

An easy-to-grasp guide on how to move up the customer value chain and stay competitive by applying three levels of basic and emerging logistics technologies





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# Intro



The importance of logistics is soaring while the ability of logistics companies to innovate remains unclear. Logistics solutions and service providers can either rise to the occasion and become top-performing businesses or rust away and become irrelevant. This guide is aimed at helping logistics providers streamline their digital journeys. It provides a clear look at the pyramid of logistics technologies that enable transparent supply chains through data-driven intelligence, tangible automation, and robust integrations.

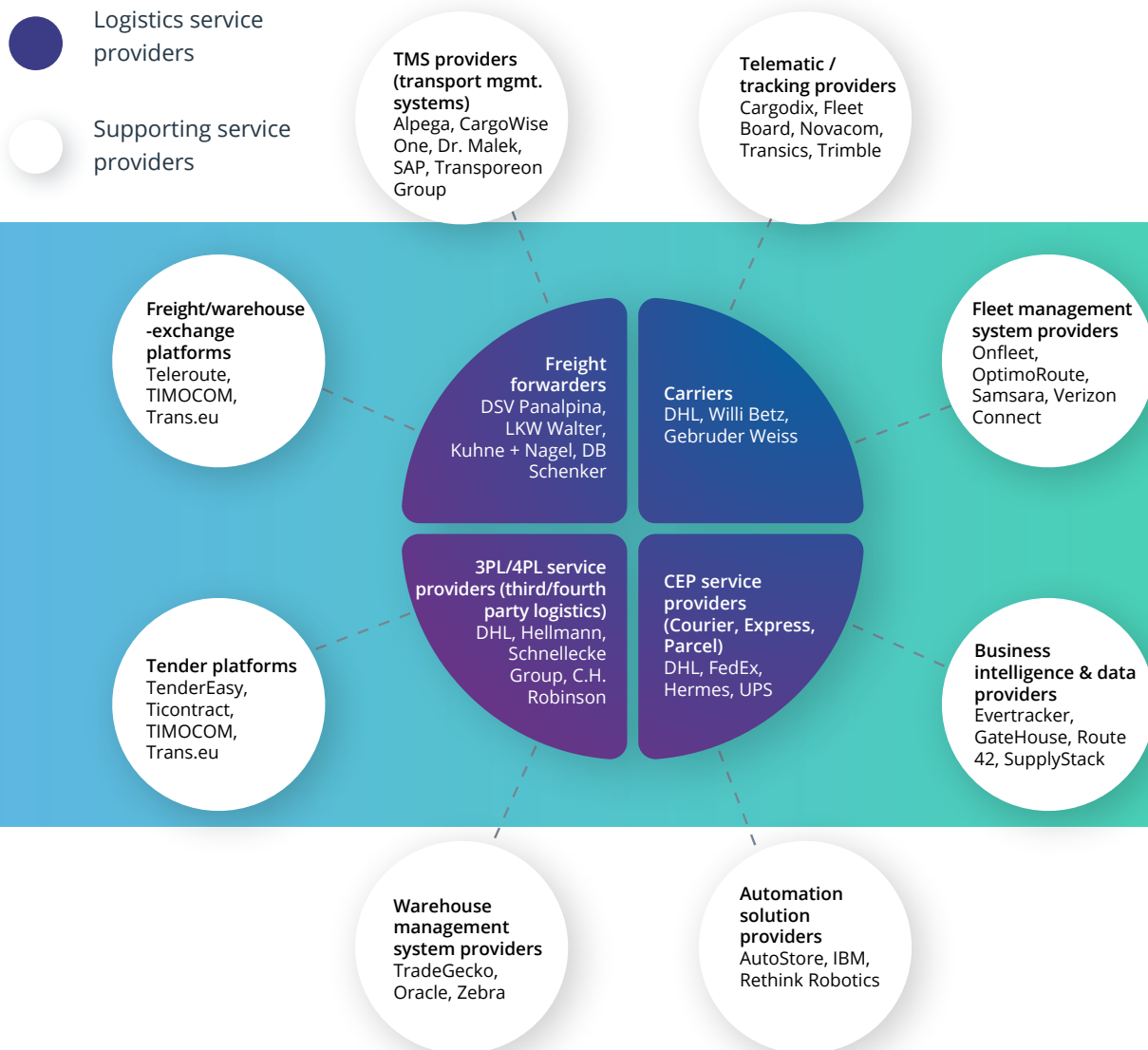




# Logistics technologies are connecting industries

Logistics connects all other industries together. Covering the needs of various stakeholders, logistics service providers share the responsibility for supply chains with a wide range of industry players. All stakeholders impose different requirements and look for tangible proof that their needs are covered and that their supply chains are resilient.

This makes cross-industry experience even more important, as combinations of solutions help to verify how products are produced, operations are performed, and requirements are complied with. Transparency, which is key to the future of logistics, is achievable through automation and integration of diverse technologies from multiple providers.





# Supply chains must deliver end-to-end value

Consumers expect personalized services and great digital experiences. Retailers strive for flexibility in terms of transportation options, smarter route planning, and service providers at various price points. Logistics solution providers have to keep in mind the needs of every stakeholder who uses their product

for supply chain management, from manufacturers to transportation providers and end customers. Customer expectations are growing, and customers don't want to plug in to a digital experience. They want digital technologies to augment and elevate their everyday human experience.



Logistics process	Processing of door-to-door quotes from producers and shippers	Processing of delivery orders	Tracking drivers and trucks with cargo	Serving retailers and end customers
Digital footprint	<ul style="list-style-type: none"> <li>Online tendering platforms</li> <li>Price comparison websites</li> <li>Smart matching systems</li> </ul>	<ul style="list-style-type: none"> <li>Planning of pick-up from a warehouse</li> <li>Smart routing</li> <li>Demand-based scheduling</li> <li>ETA predictions</li> </ul>	<ul style="list-style-type: none"> <li>Dynamic routing</li> <li>Telematics</li> <li>Asset tracking</li> <li>Smart monitoring</li> <li>Predictive maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Choice of last-mile delivery transport</li> <li>Warehouse management</li> <li>Pick-up notifications</li> <li>Automated stores</li> </ul>



# Competition for the market is growing

Numerous mediators and previously big customers appear to be fierce competitors to established logistics companies. Enterprise-level retailers have started maintaining small fleets

and demand-driven stock to deliver faster, more flexible, and more personalized services. Tech startups are entering the logistics industry with tailored user experiences.

## Startups

e.g. Sennder, InstaFreight, Traxens, FreightHub

- Small, innovative players develop market-leading solutions for niche markets within the industry
- Incumbent players with larger, more diversified market shares do not see the small players as threats
- During their growth phase, successful startups scale their market penetration and start to threaten the market shares of incumbent players
- Successful startups often have superior business models, forcing incumbent market players to either transform their business model or lose their market position

## eCommerce players

e.g. Alibaba, Amazon, JD.com, Zalando

- Large eCommerce players have recognized the optimization potential in logistics, and are investing in logistics infrastructure
- As eCommerce companies, they previously relied on incumbent logistics services providers to carry out their deliveries – internalization of these services increases their market power and cuts costs
- The already strong position and growth of the eCommerce market (B2C) immediately gives major players a large market share in the entire logistics ecosystem
- Once they have established their logistics infrastructure, eCommerce players can diversify their logistics services towards the B2B sector



# Who will be the winner?

## Tech readiness decides

The value of technological innovation in logistics is soaring. Still, traditional logistics companies often lack the necessary processes, IT infrastructure, and organizational structure to develop complete solutions at the level desired by customers for reasons they admit: a lack

of technological expertise, a lack of software engineering resources, and an inability to attract investments to digitize services. This opens doors for new competitors. Thanks to previously adopted technologies, startups and eCommerce platforms are gaining the edge in this race.

Importance ↑ high ↓ low	Key decision factors	Incumbent freight forwarders	Digital freight forwarders
	Prices	=	=
	Shipping speed		+
	ETA accuracy		+
	Instant booking		+
	Freight insurance	=	=
	Trust in carrier	=	=
	Delivery transparency		+
Investment barrier			

low ————— Level of digitalization ————— high

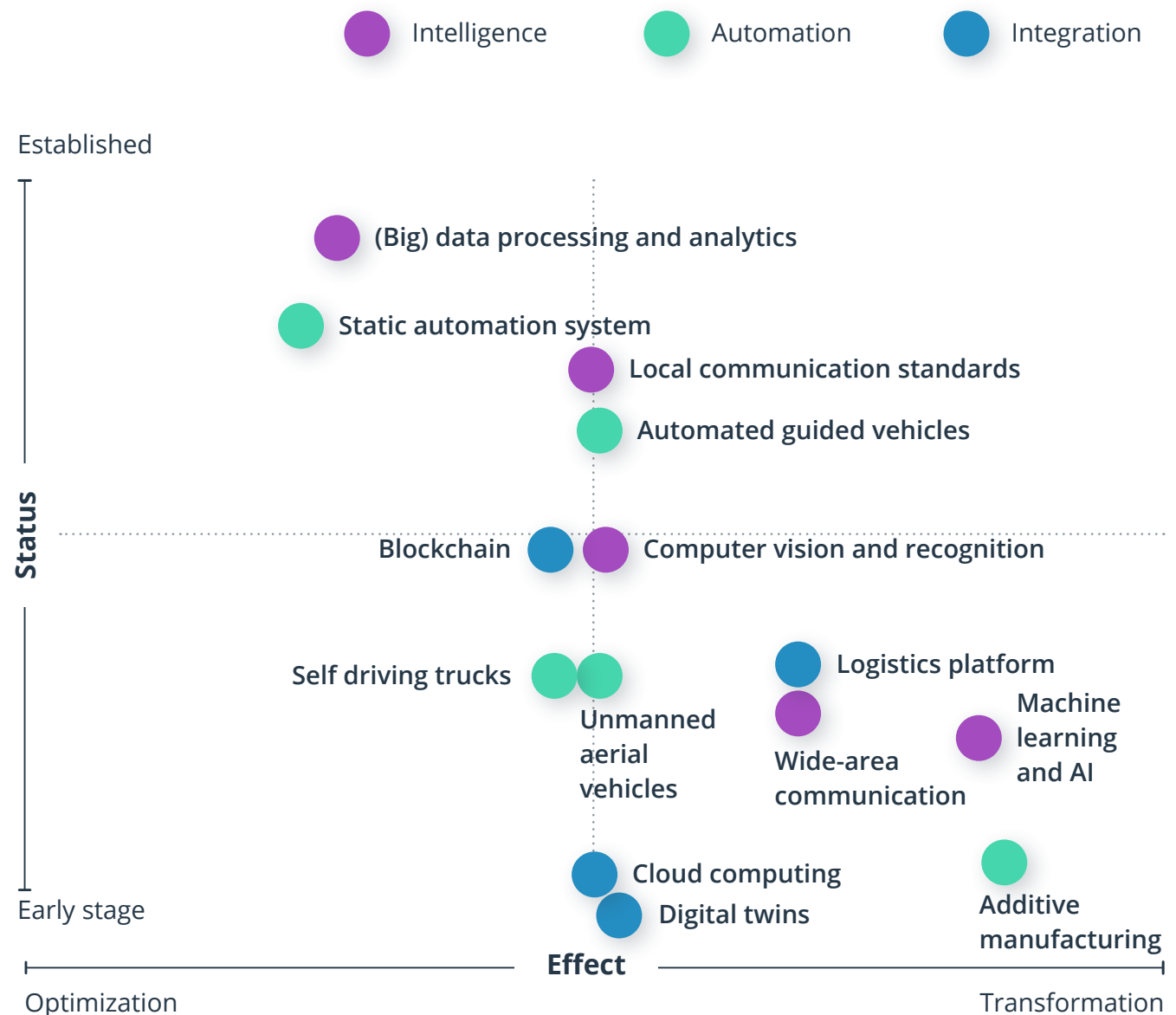
- Incumbent freight forwarders fulfill the basic demands of their customers but lag behind digital freight forwarders in key decision factors in challenged market segments
- Large freight forwarders recognize the danger and are already investing in their transformation
- Smaller freight forwarders lack the funds to adapt their business model
- Consequently, incumbent players who are not able to match the services of digital competitors lose market share



# Choosing the right technologies with the most benefit

Introducing innovation as well as scaling it throughout the supply chain requires logistics providers to slowly adopt digitization rather than take a sudden leap. They need to nurture a technological culture that sticks. For this,

they need to carefully choose technologies, consider where to start, and decide where to go next. They need to assess where to take risks and where to apply best practices learned from the failures of others.





# Pyramid of diverse logistics technologies

For the purpose of helping solution providers prepare the relevant technology mix and move through the transformation journey, we've derived a pyramid of technological innovations in logistics. Looking at this pyramid, logistics providers can clearly understand what they're missing and what they'll face along the digital journey they'll

inevitably undergo in the next few years. Logistics providers have to fulfill basic digital needs with technologies already on the market. Then they can advance to value-added technologies by providing complementary demand-driven services. Finally, they can start exploring emerging technology that comes with uncertainty but promising rewards.





# Basic Level 1: Data-driven intelligence

The basic level of logistics technology ensures a firm foundation for building a wider scope of complex solutions. This level consists of separate tools to cover particular tasks for shipment tracking, data analytics, route planning, communication between staff, etc. Level 1 technologies provide valuable input data on suppliers, carriers, transactions, roads, demand, geo positioning, weather, and so on.

The volume of this data continues to grow, making it increasingly difficult to figure out the most relevant data, structure it, and come up with decisions and actions. Data-driven supply chain management cannot exist without this basic level. It's the most practical, efficient, and proven way to implement technologies for increased flexibility, visibility, and control over the supply chain.



## GIS data processing

Structure and process spatial data and conduct analytics to streamline the compilation of logistics maps

[Learn more >>>](#)

## Driver onboarding automation

Accelerate onboarding of truck drivers through automation of document processing and image recognition

[Learn more >>>](#)

## Telematics and GPS

Increase fleet efficiency, enhance driver safety, and comply with regulations

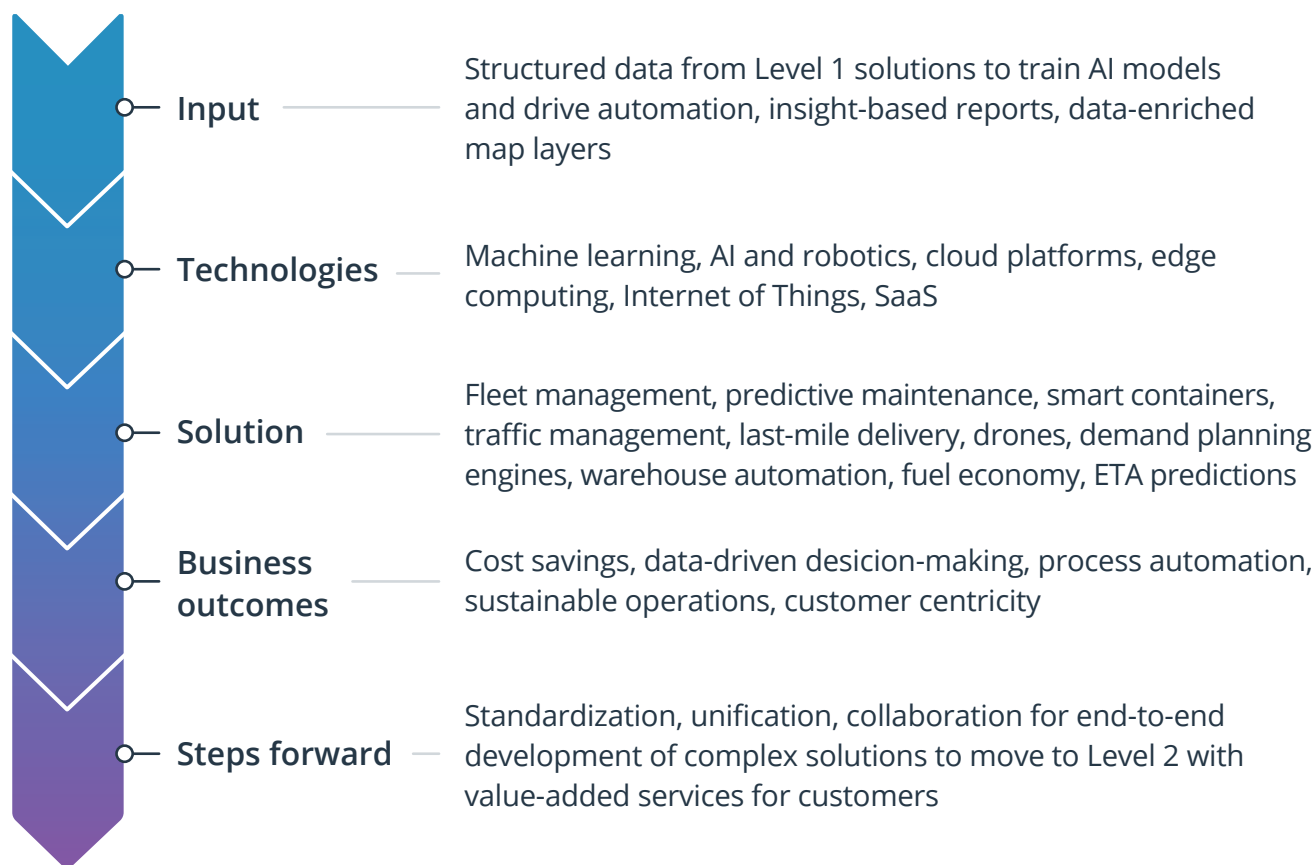
[Learn more >>>](#)



## Advanced Level 2: Value-driven automation

The middle level of the pyramid consists of various technologies for generating insights. The total spectrum of available and potential technologies can offer more value to customers. A part of common fleet management, these technologies can improve all related services along with supply chains. By training machine learning algorithms on already acquired fleet tracking data, fleet managers can

shift to predictive maintenance to save millions on repairs and avoid incidents. These technologies require the implementation and adoption of cross-industry expertise in AI, IoT, and cloud technologies to leverage basic inputs from Level 1 and ensure intelligent and automated supply chains. Ultimately, these advanced solutions directly influence the main business objectives of logistics providers and customers.



### Fleet management

Fleet managers can monitor fleet resources, build optimal routes, and locate stolen vehicles

**Learn more >>>**

### Predictive maintenance

Apply AI, IoT, and cloud technologies to evolve from preventive to predictive fleet maintenance and avoid costly repairs

**Learn more >>>**

### Estimated time of arrival

Predict accurate ETAs for logistics fleets using location technologies, data monitoring, and smart sensors

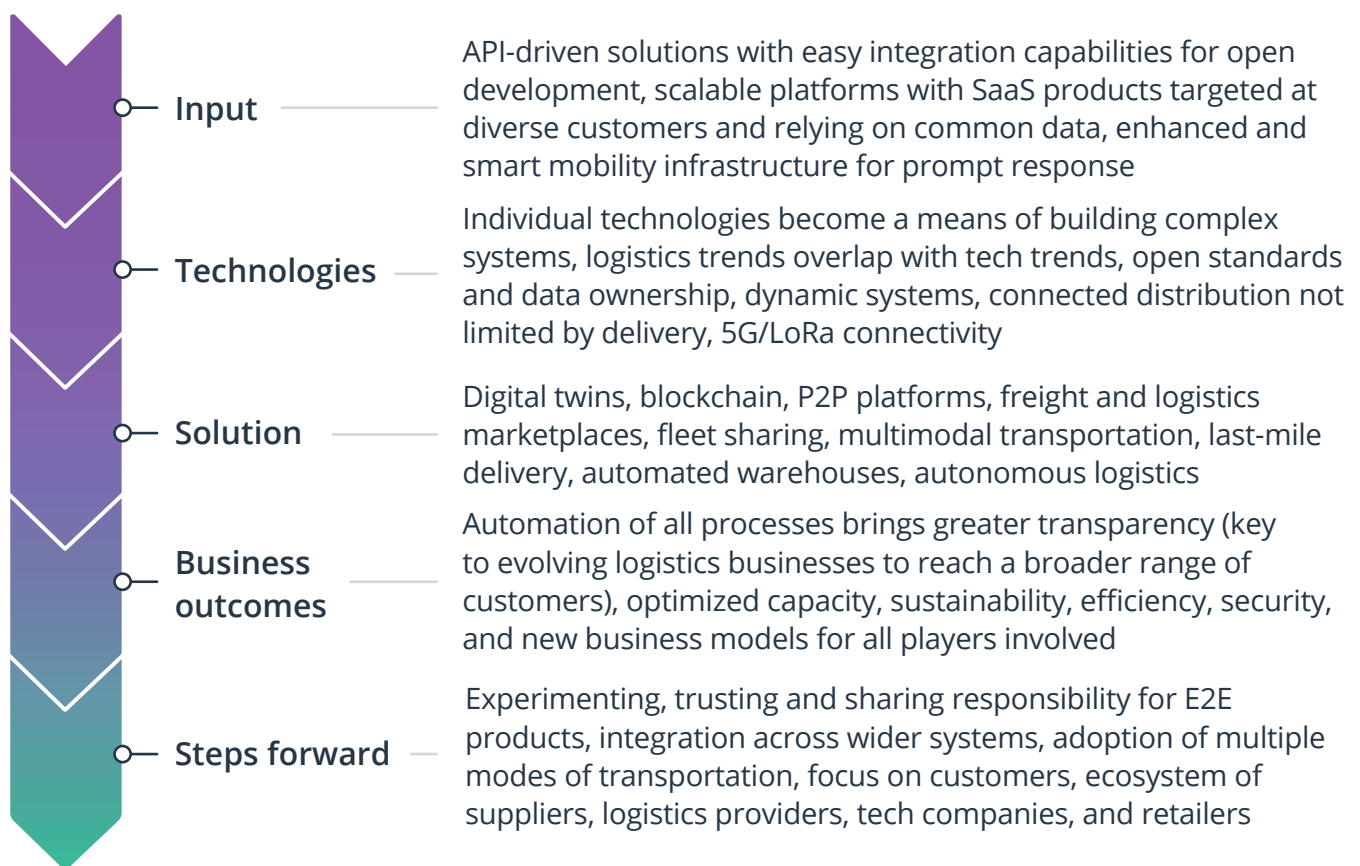
**Learn more >>>**



# Top Level 3: Innovation-driven integration

The top level of the pyramid represents complex solutions that stretch across supply chains and use the most recent trends in technology, connectivity, cloud services, and edge computing. These solutions overgrow limited planning and execution concepts and evolve into automated and intelligent processes without manual work to make supply chains responsive to customers' needs and resilient for all stakeholders. This top level can rely on specific industry context like various operational

flows in fashion or industrial manufacturing metrics to adjust supply chains to ever-present changes. This becomes possible as these solutions operate in tight connection with other cross-industrial products creating technology-enabled ecosystems, shared logistics, and logistics marketplaces. The top level of innovation requires brave experimentation that relies on engineering capabilities, partnership flexibility, and a readiness to share responsibility with proven technology innovators.



## Cloud platform for transportation

Scale logistics, routing, and urban mobility apps, cut operating costs, and simplify customer service

[Learn more >>>](#)

## Digital twins in supply chains

Digitally recreate the entire supply chain with containers, warehouses, and entire cities

[Learn more >>>](#)

## Blockchain in logistics

Apply distributed ledger technology to ensure transparent tracking of product origins

[Learn more >>>](#)

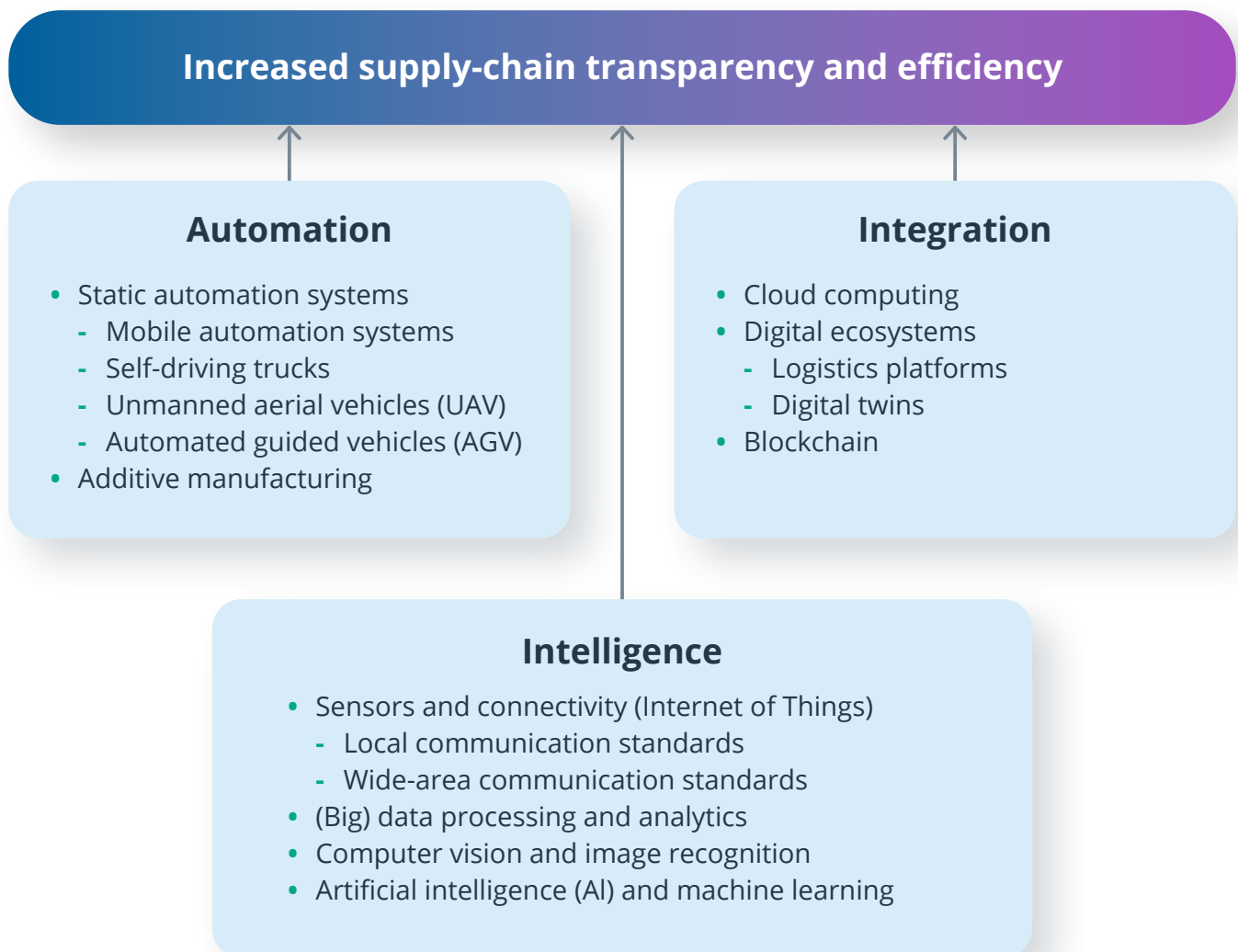


# A systematic and unified approach to technological innovation in logistics

Tech readiness is key to transparency. The winners will be those companies who start implementing technology at all levels, from data analytics to intelligent systems united into automated platforms.

Logistics service and solution providers require roadmaps to implement the exact technology

they need today and move forward to a fully digital tomorrow. They need an overall digital strategy to evolve from legacy services to value-added services backed with technology and tailored to meet customer expectations. All this comes down to introducing technology at scale in a step by step manner.





# How to pass all levels of innovation on the way to resilient logistics

Logistics services are evolving into huge streams of data that saturate technology solutions implemented throughout the supply chain. This overwhelms solution providers with new requirements but allows supply chain participants to make active, insight-based, and dynamic decisions without disrupting whole supply networks.

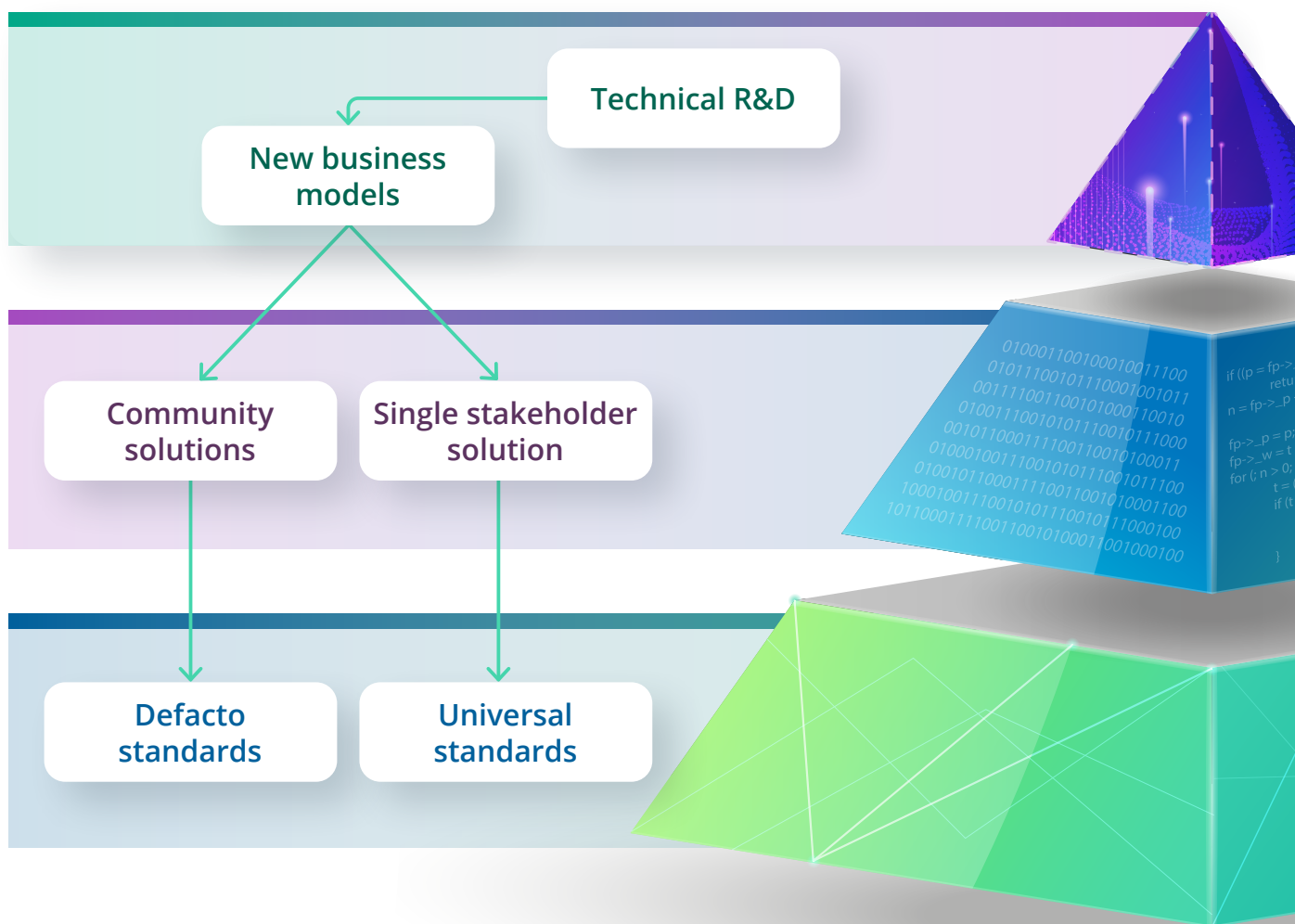
These collaborative solutions at different

levels will support each other and result in transparent services, reliable processes, and predictable profits. Companies who keep pace with technological innovations and match them with market demand will earn a place in the future of logistics. Their path is to find a correlation between scattered solutions and see technological innovation as constant evolution rather than a one-time breakthrough.

Experimenting

Implementing

Standardizing



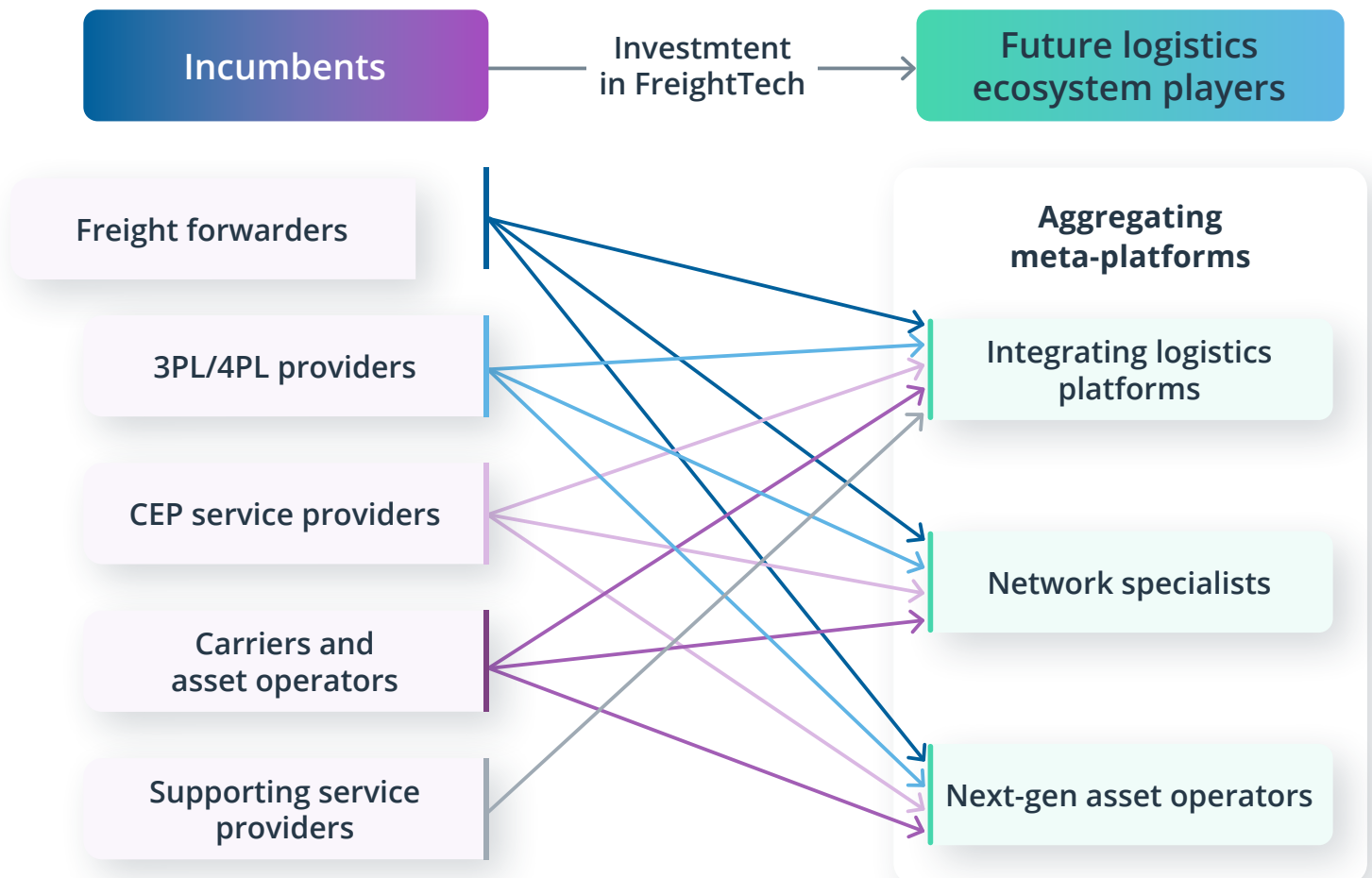


# The future of logistics looks bright and collaborative

Companies who have been running logistics services for decades as well as new players breaking into logistics have something in common: their future is tightly bound to the technologies they use and the collaborations they build. They may adopt digital strategies to different extents, unifying asset management, establishing transparent supply chains,

monitoring fleets, or covering specific customers' needs for last-mile delivery.

The future of the logistics industry and all players within it will depend on technology more than ever. Solution providers have to be prepared for new requirements and demands for logistics products and the most important to the new business environment they will operate in.

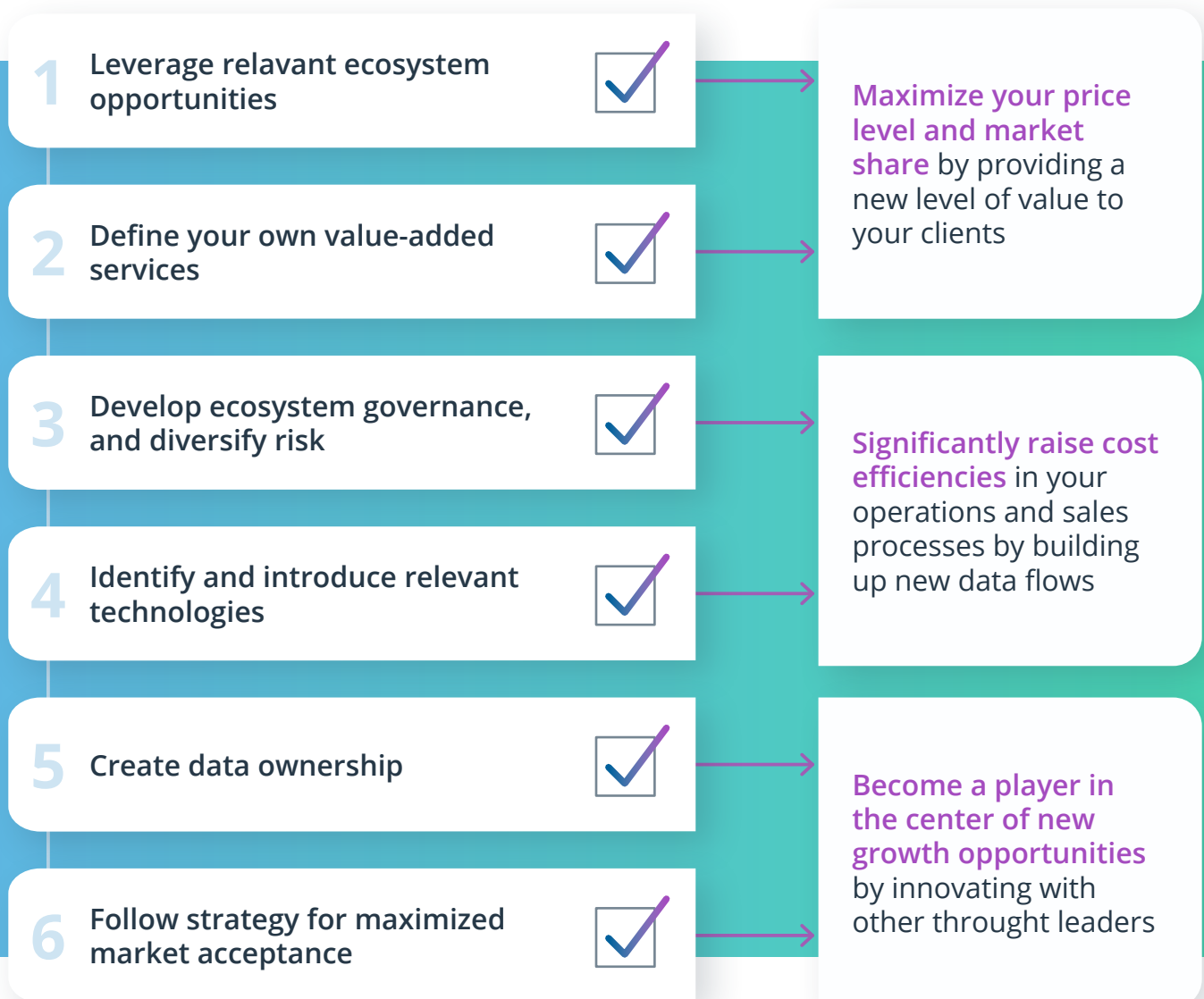




# Checklist for future innovation in logistics

On their digital journey, logistics providers have to be brave enough to admit they require assistance. This assistance may start from an overall look at technologies available now and grow to developing new technologies to enhance logistics and supply chain transparency. Apart from understanding the options available, logistics providers

need to understand the level of urgency for particular technologies and be able to distinguish between different technology levels. The following checklist shows logistics solution providers how their evolution throughout the digital journey will impact their business and what steps they can take to innovate safely.





# About Intellias

Intellias empowers logistics service and solution providers with a wide range of technology adoption strategies to deliver practical innovation throughout the supply chain.

## Quick facts

**2,500+**

Engineers: 73% senior and middle

**20**

Years of engineering experience

**13**

Offices around the world

**40%**

Year to year growth

## Benefit from our technology expertise for logistics



Transportation and logistics software development



Location based services



GIS services



Mapping services



Fleet management solutions



Supply chain management in retail



Internet of Things



Big Data Analytics



Cloud services



Machine learning and AI



Blockchain

Get advice and develop logistics solution with our services



**Volodymyr  
Zavadko**



**Software Delivery Director,  
Transportation and Mobility**

Volodymyr helps transportation, traffic, mobility, and freight solution providers from around the globe improve the performance of their businesses using location, mapping, and geospatial services. With over 20 years of engineering and solution delivery experience, he leads complex projects for OEMs, enterprises, and ISVs, focusing on added value for further growth.



**Vitalii  
Dutka**



**Business Director,  
Logistics and Transportation**

Vitalii specializes in development services, technology consulting, and cloud modernization strategies for global transportation, mobility, and logistics leaders. With a decade of experience in Data Center Networks and innovative R&D departments, he combines thought leadership and technological skills to guide companies through digital transformation.



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