Digital Supply Chains:
Hints from leading consulting companies

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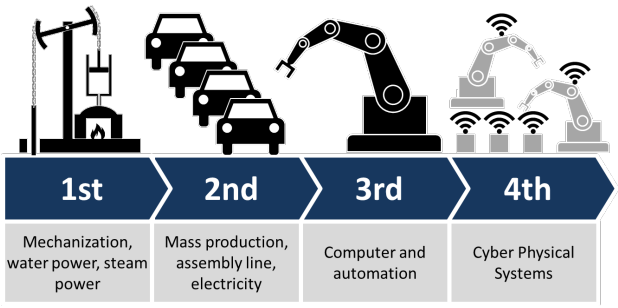
Agenda

- Industry 4.0 and Digital Supply Chain
- Digital vs. traditional supply chains
- Digital Procurement

Industry 4.0

The Digital Supply Chain is part of Industry 4.0

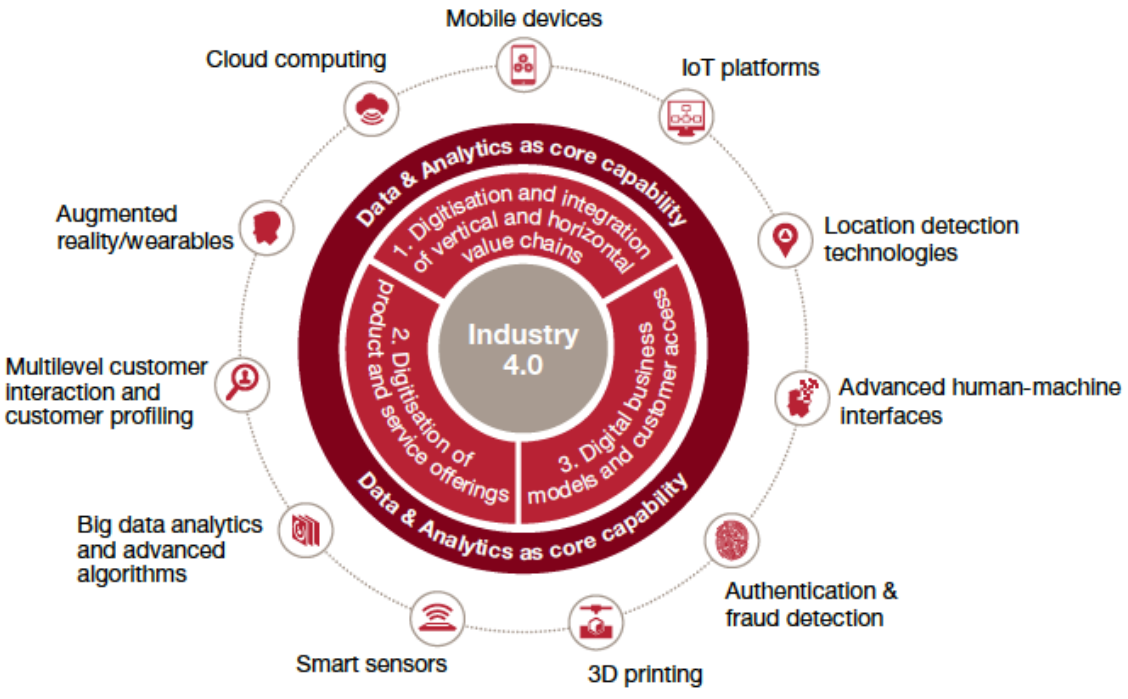


Source: *Christoph Roser at All AboutLean.com; Accenture Industria 4.0*

	Time periods	Technologies and capabilities
First	1784-mid 19th century	Water- and steam-powered mechanical manufacturing
Second	Late 19th century -1970s	Electric-powered mass production based on the division of labour (assembly line)
Third	1970s-Today	Electronics and information technology drives new levels of automation of complex tasks
Fourth	Today-	Sensor technology, interconnectivity and data analysis allow mass customisation, integration of value chains and greater efficiency

Source: *EU – Industry 4.0: Digitalization for productivity and and growth*

Industry 4.0 characteristics & technologies



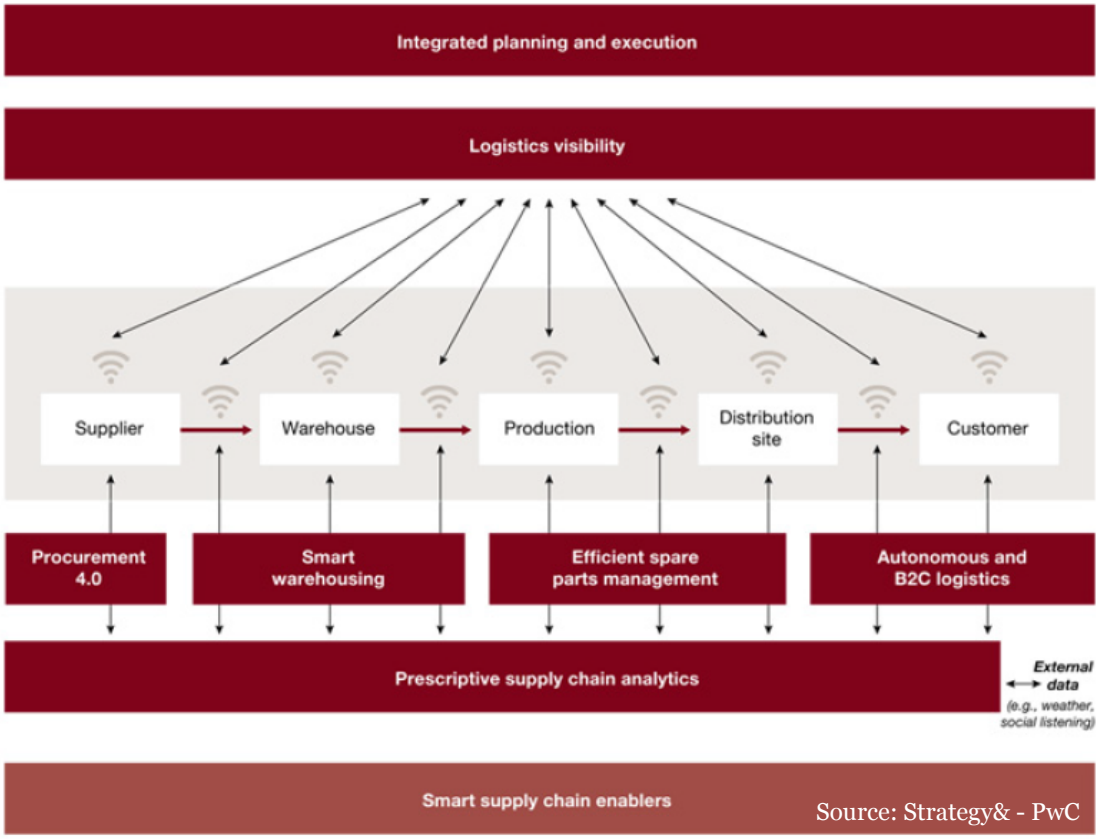
Source: PwC

Traditional vs. Digital supply chain

	Traditional	Digital
Transparency	Limited view of supply chain	Complete view of supply chain
Communication	Information delayed as it moves through each organization	Information available to all supply chain members simultaneously
Collaboration	Limited visibility to the entire chain, hindering meaningful collaboration	Natural development of collaboration depth to capture intrinsic supply chain value
Flexibility	End customer demand distorted as information flows along the material path	End customer demand changes are rapidly assessed
Responsiveness	Different planning cycles resulting in delays and unsynchronized responses across multiple tiers	Real-time response on planning and execution level (across all tiers to demand changes)

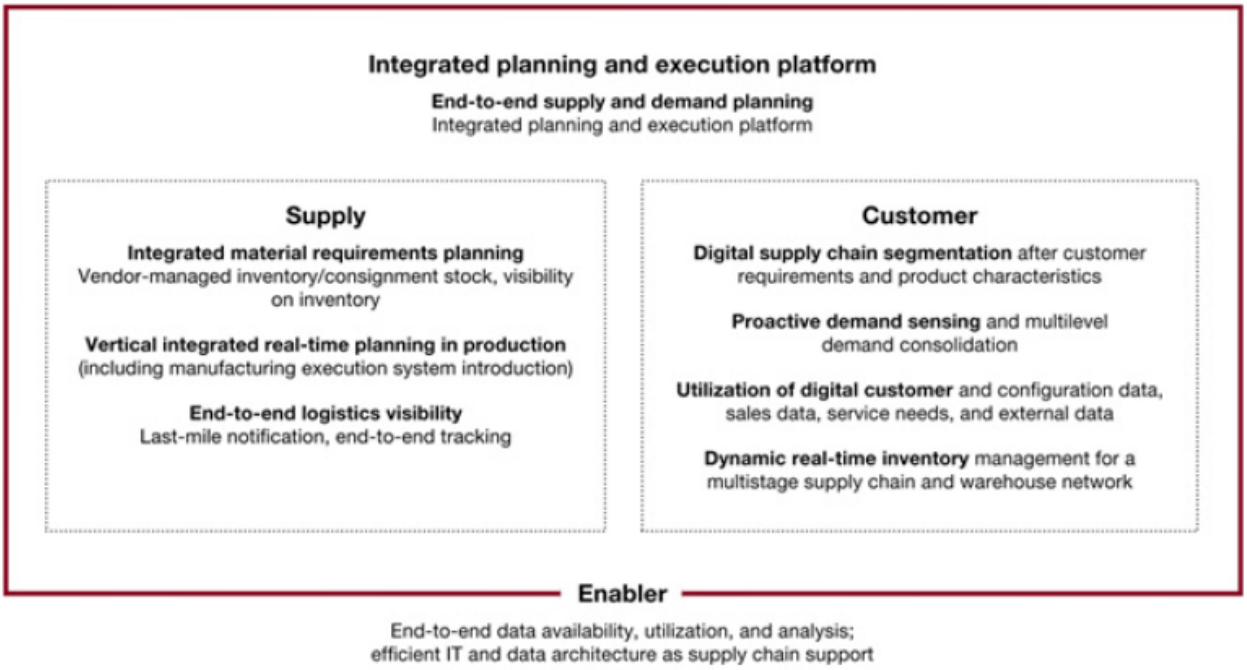
Source: Strategy& - PwC

Elements of a Digital Supply Chain



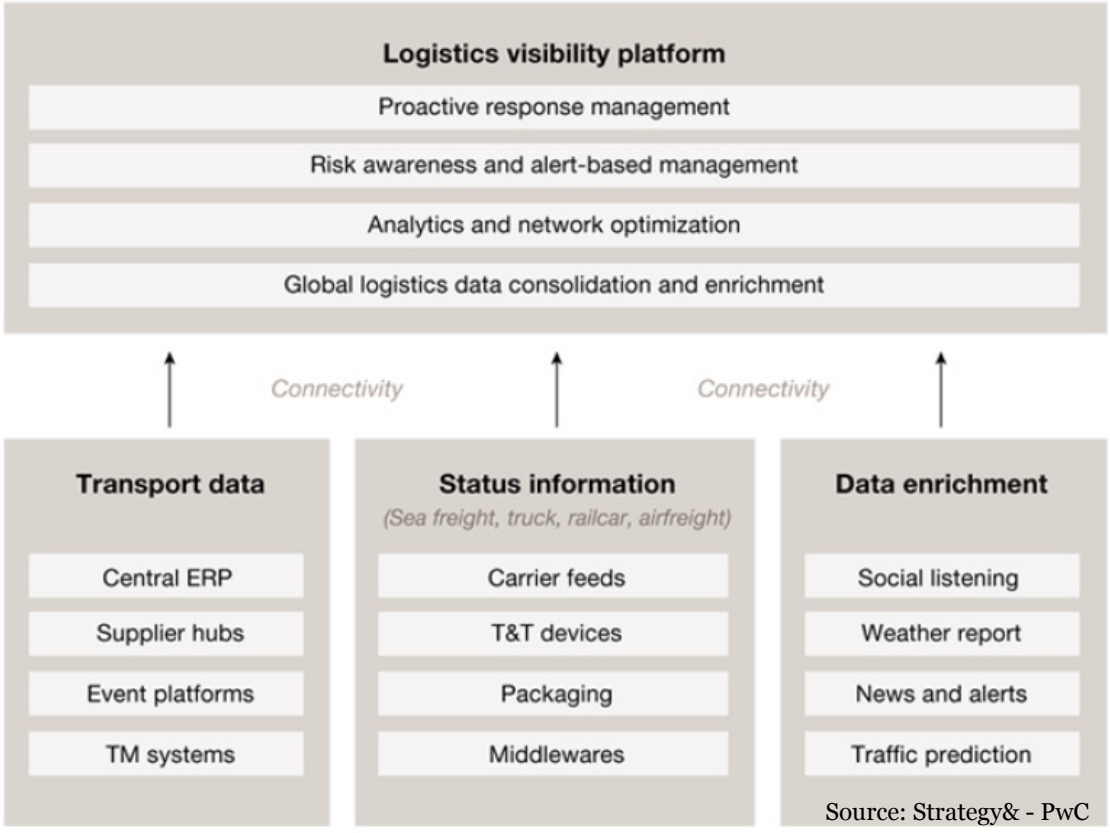
Source: Strategy& - PwC

Integrated planning & execution



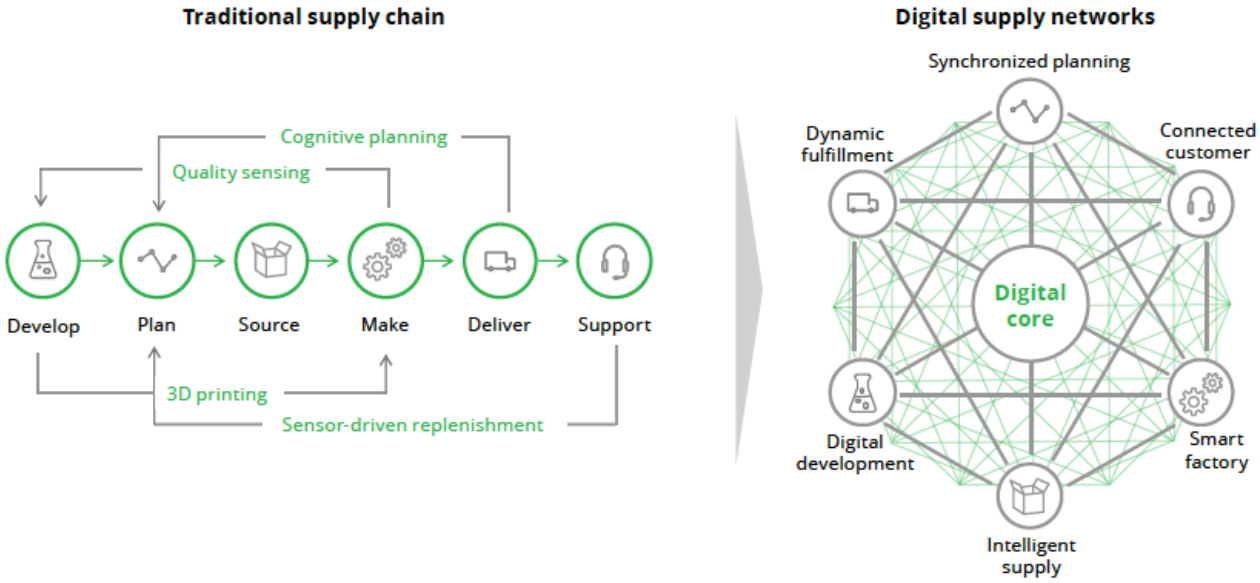
Source: Strategy& - PwC

Logistics visibility



Source: Strategy& - PwC

Traditional vs. Digital supply chain



Source: Deloitte

Elements of a Digital Supply Chain

"Always-on" agility

Securely, DSNs pull together traditional data sets with new data sets that are, for example:
- Sensor-based
- Location-based
- "Right-time" vs. "real-time"

Outcome: Rapid, no-latency responses to changing network conditions and unforeseen situations

Connected community

Real-time, seamless, multimodal communication and collaboration across the value network with:
- Suppliers
- Partners
- Customers

Outcome: Network-wide insights from centralized, standardized, synchronized data

Intelligent optimization

A closed loop of learning is created by combining:
- Humans
- Machines
- Data-driven analytics
- Predictive insights
- Proactive action

Outcome: Optimized human-machine decision making for spot solutions

End-to-end transparency

Use of sensors and location-based services provides:
- Material flow tracking
- Schedule synchronization
- Balance of supply and demand
- Financial benefits

Outcome: Improved visibility into critical aspects of the supply network

Holistic decision making

Based on contextually relevant information, functional silos are now transparent and deliver parallel visibility, such as:
- Performance optimization
- Financial objectives
- Trade-offs

Outcome: Better decision making for the network as a whole

Implications

Companies can achieve new levels of performance, improve operational efficiency and effectiveness, and **create new revenue opportunities**

As companies leverage their full supply networks, the **traditional barriers of time and space shrink**

Source: Deloitte analysis.

Examples of Digital Supply Chain driven changes

Planning & inventory efficiency:

- Analytics-driven demand sensing
- Dynamic inventory fulfillment
- POS driven auto-replenishment
- Real-time inventory optimization
- Sensor-driven forecasting

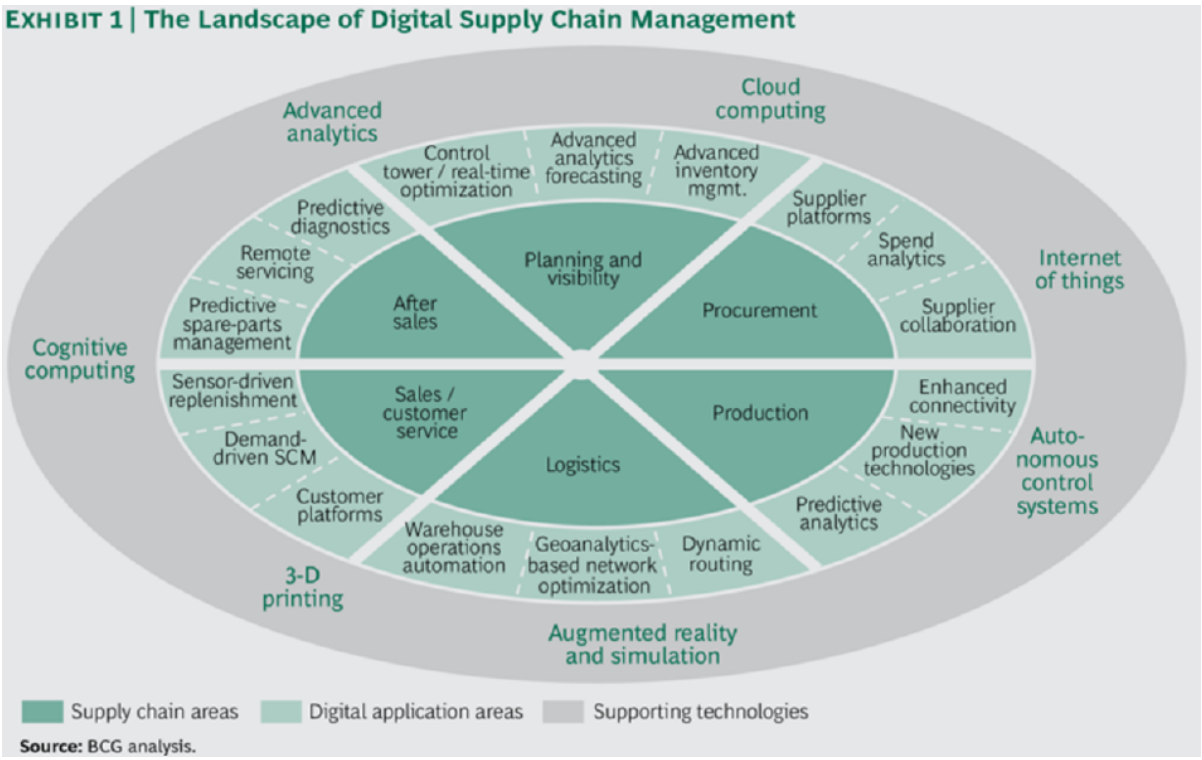
Supplier collaboration

- Analytics-driven sourcing
- Asset sharing
- Blockchain-enabled transparency
- Cloud/control tower optimization
- Supplier ecosystem

Logistics optimization

- Augmented reality-enhanced logistics
- Automated logistics
- Direct-to-user delivery
- Driverless trucks
- Dynamic/predictive routing

Digital Supply Chain Management



Source: BCG

Digital applications area

Planning and visibility:

- Control tower/real-time optimization
- Advanced analytics forecasting
- Advanced inventory management

Sales/customer service:

- Sensor-driven replenishment
- Demand-driven SCM
- Customer platforms

After sales:

- Predictive diagnostics
- Remote servicing
- Predictive Spare-parts management

Source: BCG

Digital applications area

Procurement:

- Supplier platforms
- Spend analytics
- Supplier collaboration

Production:

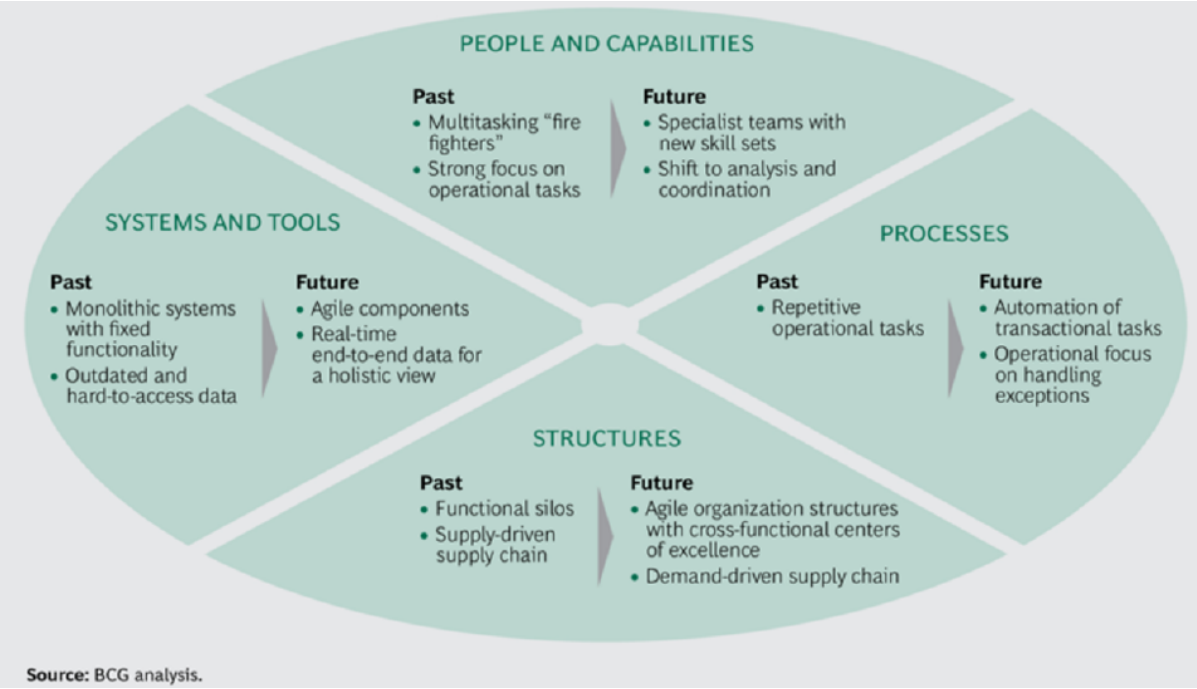
- Enhanced connectivity
- New production technologies
- Predictive analytics

Logistics:

- Warehouse operations automation
- Geoanalytics-based network optimization
- Dynamic routing

Source: BCG

Investments for Digital Supply Chain Management

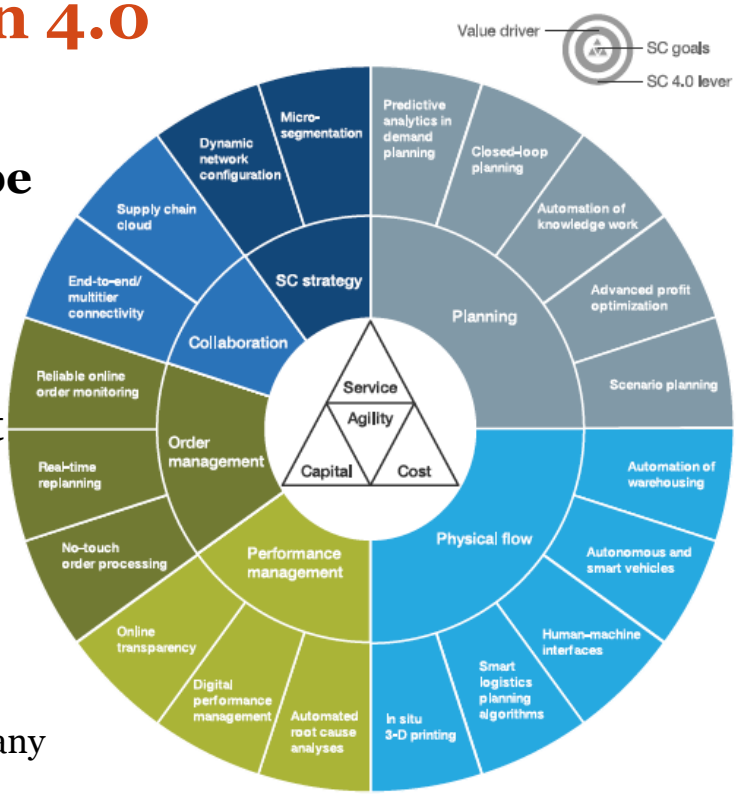


Source: BCG

Supply Chain 4.0

Key processes to be improved:

- Planning
- Physical Flow
- Performance mgmt
- Order mgmt
- Collaboration
- SC Strategy

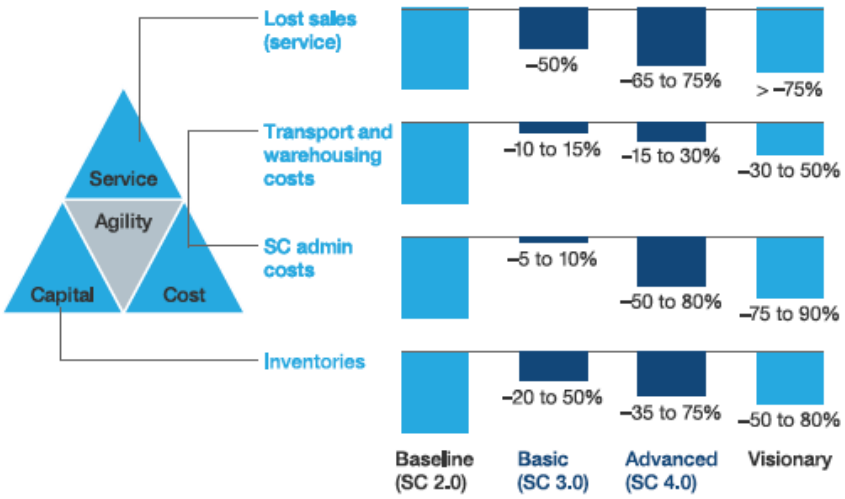


Source: McKinsey & Company

Supply Chain 4.0

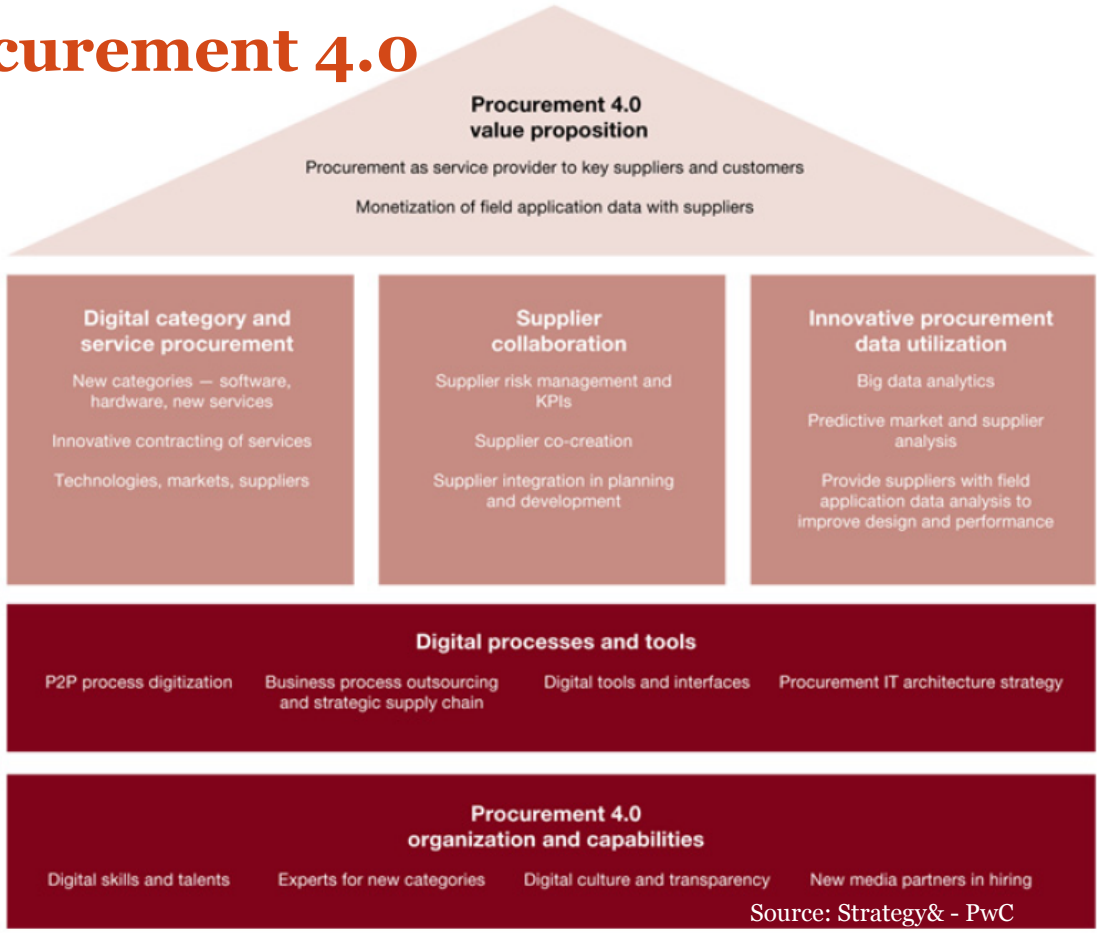
Key areas for improvement:

- Service
- Costs
  - Transportation
  - Warehouse
  - Administration
- Inventories



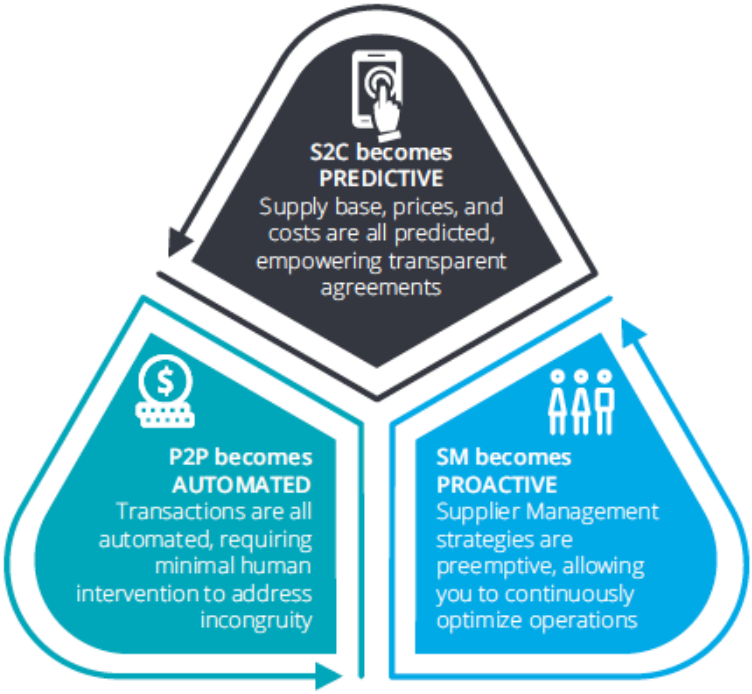
Source: McKinsey & Company

Procurement 4.0



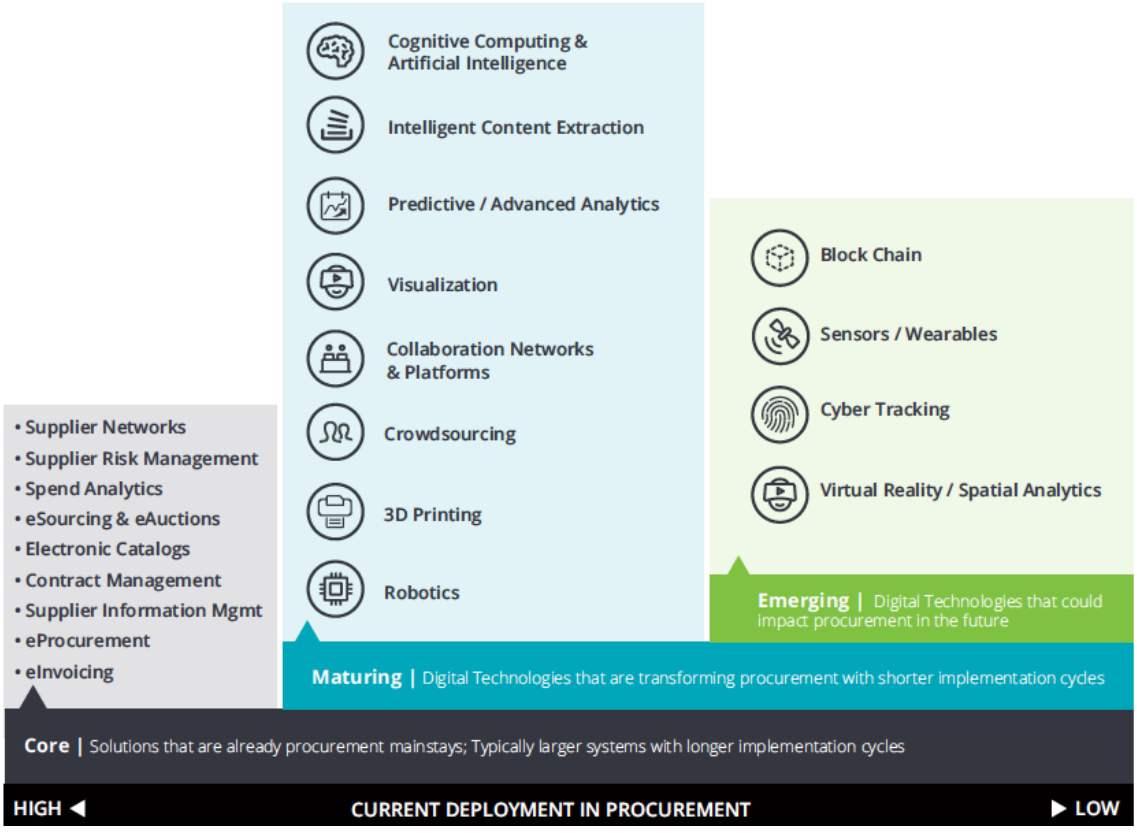
Source: Strategy& - PwC

Digital Procurement

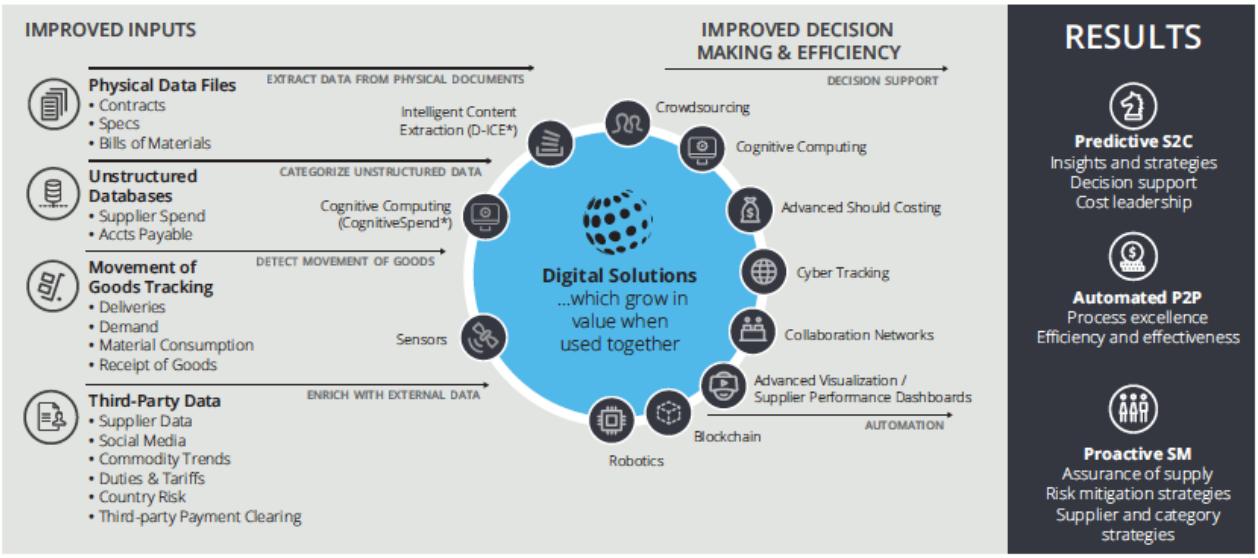


Source: Deloitte

Digital Procurement stages



Digital Procurement results



Source: Deloitte