

Supply chain transformation in the era of Industry 4.0

Opportunities and challenges

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Industry 4.0 – Industrie 4.0 – the 4th Industrial Revolution

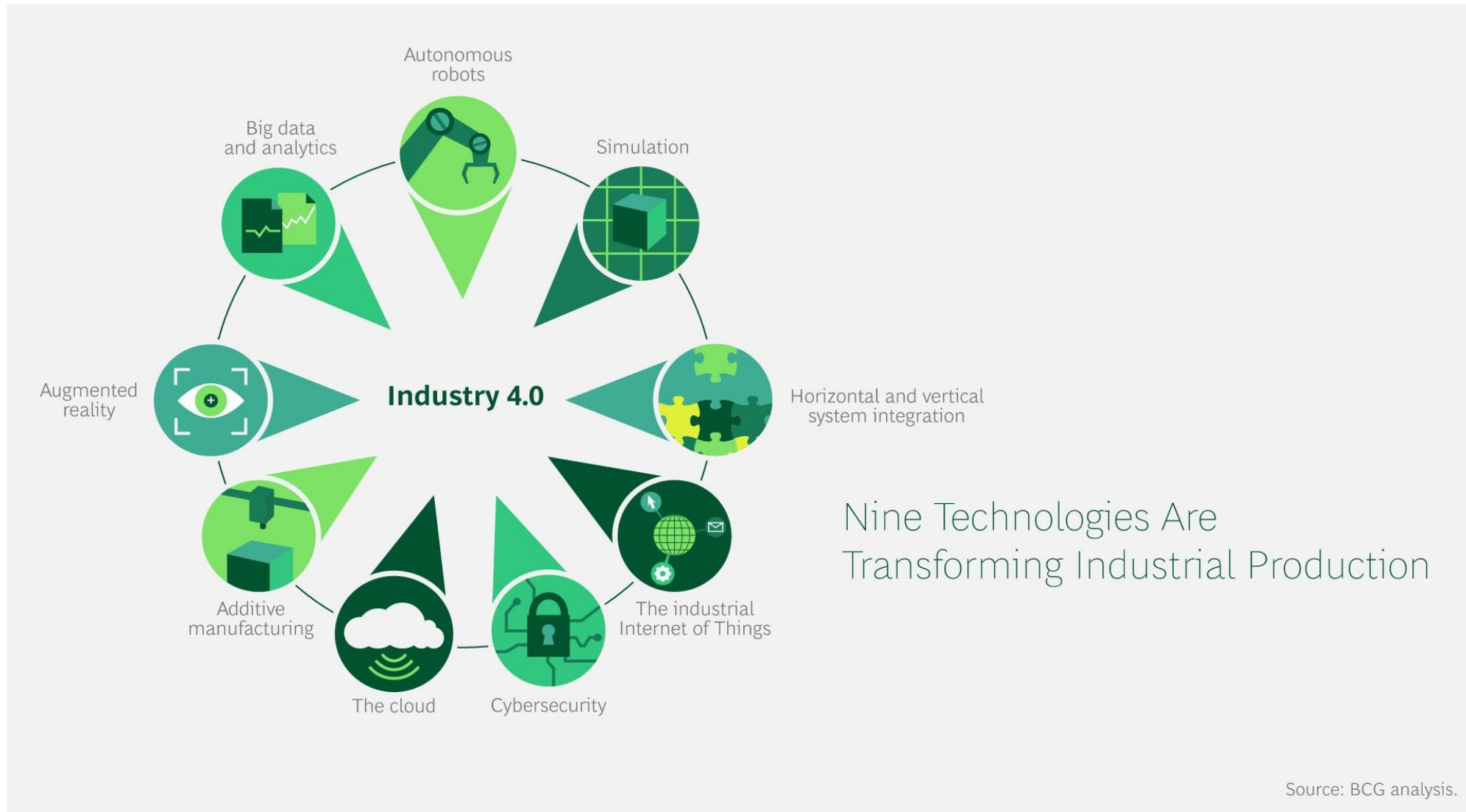
DEFINITION...

WIKIPEDIA

Industry 4.0 is a name for the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing.

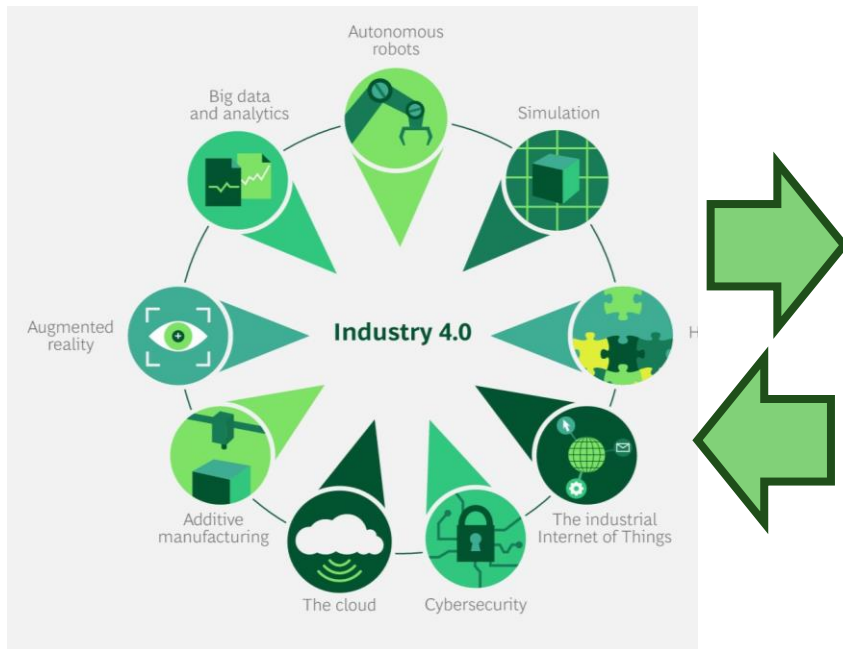
Industry 4.0 creates what has been called a "smart factory".

Industry 4.0 – enabling technologies

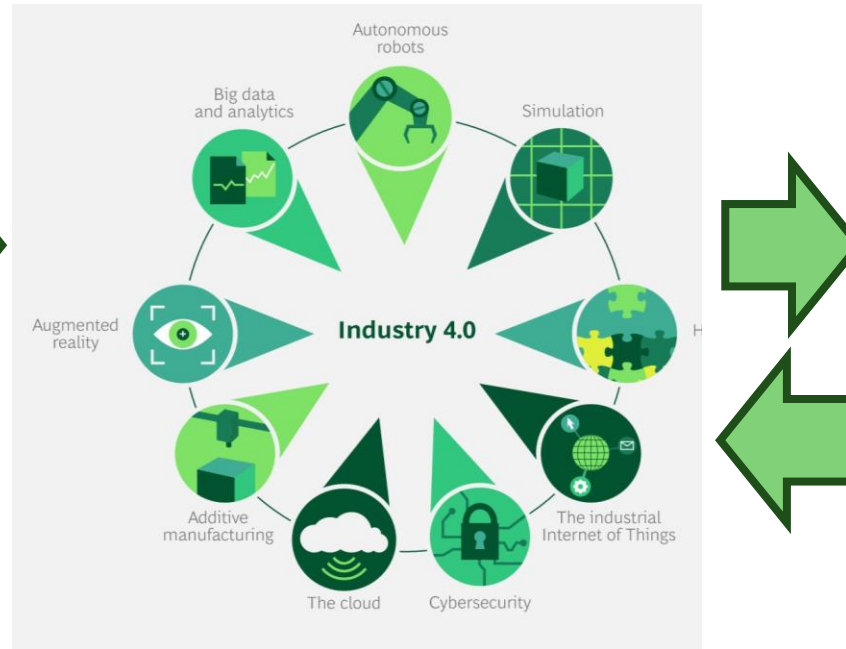


Connected Industry 4.0 – The ultimate goal

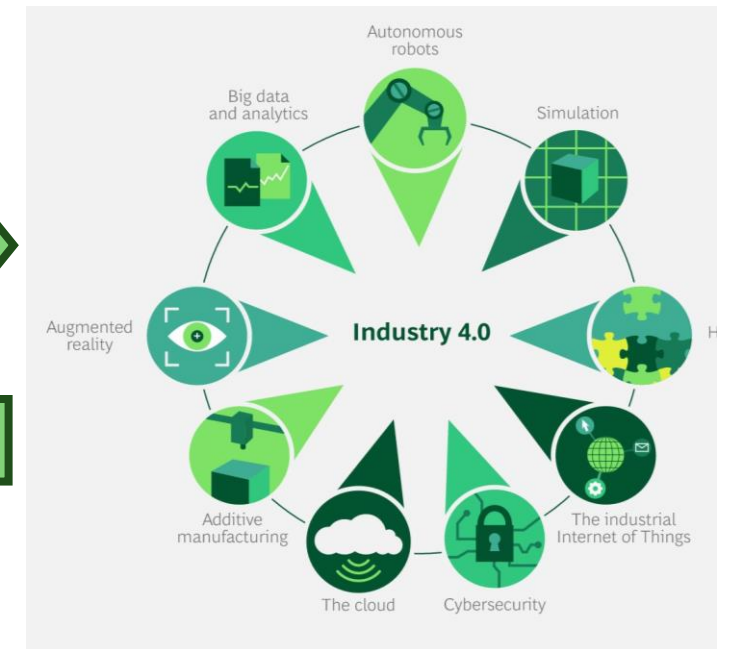
suppliers



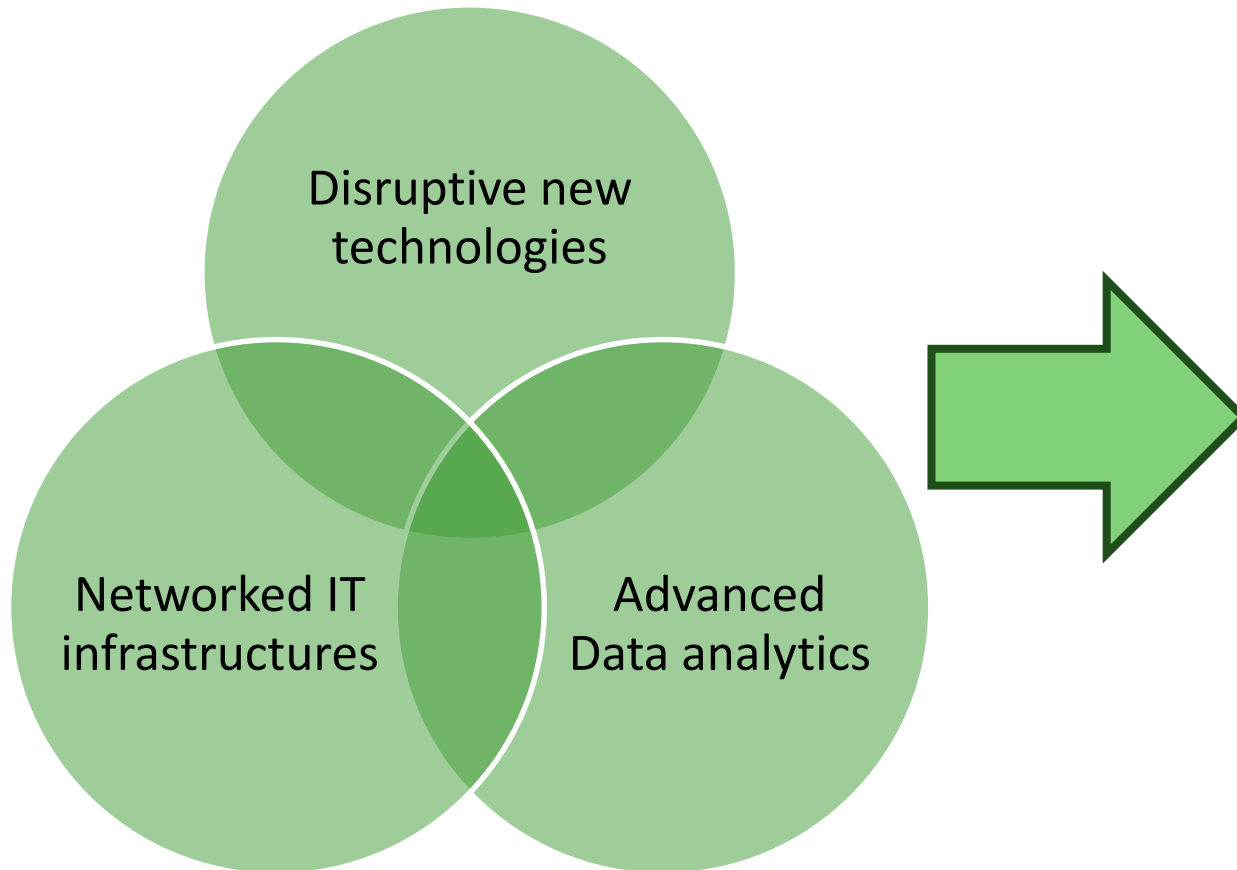
Internal



Customers



Connected Industry 4.0.....



The Digital Supply chain...

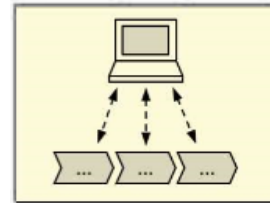
- Highly connected
- Flexible
- Efficient
- Resilient
- Responsive to customer needs

Digital Supply Chain framework – creating end to end visibility

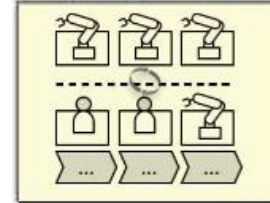
2. Digital Factory Design



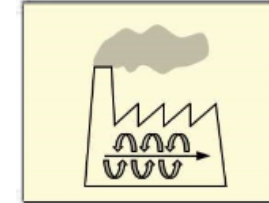
3. Real-time Factory Scheduling



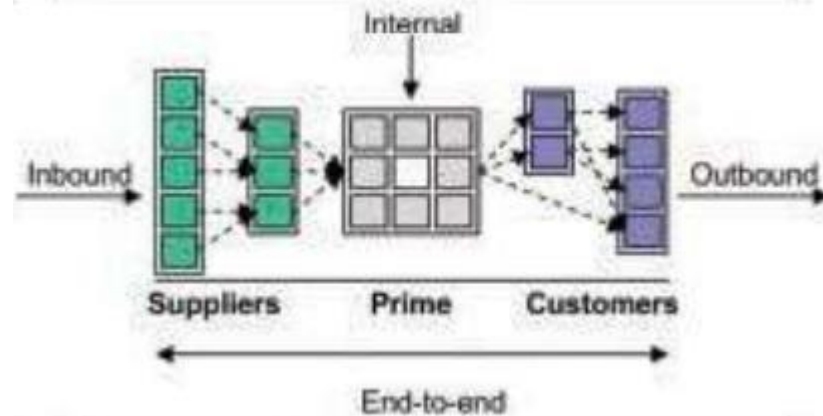
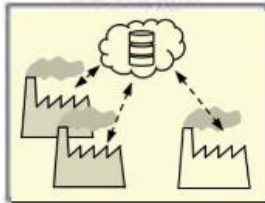
4. Flexible Factory Automation



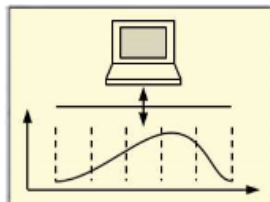
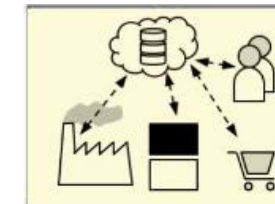
5. Digital Production Processes



1. Automated e-Sourcing



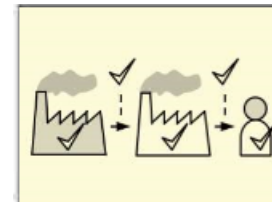
6. e-Commerce Fulfilment



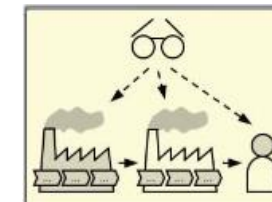
10. Product Lifecycle Management



9. Digital Supply Network Design



8. Digital Product Quality



7. Extended Supply Chain (near) real-time Monitoring

Digital Supply Chain framework – creating end to end visibility

2. Digital Factory Design

Digital 3D modelling systems for factory layout design, process and material flow simulation

3. Real-time Factory Scheduling

Advanced factory execution systems with sensor-enabled, smart devices, real-time data KPI monitoring, predictive maintenance

4. Flexible Factory Automation

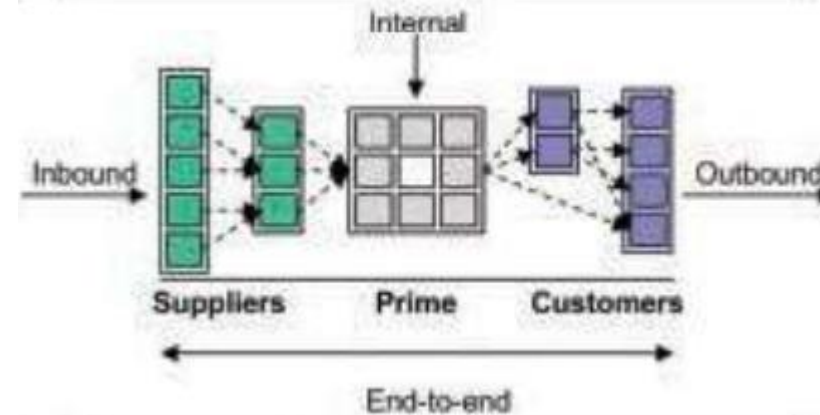
Advanced manufacturing plant/machine reconfiguration, scale flexibility, varied levels of human-robot-collaboration

5. Digital Production Processes

Application of digital production processes (e.g. additive manufacturing, continuous processing) with advanced process analytics

1. Automated e-Sourcing

Seamlessly connected automated replenishment in line with real-time KPI monitoring with predictive disruption analytics (all tiers back to mine)



6. e-Commerce Fulfilment

Web-based order management (configuration, pricing etc.) and inventory deployment to multiple points of sales, covering last-mile and direct delivery (all tiers through to end users)

10. Product Lifecycle Management

Nextgen PLM systems that provide accurate, up-to-date product information accessible throughout the value chain and product lifecycle

9. Digital Supply Network Design

Design tools to architect supply network configuration – optimization and visualization of site location, capacity, inventory etc.

8. Digital Product Quality

Digital product quality management systems for connecting “traceability islands” back from customers to suppliers (root cause analytics)

7. Extended Supply Chain (near) real-time Monitoring

Extended end-to-end supply chain visualization watch towers for near real-time monitoring and decision making

Digital supply chain – Challenges in implementation

Internally

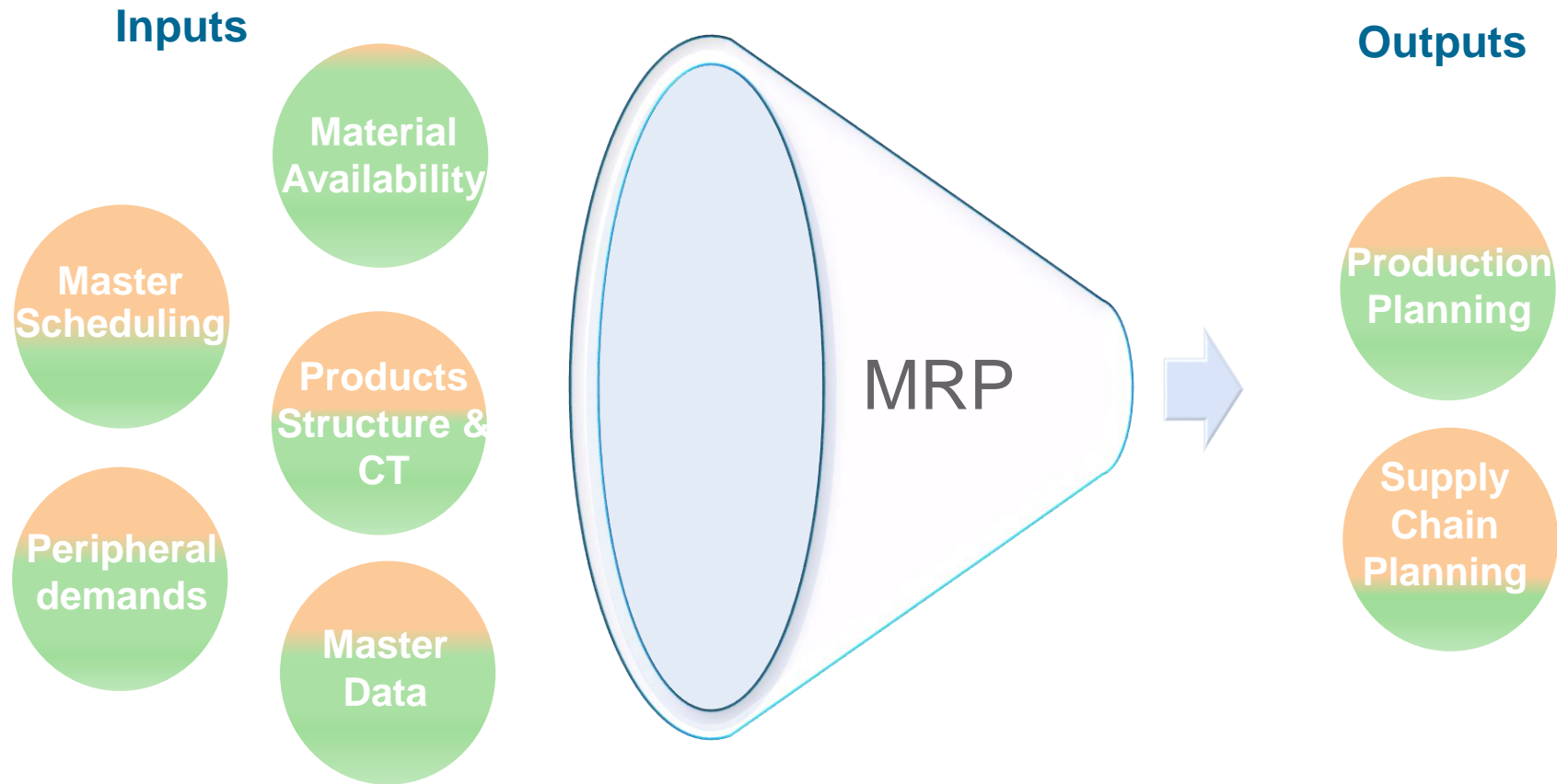
- Legacy systems
- Silos in organization structure
- Data accuracy

Externally

- Legacy systems
- Silos in organization structure
- Data accuracy
- IP concerns

Challenge – Data accuracy

● = Data manipulation ● = Trust Data



Top issues for manual data management:

- Lack of / Incorrect demand data in the system
- ECO Implementation & BOM structure (NPL)
- Customer configuration changes

End to end visibility - a dream or reality?

The gap between visibility requirements and reality

80% say that it is of significant importance to have visibility of risks affecting supply. **This has been achieved by just one quarter (25%).**



75% want visibility of all events affecting the inbound flow of goods from suppliers. **This has been achieved by only 29%.**



Source: Zetes Manufacturing Research report 2017

Connected Industry 4.0 - Digital Supply Chain....

- A great vision of how the future supply can/will look like
- Many challenges still ahead
- Our industry enables the solutions to these challenges.

The Future looks bright!