible to deliver on-the-go, anytime and anyplace. Smart distribution hubs deliver and even print products before they're ordered. Cities are transformed into green surroundings designed for human life and interaction, not for distribution and transport. Warehouses even fly in the sky.

All transportation of humans and goods is freely available. Ownership is gone, and access to public transport is unlimited. Logistics no longer puts a strain on the planet and even contributes to a more healthy planet. In the city of the future, day-to-day goods are refilled automatically, some products are printed, and the rest is delivered when and where you want it. Houses don't have driveways, and streets don't need parking spots. Everything is done with hop-on and drop-off. People order their means of transportation based on destination and needs and wants for personal transport. Driving licences are not needed, and steering wheels do not exist. Vehicle accidents no longer exist, and every product informs its future owner when it will arrive. Teleportation has become a reality for the first products by the year 2050. The word "delay" is unknown as everything is monitored and predicted with data. Our transportation systems will be totally managed by technology and monitored by humans.

Whether this is an awe-inspiring or frightening future scenario, it raises important questions. What does the future of logistics mean for the planet and society? Can technology create real progress by fundamentally changing the logistics industry? It's up to us to imagine.

Transportation & Logistics reinvented
New challenges and questions

Future visions about transportation and logistics are becoming an inevitable near-future reality. But with all the new digital opportunities, are we addressing the real challenges? Better, faster and more efficient are key challenges in logistics and mobility, as are green circular logistics and even autonomous systems.

Will these changes create a world we want to live in? Logistics and mobility are important tools to improve standards of living and create a better, more equal, cleaner and sustainable world. This requires a forward-thinking mental shift from doing less bad toward doing only good. Is the industry asking the right questions and doing the right things to create our future world? Or are most traditional organizations within the industry part of the problem?

As technology redefines the world of logistics, a new set of ethics and morals has to be formulated. Is everything that's technologically possible also desirable in the future of logistics? Every innovation will come with a set of ethical issues, liability and legal problems. Autonomous systems will have far-reaching regulatory, societal, cultural and technological implications. Logistics will be confronted with questions and challenges it had never thought of. Businesses, societies and governments will have to face and solve these challenges as soon as possible.

"My opinion is it's a bridge too far to go to fully autonomous cars."

Elon Musk, Financial Times, 2013

Many of the new technologies in logistics will offer massive benefits. But many of these technologies can also be a threat to public safety. The most well-known of these are autonomous mobility systems. Multiple companies are testing autonomous systems, and in the upcoming years will want to operate their groundbreaking innovations in public streets. Regulations will need to be put in place to keep the streets and skies safe. Enforcement tools will need to stop rogue drone deployments and ensure drones don't intrude on our privacy or safety.

Data is becoming the most important asset for the future of mobility. In the connected world, every movement of humans and goods leaves a trail of data. This data will be collected, analyzed and used for other services. Smart and anticipatory cities are on the horizon. The big question for these cities is whether individuals are being treated as a consumer or as a citizen. From which perspective will our data be used? This is a fundamental difference affecting all of us.

As the collection and usage of data rises, it will introduce new constraints on logistics as privacy and security are protected. Regulators are already thinking about the consequences of a data-driven autonomous logistics network and are struggling to foresee future consequences. As mobility systems become autonomous, ethics will become a more important part of the future of mobility. If an autonomous system crashes, who is to blame? It cannot be the passenger.

Will autonomous systems be programmed to protect the person inside the car or a pedestrian? As long as humans are developing software, they will program these decisions. But what if systems become self-adaptive and self-learning? Do we want to move toward a world where a system decides? Rules for this are being developed or are already developed in some countries currently.

The most common question in this technology-driven revolution is: How will we all benefit? There are studies suggesting that autonomous transportation increases road congestion and even inequality. Affordability and a system that focuses on multiple passengers will be key to future success. Not to mention that autonomous will never be a replacement for high-capacity public transit. It has to integrate with our traditional means of transport to be available to everyone.

What will the future of work be within the logistics and mobility industry? Automating as much as possible is today's Holy Grail. Robotized warehouses and unmanned deliveries are just the beginning. The biggest quest of automation is to humanize work. How can technology harness the unique powers of humans, giving inhuman tasks to machines and carving out a place for the unique skills of humans in logistic processes? The biggest challenge is facilitating collaboration between technology and humans as it will require up-skilling the workforce to take on new responsibilities.
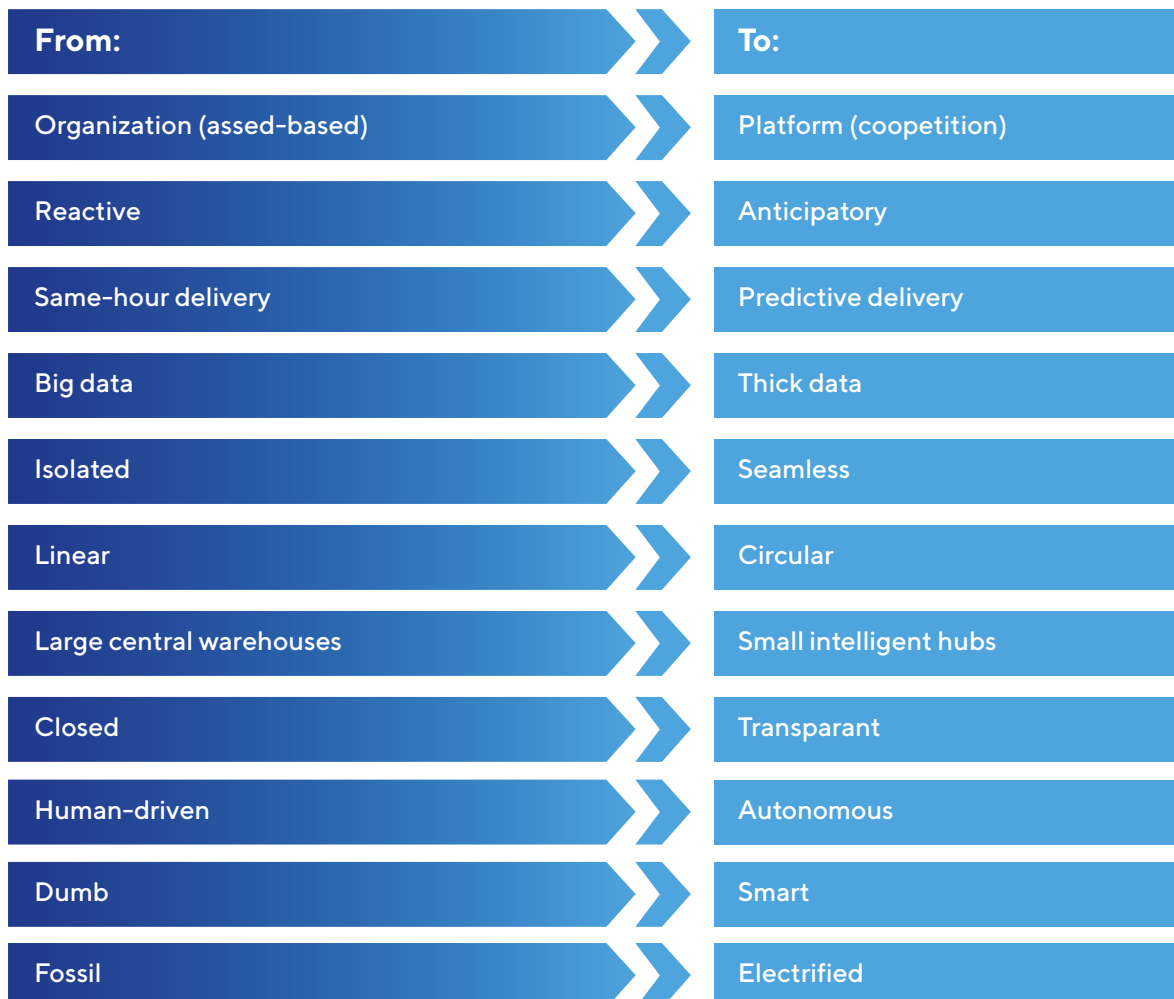
> **If we do not plan and set out thoughtful policies, driverless cars could exacerbate the challenges we see in transportation today – especially for underserved communities.**
>
> *Union of Concerned Scientists*

The future is already here

The movement of freight and products is changing in ways many of us can barely imagine, and with a pace faster than any in recorded history. Dominated by new technologies but led by humans, the industry will shift from a reactive system based on asset ownership toward anticipatory flexible networks based on collaboration and access. Logistics will happen through interconnected supply chains with cross-border data exchange, orchestrated by smart self-learning algorithms and supervised by humans. Throughout the logistics process, everything will be connected and continuously monitored, resulting in a transparent supply chain with accessible real-time data for owners. Every shipping process in the supply chain will contribute to a more healthy environment, without negatively impacting the planet. Logistics will add value to society instead of extracting resources and polluting environments. The industry will shift from a dumb and fragile system to one that is resilient to the fast-changing demands of society, from natural resources to last-mile delivery. In the end, it will become fast, durable, customer-centric, efficient and, most of all, reliable.

From:	To:
Organization (assed-based)	Platform (coopetition)
Reactive	Anticipatory
Same-hour delivery	Predictive delivery
Big data	Thick data
Isolated	Seamless
Linear	Circular
Large central warehouses	Small intelligent hubs
Closed	Transparant
Human-driven	Autonomous
Dumb	Smart
Fossil	Electrified

Real-life cases

The following cases are inspirational and show how logistics is changing. Startups and innovative ideas can grow but also fail fast – that is innovation at the frontiers of an industry. (No business relationship exists between the cases below and Cognizant.)

Deep Blue Globe

This startup develops artificial intelligence solutions for the shipping/maritime industry. The solutions are based on satellite services and Earth observations. With the use of real-time satellite data, the company's autonomous navigation system, Poseidon, optimizes every aspect of a ship's journey, including safety, speed and fuel consumption. Poseidon's goal is to accelerate the development of autonomous shipping.
www.deepblueglobe.eu

Flexe

This company enables on-demand and flexible warehousing, with access to more than 1,000 warehouses and additional services around the globe. Flexe is used for e-commerce fulfillment, retail distribution and inventory overflow.
www.flexe.com

Convoy

Convoy was founded to ensure freight trucks are fully optimized with full loads, saving money for shippers, increasing earnings for drivers and eliminating carbon waste. The company moves millions of truckloads through its connected network of carriers.
www.convoy.com

Shypple

This startup provides a digital dashboard for companies to search and book freight shipping. Shypple also offers the opportunity to benchmark quotes and track freight in real-time.
www.shypple.com

ShipChain

ShipChain offers a service using Ethereum blockchain technology and principles, enabling a fully integrated system across the supply chain. The end-to-end process is tracked and traced, from the moment a shipment leaves the production facility, to final delivery on the customer's doorstep. ShipChain promises that every shipment is federated and validated in trustless, transparent blockchain contracts.
www.shipchain.io

> **"Technology** changes **all the time;** human nature, **hardly ever "**
>
> *Evgeny Morozov*

VeloMetro

With its pedal-electric vehicle Veemo, VeloMetro wants to make personal transportation flexible, affordable and environmentally friendly. The electricity-assisted velomobile provides the functionality of a bicycle and the comfort of a car, making it suitable for urban travel with navigation and cargo.

www.velometro.com/veemo

Skycart

Skycart wants to revolutionize the way goods are shipped. Through its network of autonomous drones, the company aims to provide instant delivery and location-independent shipping 24x7. By using fast, seamless peer-to-peer delivery by air, the service can deliver packages in 30 minutes or less.

www.skycart.net

Mobotiq

This startup wants to completely change personal mobility by introducing a new type of vehicle that's fully modular and designed specifically for rental. Mobotiq focusses on peer-to-peer mobility that integrates specifically designed, autonomous pods and eliminates all intermediaries.

www.mobotiq.com

Jetpack Aviation

The first flying motorcycle could become a reality through Jetpack Aviation, which specializes in recreational jet packs. The company develops two models of a flying motorcycle that promise to be the first in the world. Initial use of the models will be by the military, but in the future, they could also be used for commercial purposes.

www.jetpackaviation.com

The future is human

Humans excel at being creative, in seeing, identifying and investing in opportunities, and solving problems. Our human experiences and emotions – anger, sadness, love – will drive the future of logistics. Technology will enormously benefit the logistics industry by enhancing supply chain reliability and minimizing disruption.

The biggest barrier for industry change is human. We need to balance competition with coopetition in order to achieve interoperability and a model based on cross-border connectivity and information exchange. Advanced technologies will only be as successful as our ability to emphasize our basic human skills of trust and cooperation.

Let's be curious about the future, not fearful. Let us, as a society, create and discover new rules and norms. The future is not about making the present more efficient but about reshaping it – something only humans can and will do. Logistics will thrive through a shared vision and our bundled human forces.

Key take-aways

1. Focus on creating/sharing borderless data with consumers and suppliers.

2. Embrace a circular and sustainable mindset with logistics.

3. Reduce carbon footprint at each stage of the supply chain.

4. Prepare for a digital-driven future of logistics.

5. Do not overestimate technological promises. Never underestimate the much-needed human skills in logistics.

6. Begin to pilot distributed ledgers in operation.

7. Connectivity and data sharing are key for the future services and consumer demands in logistics.

8. Flexible, transparent, on-demand, connected, data-driven, green logistics are the new normal.

9. Autonomous is the promise of logistics, but humans will still be needed.

10. Success in logistics lies in sharing data beyond your own company borders.

Cognizant®

ABOUT COGNIZANT

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 193 on the Fortune 500 and is consistently listed among the most admired companies in the world.

Driven by a passion to help our clients build stronger, more agile and more innovative businesses, we enable global enterprises to address a dual mandate: to make their current operations as efficient and cost-effective as possible and to invest in innovation to unleash new potential across their organizations. What makes Cognizant unique is our ability to help clients meet both challenges. We help them enhance productivity by ensuring that vital business functions work faster, cheaper and better. And, our ability to conceptualize, architect and implement new and expanded capabilities allows clients to transform legacy models to take their business to the next level.

Learn how Cognizant helps clients lead with digital at

www.cognizant.com

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