The revolution in logistics

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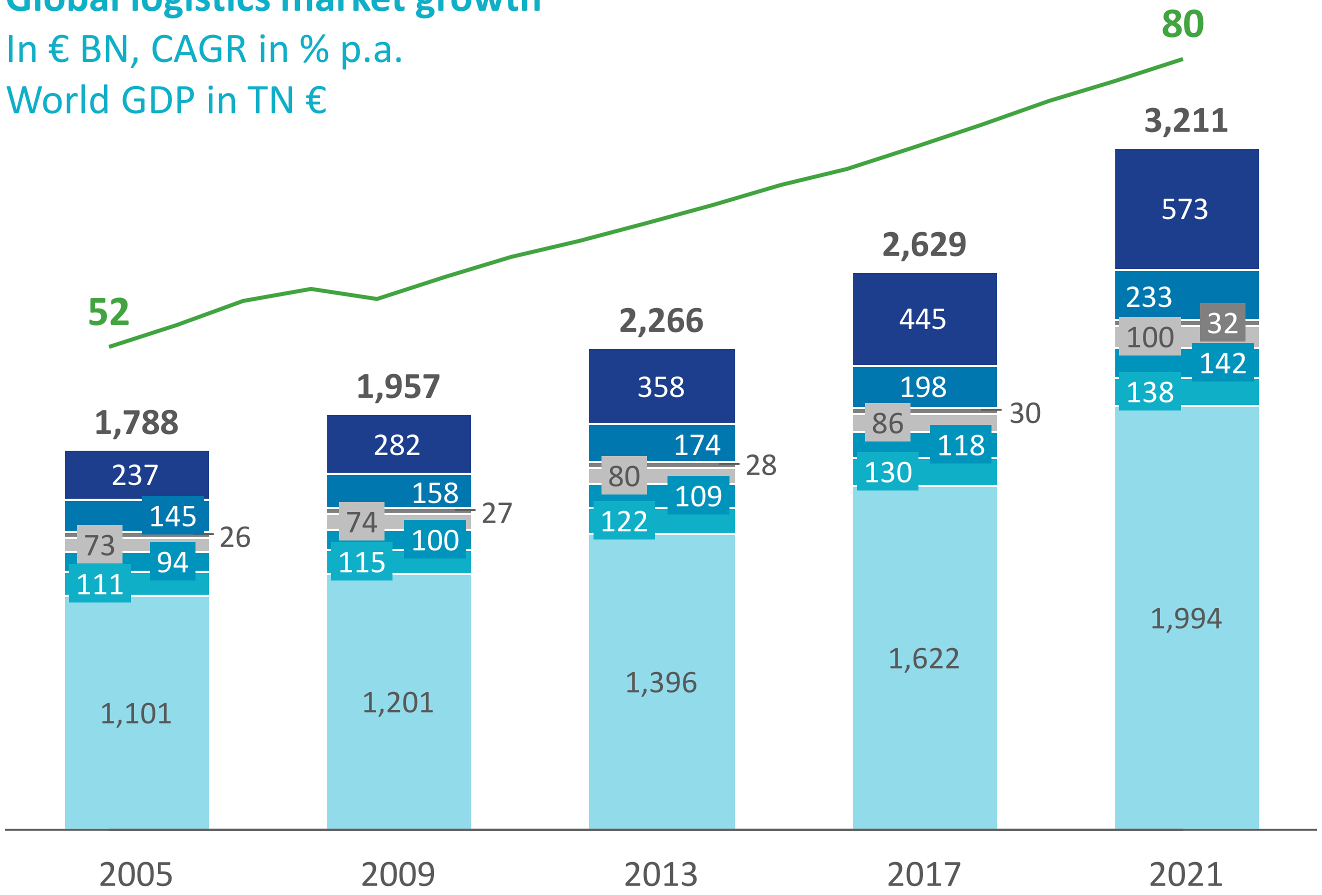
Logistics is a growing market highly related to global GDP, globalization and trade exchanges

Global logistics market growth
In € BN, CAGR in % p.a.
World GDP in TN €



	2005-21 CAGR 3.7%
CEP	5.7%
Outsourced Contract Logistics	3.0%
Inland Waterway	1.2%
Air FF	2.0%
Ocean FF	2.6%
Rail freight	1.4%
Road (FTL + LTL)	3.8%

Note: Not included are inhouse contract logistics, other transports like project logistics and non-containerized sea freight (bulk).
FF includes the forwarder and the carrier controlled parts.
Sources: Transport Intelligence (2017), Armstrong & Associates, Inc. (2017), Oxford Economics GDP data, Oliver Wyman analysis

The logistics industry will experience rapid change over the next years – digitalization is a major challenge and opportunity alike

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Trends	Implications for incumbents
Near-shoring, automation and new technologies trigger a shift between transport modes primarily in favour of Land Transport	Review Business unit/target industry mix
Customers and regulators increasingly require industry/customer-tailored end-to-end logistics service offerings	Develop integrated logistics service offering
Asia is the #1 growth driver, accounting for >60% of total growth through 2020; Africa and Middle East provide selected opportunities for market growth plays	Align regional portfolio with growth markets
"Parcelization" of transport flows impacts the whole Transport & Logistics value chain and triggers disintermediation of existing value chains	Align operations to smaller lot sizes and ensure "last mile" competency
By 2030, 85% of all logistics businesses will be hybrid- or fully digital; new models, e.g. E-Forwarding, Autonomous Fleet Mgmt., Virtual Warehousing arise	Digitalize core business and participate in new models
New entrants and former suppliers or clients carve out lucrative elements of the logistics value chain by exploiting digital technologies	Develop "Coopetition" strategies with new players
Incumbents (e.g. DHL, K+N) face competition from "Fast Movers" (e.g. XPO, DSV, CJ) that use M&A to boost their organic growth plans	Review positioning in industry consolidation play
Continued consolidation in carrier industries (Ocean, Land, Air) through alliances and mergers result in tighter capacity management on the side of carriers	Develop capacity management competencies

Sources: Oliver Wyman

Focus of following pages

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Digitalization in the transportation industry is impacting the entire value chain

Freight Forwarding

1 Online freight platforms
- E-forwarding
- Marketplaces (carrier-to-carrier) and load matching platforms (shipper-to-carrier)

Integrated Logistics

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- Integrated (e-commerce) logistics solutions

Manufacturing | Sea and air freight[1] | Terminals | Land transport | Warehousing | Last mile

2 Maritime
- Vessel/asset tracking
- Route optimization
- Ship-to-ship/ship-to-shore communication

3 Land transport
- Autonomous linehaul trucking solutions
- Self-driving enabling technology
- Mobile solutions for drivers/fleets
- Fleet management solutions
- Alternative commercial vehicle tech

4 Warehousing
- Virtual warehousing
- Automation/robotics for warehousing
- Wearables supporting warehouse services

5 Last-mile delivery
- On-demand delivery platforms
- Urban delivery incl. station solutions
- Autonomous last-mile delivery (drones, robots)

Data flow

7 Supply chain visibility and steering
- Transport management systems (TMS)
- Supply chain tracking (incl. last mile)
- Inventory management
- Big data analytics

8 Security/transparency/risk mgmt
- Product provenance (e.g., w/ blockchain)
- Risk management
- Asset tagging, incl. sensors

9 Financial services
- Financial blockchain solutions
- Supply chain payment platforms
- Trade financing solutions

Note: Total funding by cluster extrapolated/estimated
Source: Crunchbase, CB Insights, Oliver Wyman

- Initial start-up engagement (total funding < $50M)
- Emerging start-up engagement (total funding between $50M - $200M)
- Strong start-up engagement (total funding > $200M)

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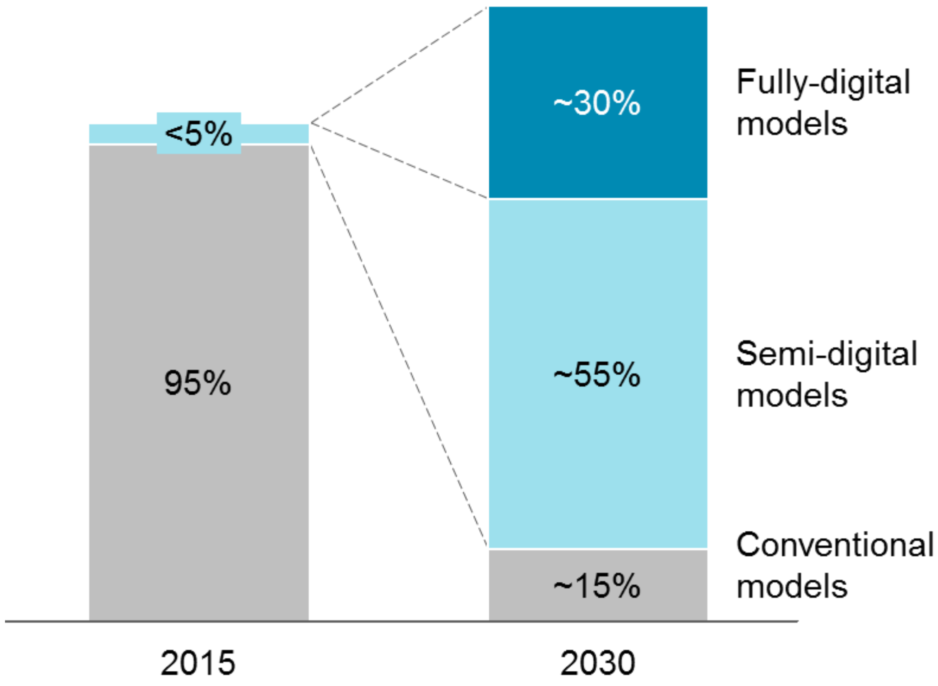
Conventional forwarding business models will be widely replaced by digital and hybrid business models until 2030, thereby (re-)defining success factors

Digital forwarding revenues
In %



Comments

- Requires new analytical/digital capabilities, e.g.
  - Forecasting/dynamic adjustment of operations
  - Value-add services, e.g. in tracking and tracing, fleet mgmt., SCM benchmarking, etc.
  - Complete client ERP/TMS system integration
- New factors become critical for market competiti-veness, incl.
  - Customer Journey understanding
  - Speed and scalability
  - Short release cycles for new applications
- Solution competency for complex transport services remains a core competency

Sources: Oliver Wyman

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Digitalization is significantly changing and shaping the logistics competitive landscape requiring established and new players to adapt their businesses

LOGISTICS COMPANIES

- More investments into digital business models
- Digital Transformation of the core business

E-COMMERCE GIANTS

- Leveraging E-Commerce volumes to support backward integration
- Digitalization of logistics
- Mix of partnership and in-house investments

DIGITAL LOGISTICS COMPETITION

CARRIERS

- Direct sales via digital platforms – vertical forward integration
- Optimization of asset-heavy core business using digitization

START-UPS

- Focus on asset-light, data-based business models
- Disintermediation of the logistics value chain

Sources: Oliver Wyman

While incumbents and start-ups digitalize the Transport & Logistics core business, new data-driven logistics business models emerge

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DIGITAL MARKET PLACES	• Matching • Optimization of utilization and routing • Value-added services for truckers/ carriers
E-FORWARDING	• Focused on standardized transport services • Optimized UI/UX • Automation of logistics processes
DATA-BASED SERVICES	• Data infrastructure for SME logistics providers • Commercialization of logistics data, e.g. insurances
ASSET-LIGHT DISTRIBUTION	• ”Uber for Freight” • Intermodal last-mile distribution
AUTONOMOUS TRUCKING	• Booking platforms for Platooning • Fleet management for autonomous trucks
DIGITAL WAREHOUSE	• Capacity management across multiple warehouses (on-demand) • Automation of contract logistics services

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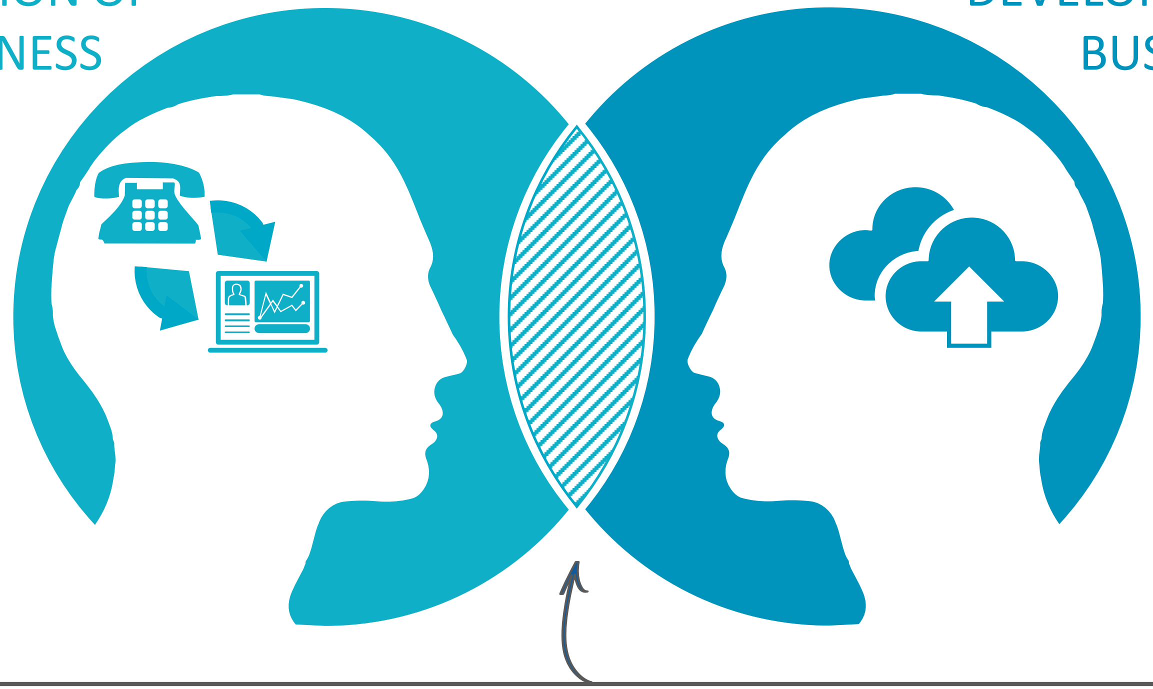
Logistic companies are required to focus on digitalizing the core business and simultaneously developing new business models

TRANSFORMATION OF THE CORE BUSINESS

DEVELOPMENT OF NEW BUSINESS MODELS



MEDIUM ← TWO-SPEED DIGITALIZATION → FAST

Sources: Oliver Wyman

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Logistics players will have to develop new digital competencies in order to ensure competitiveness of the business

Sensor-Technology
Automation/ Robotics
Artificial intelligence
Data-consolidation
Data security/ encryption

TECHNOLOGY

ORGANIZATION

COMMERCIAL

METHODOLOGY

Agile/Cross-functional teams
Digital Organization And Governance
Talent development
Digital leadership

Dynamic Pricing
Next-best-offer/ Next-best-action
Digital Marketing
Digital Payment

Digital architecture
Modularisation/ API Development
Continuous Integration
Big Data/ Machine learning
Agile (Software-) Development

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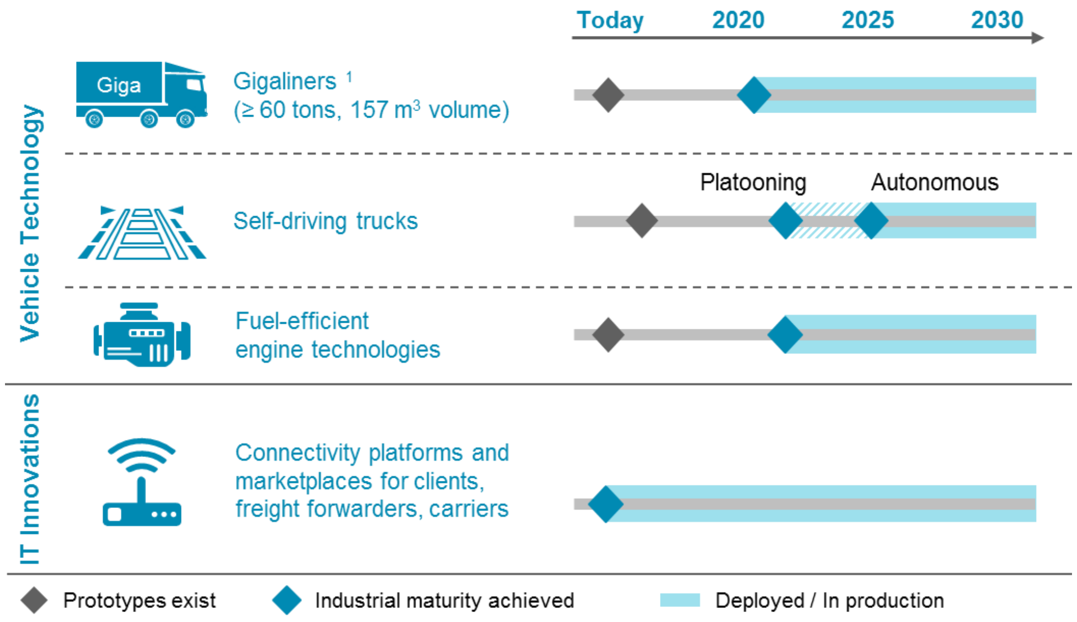
Rail will have to deal with technology driven, disruptive productivity gains in road transport

Core upcoming road technology innovations



~30% TO 40% PRODUCTIVITY GAINS

Challenges for rail

- Significantly longer innovation cycles in rail (25–30 years) than in road transportation (~5 years)
- Need to change a complex
system with a lot of players involved

1. Technically, the solution is available now. Effective launch of production and, hence, industrial maturity, is dependent on approval by national regulatory bodies
Source: Oliver Wyman analysis

Rail and Road transportation will converge in the future

Core upcoming road technology innovations

Electrification of trucking

Future Similarities

- Scheduling of platoons
- Booking platforms for slots on platoon
- Operating model infrastructure
  - Electrification
  - Traffic control centers
  - Signalling systems
  - Datanetworks
  - Network of connected sensors
  - …

Source: Siemens