

# Digital Supply Chain

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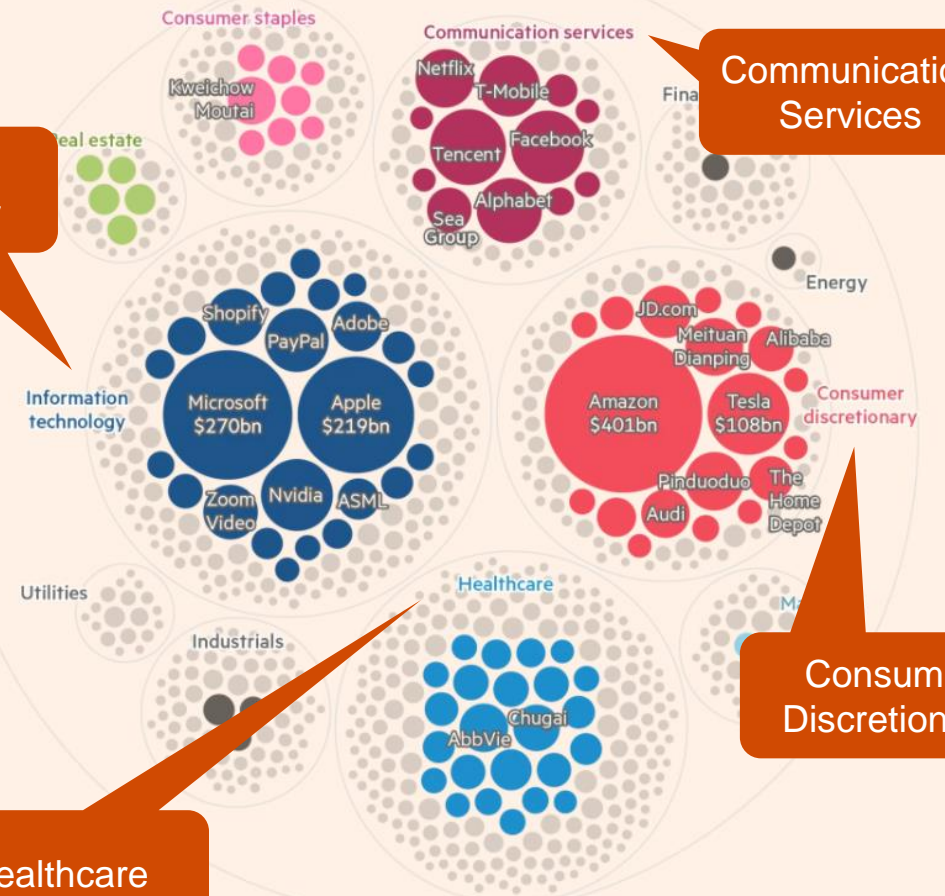


# COVID-19 impact: Economic Hardship and Winners

- The coronavirus (COVID-19) outbreak is **causing widespread concern and economic hardship** for consumers, businesses and communities across the globe
- Especially **supply chains are hit hard**: supply gaps, demand gaps, shut downs
- Many business are impacted negatively; however there also companies **that do better than ever**



Market Cap Added (Source: Financial Times June 19 2020)



## 1. Amazon

SECTOR: ECOMMERCE / HQ: SEATTLE, US

# \$401.1bn

Market cap added

**Key stat:** Amazon anticipates it could spend \$4bn to keep its logistics running during the coronavirus crisis

As world leaders ordered the indoors, Amazon became the emergency port of call for those desiring to stock up on vital household goods — a rush that led the company to temporarily shut its warehouses to “non-essential” products. Revenue followed, but also soaring costs. Chief executive Jeff Bezos warned that \$4bn could be spent on virus mitigation, such as testing labs and

cameras — Still, the acceleration of its cloud computing business to an all-time high

## 12. Netflix

SECTOR: MEDIA / HQ: LOS GATOS, US

# \$55.1bn

Market cap added

**Key stat:** 18% increase in revenue at the end of Q1, a 2% increase earlier.

Netflix added

as it had forecast in the first three months of the year, as the largest paid streaming service entertained global lockdown audiences with shows such as *Tiger King*, *La Casa de Papel* and *Love is Blind*. The biggest boost came from Europe, the Middle East and Africa, where it signed up nearly 7m subscribers in the first quarter. The company is enjoying a “perfect storm”, said Michael Nathanson, analyst at MoffettNathanson. “The longer the current situation lasts, the bigger the benefit to Netflix.” *Anna Nicolaou*

## 26. Roche

SECTOR: PHARMACEUTICALS / HQ: BASEL, SWITZERLAND

# \$27.1bn

Market cap added

**Key stat:** 100 per cent sensitivity — or the real number of positives Roche claims its own antibody test can detect 14 days after a positive PCR test.

Roche, which is one of the diagnostics “Big Four”, has also benefited from the rollout of its tests for coronavirus, which check for current and recent signs of infection through a process known as PCR and by checking for antibodies. Its high-throughput machines are used to quickly analyse samples. The Swiss drugmaker is also testing actemra, an anti-inflammatory drug, both on its own and in combination with Gilead’s remdesivir. *Mancini in London*

## 2. Microsoft

SECTOR: TECHNOLOGY / HQ: REDMOND, US

# \$269.9bn

Market cap added

**Key stat:** 75m people used the Teams communication app in a single day in April, up from 20m in late 2019.

Microsoft’s shift to the cloud under Satya Nadella for a world where large numbers of people are working from home as a communication app has become a way for businesses to connect. Azure cloud computing platform has become a digital backbone for many companies. Microsoft even saw a record 90m players turned to the Xbox Live service. *ard Waters in San Francisco*

## 36. Moderna

SECTOR: PHARMACEUTICALS / HQ: CAMBRIDGE, US

# \$18bn

Market cap added

**Key stat:** 30,000 participants are expected to enrol in the phase-three trial of its Covid-19 vaccine candidate.

Moderna was the first US company to get a potential coronavirus vaccine to human trial. Just 42 days after it received the genetic sequence of the virus, Moderna had a vaccine in vials ready to test. Its messenger RNA technology allows it to be super speedy — but no vaccine using it has ever been approved by a regulator. *Hannah Kuchler*

# Lucky Winners and Masters in Managing Change

“Part of the winners just have been lucky to be in the **right market place at the right time**, but the **true winners** are the ones that were able to adapt themselves to the new circumstances”



## Press release

Amsterdam, 4 August 2020

### JDE Peet's reports strong half-year 2020 results

*Strong performance reflects resilience of business and brands*

- Record in-home (CPG) sales growth driven by developed markets
- CPG performance largely offsets away-from-home
- Good recovery in away-from-home starting in June
- Adjusted EBIT organic growth of 10.5% to EUR 642 million
- Underlying profit increased by 12.0%; underlying EPS of EUR 0.79<sup>1</sup>

**Masters in Redirecting Supply Chain**

**Masters in Innovation**

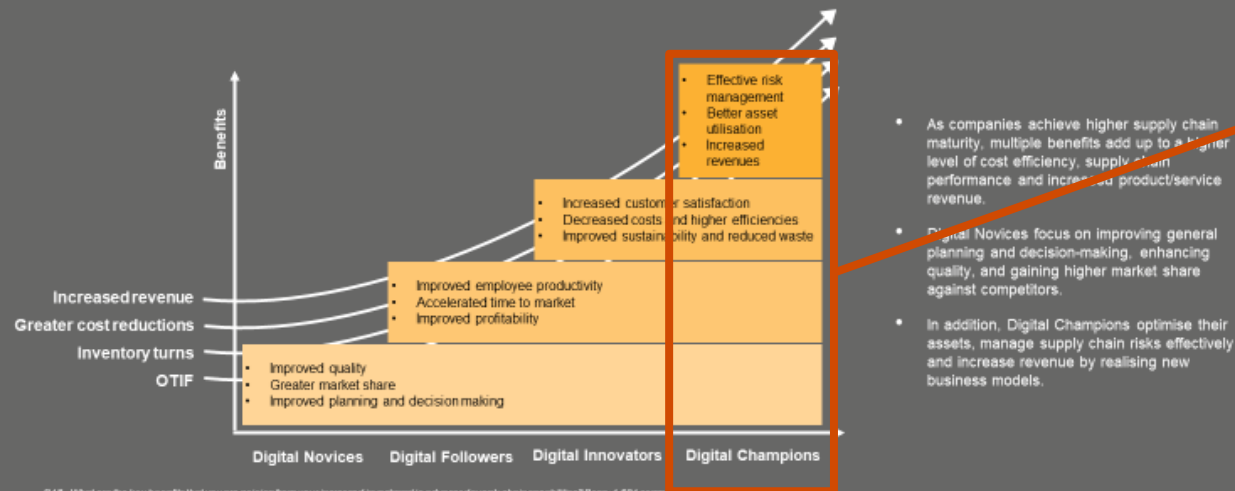
Masters in managing change ...

- ... were able to **innovate**: adjusted/introduced products to deal with the new circumstances
- ... where able to **redirect products** to other markets/segments
- ... changed **channels** in case demand dropped
- ... changed **suppliers** in case supply fell out

Underneath the change capability **technology is an eminent factor** (as a means or as an prerequisite)

# Digital Advanced: Better Performance and More Flexibility

Advanced supply chain capabilities cumulate to significant qualitative and quantitative benefits



Besides lower cost base and additional revenue potential, **Digital Champions** have higher supply chain visibility and more effective risk management capabilities

Leading companies go beyond functional efficiency towards an **end-to-end orchestrated supply chain ecosystem**

~8%

Additional revenue from SC investments reached 7,7% during the last financial year

~7%

Digital Champions achieved significant savings of 6.8% on supply chain costs in the last financial year

<https://www.pwc.com/digitalsupplychain>

# Poll time

What did COVID-19 mean for your digital agenda?

- a) It accelerated my digital agenda
- b) It made me reprioritize initiatives within my digital agenda
- c) It did deprioritize my digital agenda
- d) It did nothing to my digital plan

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# Technology Deep Dives: the 4 Winning Capabilities



**Supply chain transparency** makes it possible for companies to track what is actually happening across the supply chain ecosystem, enabling proactive orchestration through alerts, seamless collaboration based on end-to-end workflows and automated decisions.



A volatile global market environment, increasing competition and the need for reduction in cost and environmental impact are a few of the reasons that lead companies to seek more responsive and integrated operations. **Advanced planning** approaches have proven to be an effective building block.



Logistics - managing and executing the physical flow of goods from the point of origin to the point of consumption - is an essential part of the supply chain. **“Smart logistics”** connects suppliers, manufacturers, carriers and customers interactively, building on supply chain transparency and integrated planning.



**Dynamic supply chain segmentation** is the design and operation of distinctly different end-to-end value chains from suppliers to customers. Relevant attributes of customer value, product, manufacturing and supply capabilities determine the configuration of the Supply Chain.



# Supply chain transparency sets the stage and is a catalyst for greater sustainability

Technology is a key enabler to gain supply chain transparency

# 72%

Technology is a key enabler, Digital Champions are way ahead in this race. 72% of Digital Champions have implemented technologies to gain transparency across their supply chain compared to only 13% of Digital Novices.

## Technology choices

- When implementing supply chain transparency and control tower solutions, 87% of Digital Champions and 76% of all companies rely on **standard software solutions** – the highest share of standard solution usage across all supply chain technologies.
- Almost **all Digital Champions (97%) have already made a technology vendor decision**, compared to 84% of all companies.
- From all companies that already made a decision, **84% work with SAP, E2open, Infor Nexus, JDA or One Network.**

# 32%



Investing into supply chain transparency also sets the foundation to get a better handle on achieving a circular and sustainable supply chain – which is the top supply chain challenge for Digital Champions (32%) over the next 5 years.



Company A - Leading manufacturer of measuring instruments and automatic test equipment for the semiconductor industry



## Company A is living the connected enterprise and integrating suppliers and customers

The manufacturing network includes close collaboration with contract manufacturers for key product lines. These partnerships give the company a high level of flexibility, so it can manage growth and adjust to market volatility when needed.

By digitalising its supply chain, Company A is achieving a high level of transparency, both across functions within the company, and with value chain partners. That helps Company A make sure it has sufficient capacity to provide its customers with the right technical performance and required yield.

Company A integrates product design with supply chain management (SCM) -- "Design for SCM." New products are designed in a systematic way, using a modular approach, with common platforms, modules and components.

Company A optimises inventory planning by integrating demand and supply planning, including close connections with contract manufacturers. That helps the company achieve a strong level of delivery reliability, even for highly customised products.



**Next-level planning** is synchronised in near real-time with execution, integrates value chain partners and enables continuous optimisation

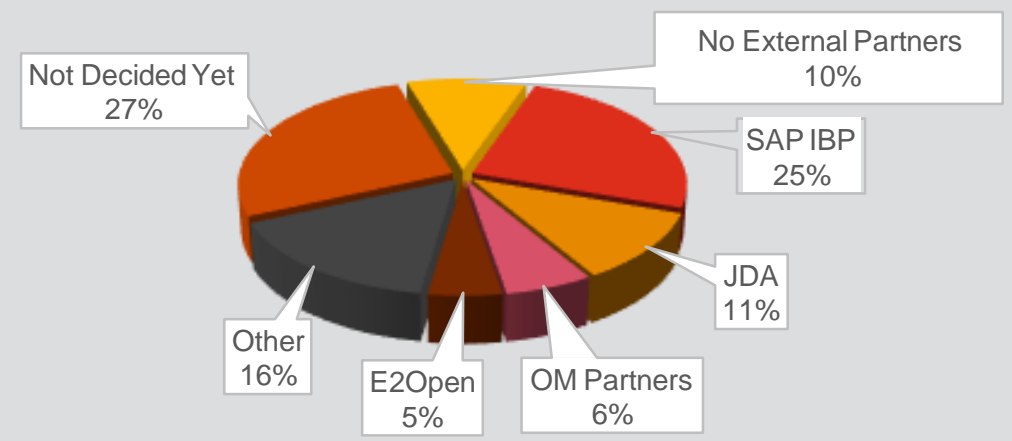


Technology is a key enabler for integrated planning

**70%**  
Technology is a key enabler, and Digital Champions are way ahead in this race. 70% of Digital Champions have implemented technologies to enable their end-to-end supply chain planning

**Technology choices**

When implementing integrated planning solutions, 83% of Digital Champions and 63% of all companies rely on standard software solutions. Almost all Digital Champions (96%) have already made a technology vendor decision compared to 73% of all companies. Of those companies that have already made a decision, 73% work with SAP, JDA, Kinaxis or OM Partners





## Company B is driving innovative business models through next-level supply chains

Back in 2009, Company B began allowing customers to log in online and initiate the production process digitally. In 2015, the company started inscribing a unique data matrix product code on every part – similar to a three-dimensional QR code – using Company B’s laser marking machines to make re-ordering and identification easier. And since 2017, customers have been able to photograph the code with the Company B service app and place an order simply by uploading the image.

Each order triggers the company’s semi-autonomous production system, which independently determines the priority of each order and automatically assigns it to the right machine with open capacity – under the surveillance of the plant employees. These enhancements have significantly improved supply chain performance. In comparison with 2009, the company has reduced its throughput time from four days to just four hours, doubling capacity and at the same time increasing the service level from 40% to 97%. Orders placed by 2pm are produced and shipped on the same day. The goal: provide service to industrial customers for make-to-order parts comparable (or even superior) to what Amazon offers its shoppers.

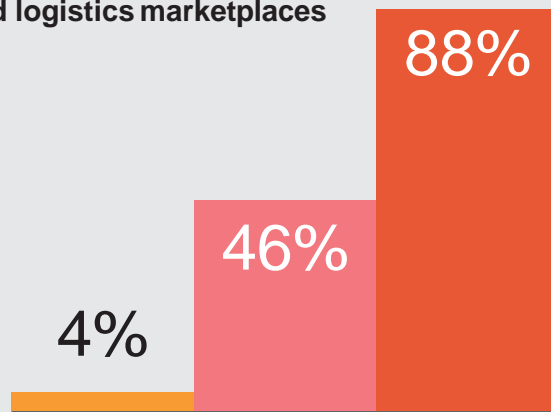
Company B’s innovations are increasing transparency: the data matrix product code Company B inscribed on each part enables end-to-end traceability. And they are driving enhanced after-service performance as well, by making it possible to monitor a tool’s usage remotely.



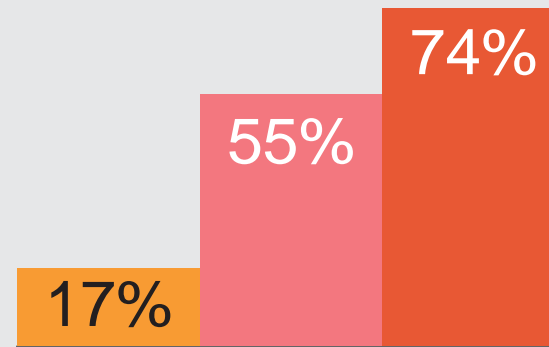
# Smart logistics is the key savings driver and a growth lever in the connected supply chain ecosystem

The right technologies are key for becoming a smart logistics Champion

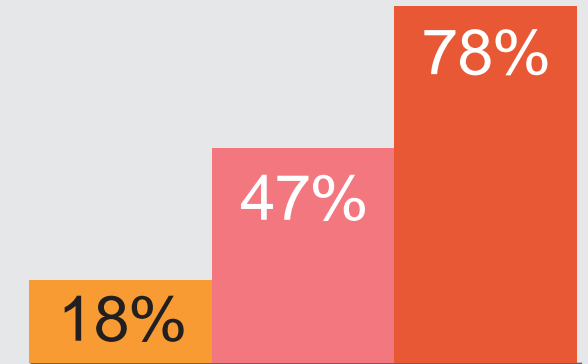
Transport management systems (TMS) and logistics marketplaces



Warehouse management systems (WMS)



Integration with CRM systems



- For TMS, most Digital Champions rely on standard software (71%) while nearly every second Digital Champion's WMS is a solution developed in house developed (42%).
- Learnings from the Digital Champions: IT maturity and reliability of master data is among the major challenges Digital Champions are experiencing along their way.

# 88%

of Digital Champions use Transportation Management Systems and logistics marketplaces, but only 4% of Digital Novices do so. There is a significant "digital gap" between maturity stages



The right technologies are key. In order to implement next level logistics, Digital Champions excel at implementing and integrating advanced technologies in smart logistics



## Company C is building up a conscious supply chain ecosystem (incl. factory, warehouse and distribution)

Company C is creating an end-to-end supply chain ecosystem, by integrating suppliers, carriers and customers and ensuring end-to-end process visibility and traceability. To develop and continuously enhance the “Future Eye” vision, a close cooperation among supply chain, RandD, production and sales is key to capture improvement potentials, validate customer requirements and identify new business opportunities.

**Conscious factory:** By adding sensors to factories and connecting manufacturing and logistics assets, Company C is making it possible to gain visibility of activities in real-time.

Factory-in-a-box is a container-based portable factory line that is highly automated and includes a digital twin. It can be deployed anywhere around the world and set up in hours.

**Conscious warehouse:** Communication technology is the backbone for Company C’s “conscious warehouse” and makes it possible to connect the entire warehouse with smart devices. A “warehouse-in-a-box” solution, that will allow companies to flexibly place smaller, digitally enabled warehouses closer to customers, to support specific country and project needs.

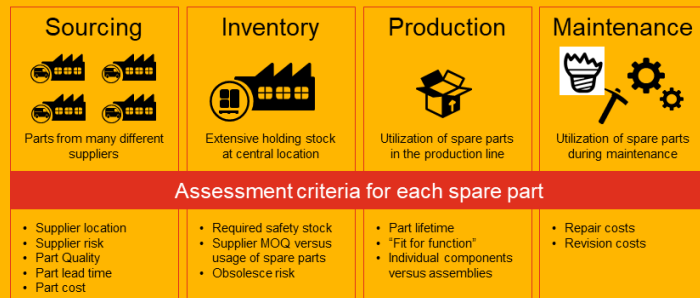
**Conscious distribution:** Allows real-time shipment monitoring and enables dynamic routing so Company C can react faster to changing conditions

# Business case of 3D-printing in the spare-part supply chain for an electronic parts manufacturer

## Context

### Business challenges

- Our client has a huge portfolio of > 46.000 sku's to keep the manufacturing site operational.
- The working capital locked in the spare part inventory is ~ 7% of annual revenue
- The yearly repair and maintenance budget is ~ 4% of annual revenue
- As the long term volumes on the machines will be reduced, obsolete costs need to be managed properly



## Approach

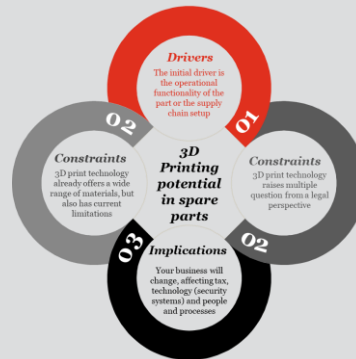
### Goal

- We investigated the business potential of 3D printing in the overall spare part supply chain

### 1. Long term potential

### 2. Short term potential

### 3. Things to consider



### Long-term potential assessment

- Screening and filtering of the spare part portfolio with relevant criteria

### Short-term potential assessment

- Proof of concept implementation: we selected 5 individual spare parts and redesigned, printed and evaluated the outcome

## Results

### Long-term potential

- We identified 9% of the total spare part portfolio to have beneficial characteristics to consider 3D printing, representing 18% of inventory value
- We listed potential next steps, and indicated potential roadblocks for implementation (legal, tax, technology, HR)

### Short-term potential

- For the 5 selected parts, we were able to reduce yearly OPEX costs with 30 %, as a result of 3D printing. (improved design – SC benefits)



# Dynamic supply chain segmentation

enhances customer centricity and continuously balances service levels, costs and margins

Digital Champions have begun to transform their supply chains towards dynamic segments, flexibly tailored to customer needs and individual transactions



- One set of standardised processes across all businesses
- “Average fit” to business requirements with average service level

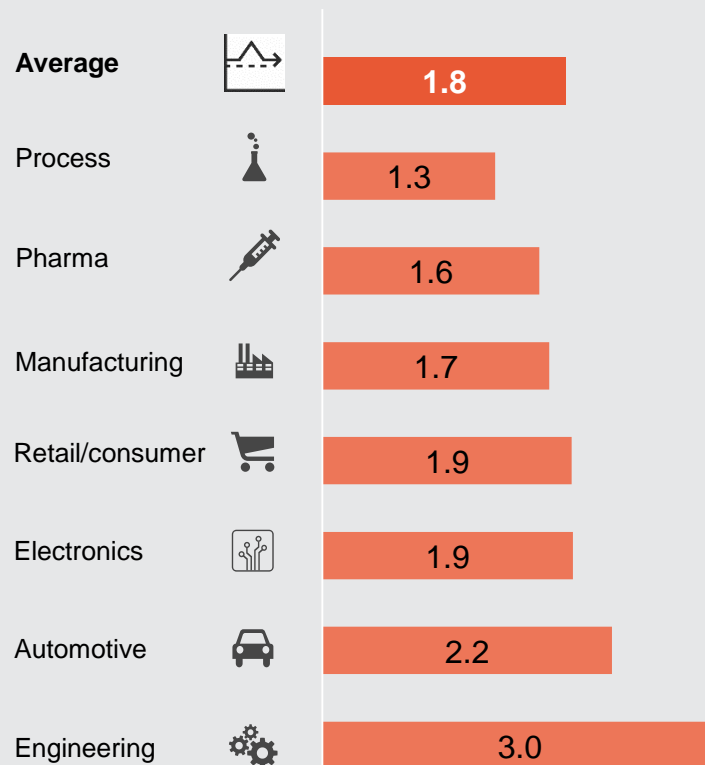
- Pre-defined set of processes along the supply chain with dominant archetypes
- Flexible and dynamic combination of pre-sets to supply chain segments
- Best fit supply chain setup for diverse and changing business requirements

# The average payback period of investments into supply chain capabilities is less than 2 years

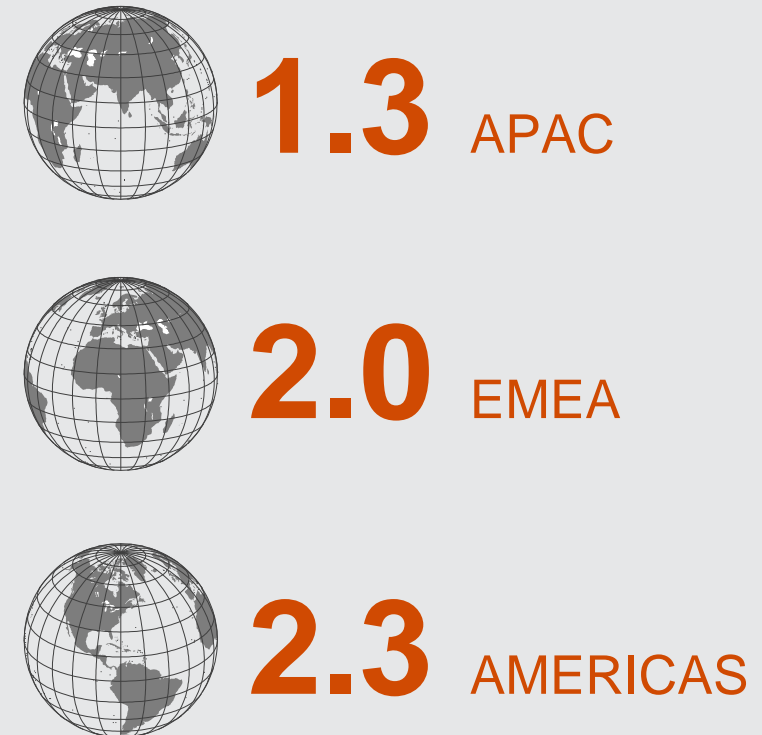
# 1.8

The payback period (in years) of investing into advanced supply chain capabilities is on average less than two years.

### Payback period (in years) by industry sector



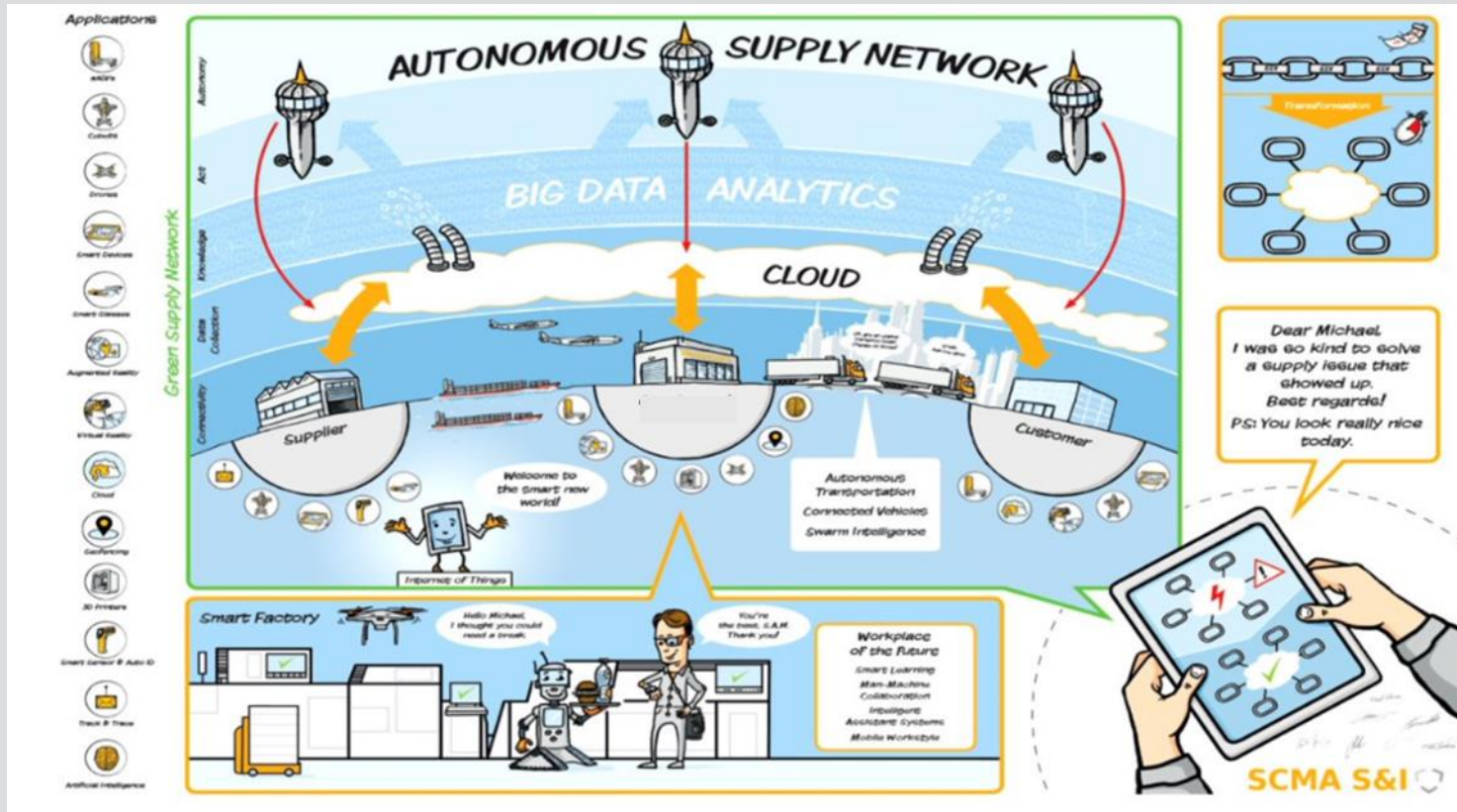
### Payback period (in years) by region





# Digitalization in Supply Chain starts with a Vision

Example of implementing a digital vision of a global automotive supplier



The digital solutions the client implemented that were beneficial during first stage of COVID-19 period:

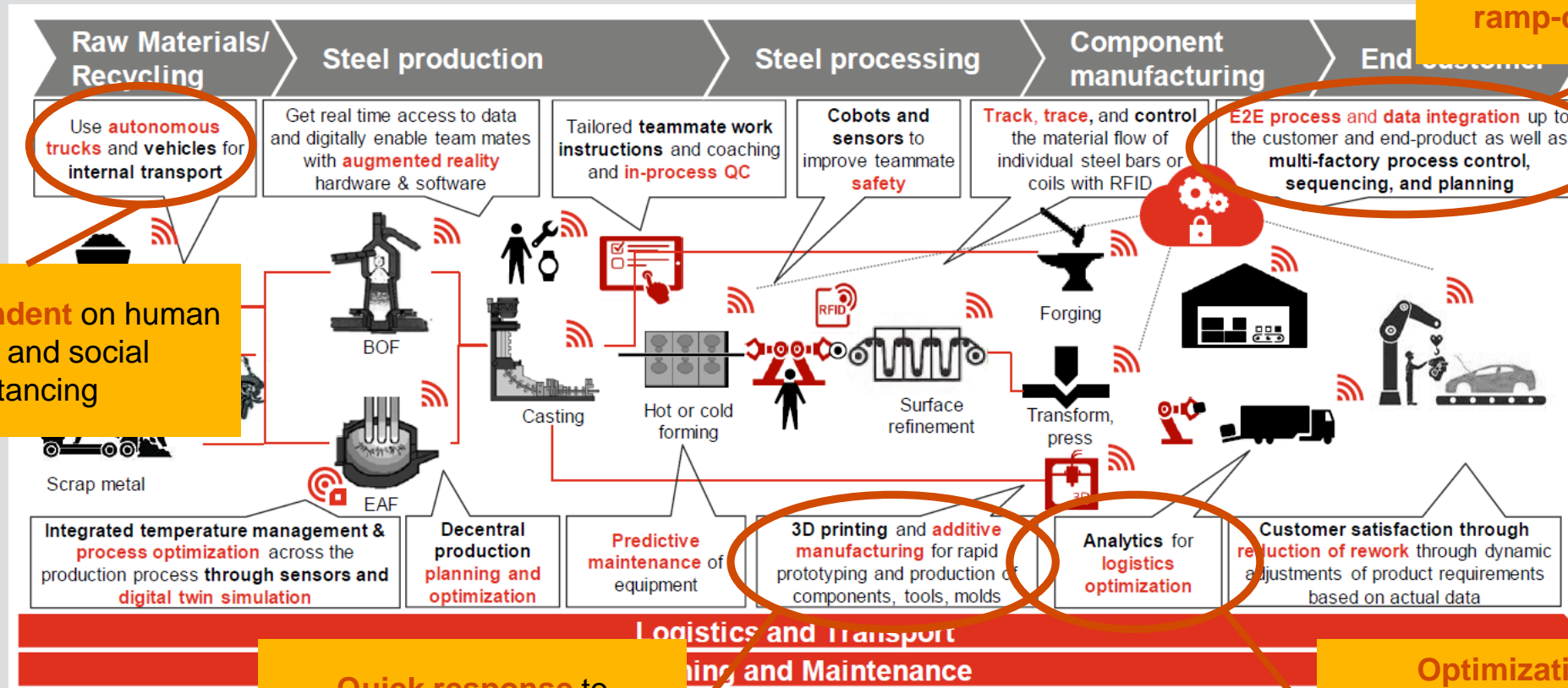
- More than 200 autonomous **AGV** and 2000 **cobots**
- Automated line replenishment based on **AI algorithms**
- **Dock and yard management system** which allows social distancing to truck driver
- Large project to **harmonize SAP**
- **Digital twins** to model ramp-up phase after shut down

What the client learned from COVID-19 and will implement:

- **Geolocation** to ensure social distancing
- More **transparent supply network**

# Digital Capabilities in the Production Arena

Example of digital solutions within a steel production company



Beneficial to connect on planning of **ramp-up or ramp-down** scenarios

Less dependent on human factors and social distancing

Quick response to changes in customer demand

Optimization of distribution, even after changed production pace or shifted customer demand

# Conclusion Digital Supply Chain

- The COVID-19 pandemic ushered in turbulence and rapid, daunting change
- Impact on supply chain force companies to **respond to the new circumstances**: adjust to remote working, shift supply chain footprints and accelerate the use of digital technology
- We learned that companies with **high digital maturity are performing better and are less vulnerable** to disruptions like COVID-19. Especially companies that have built their future supply chain around 4 main Supply Chain capabilities:
  - **Supply chain transparency**
  - **Advanced planning**
  - **Smart logistics**
  - **Dynamic supply chain segmentation**
- **Digitalization is key** to build and maintain these Supply Chain capabilities
- Investing in the right advanced supply chain capabilities **will pay off**

# Poll time

What are the main obstacles you foresee in realizing your current digital priorities (in supply chain)

- a) Budget
- b) Time
- c) Other priorities than supply chain in the company's digital agenda
- d) I do not face any obstacles

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