

A global perspective to redesign supply chains



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REDESIGNING
SUPPLY CHAINS IN
THE NEW ERA OF
MANUFACTURING

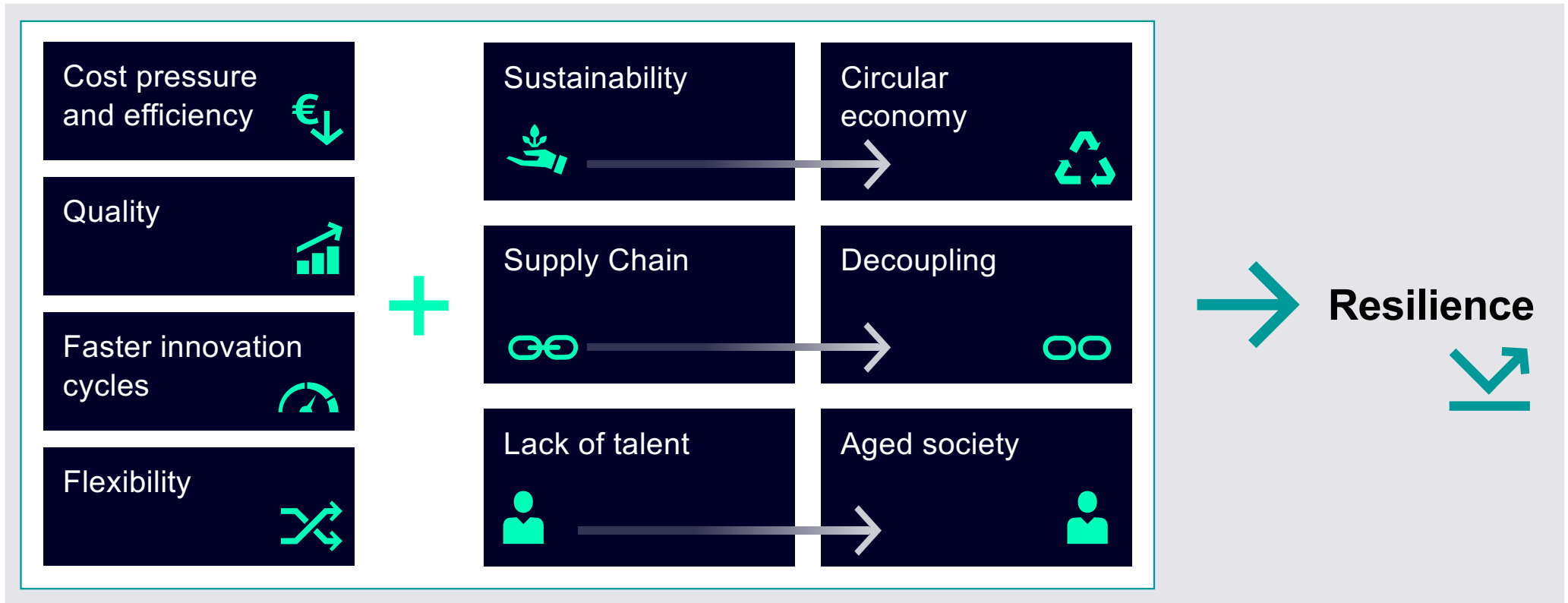
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Being resilient in turbulent times

Redesigning the structure of manufacturing

World Manufacturing Forum | November 26, 2022 | Rainer Brehm, Siemens Digital Industries

Industry must become resilient to tackle constant flow of new challenges



Resilience means: adapt fast
ideally at the click of a button



**Fixed
production lines**

enhanced by



**Flexible, modular
production lines**

Porsche explores new directions with the FlexiLine

New production line
in downtown location

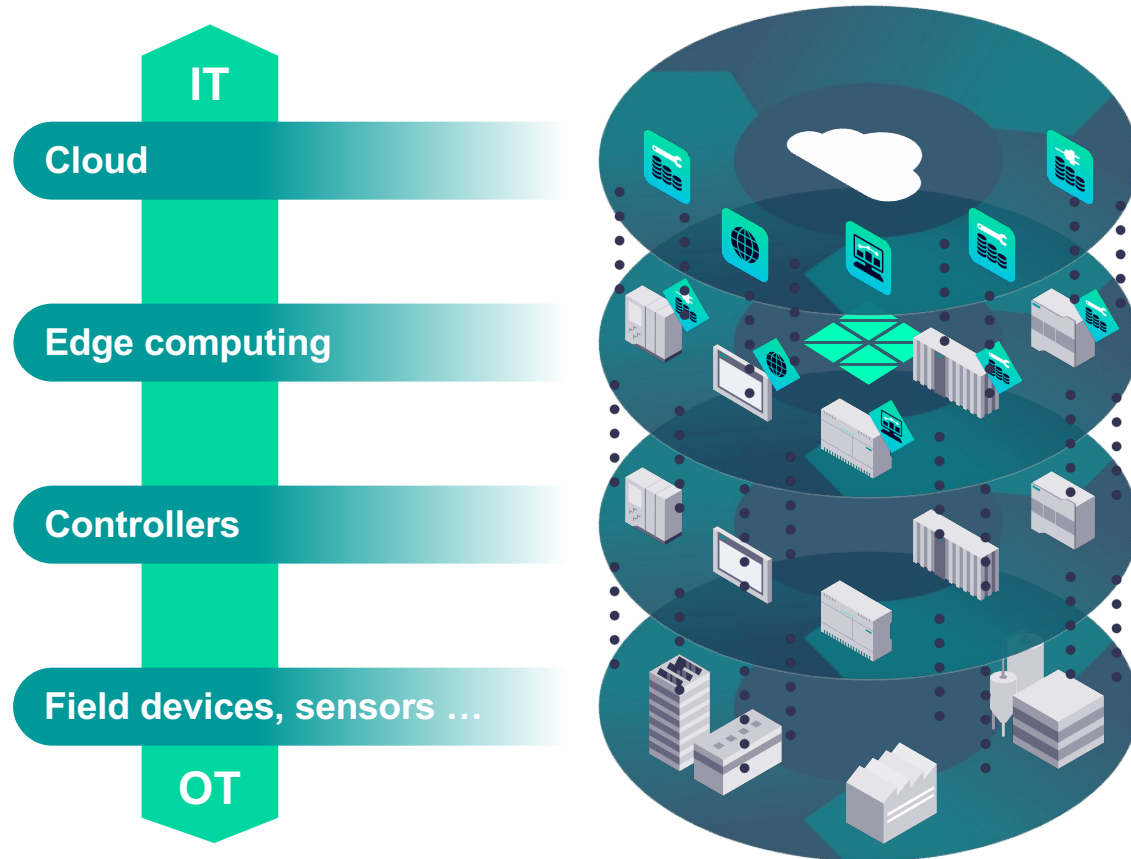
Maximum flexibility through
the use of automated guided
vehicle systems

Implementation of complete
conveyor technology by Siemens
in 4.5 months – record time

Automation entirely based
on SIMATIC and SINAMICS
components and SIMOVE, with
openness to 3rd party IoT systems

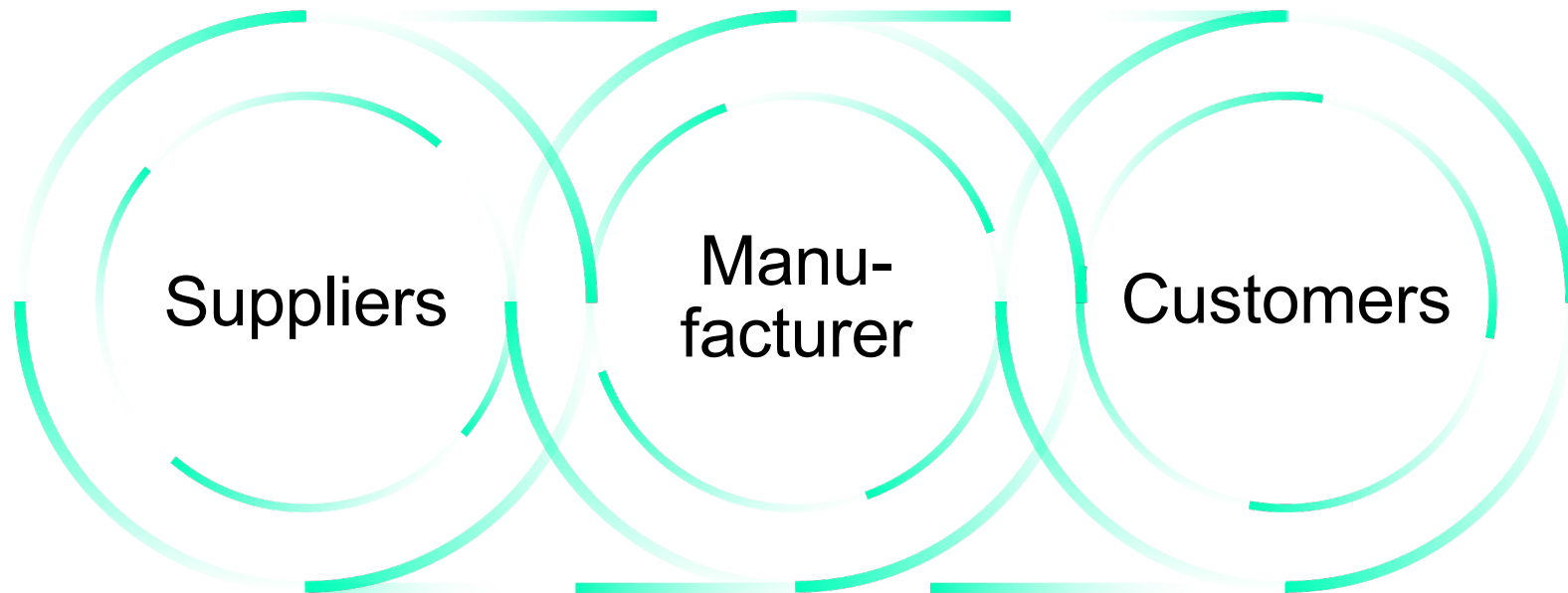


Resilience means: bring IT capabilities into automation
for more transparency in your processes

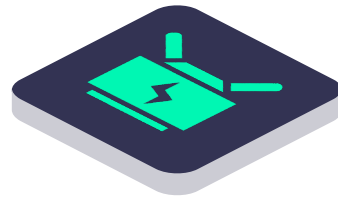
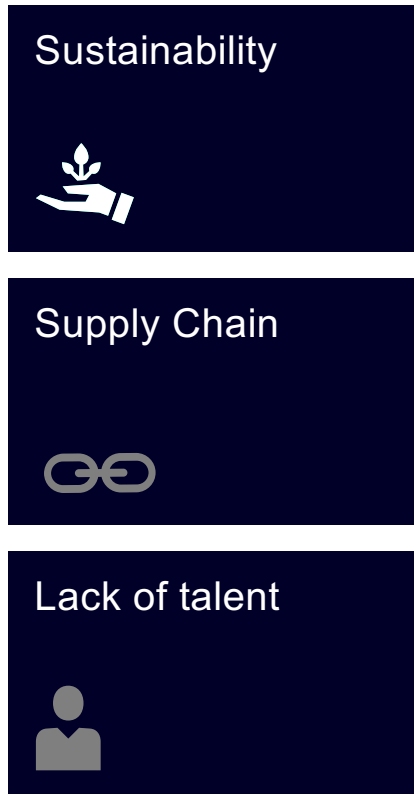


Bringing
Information Technology (IT)
and
Operational Technology (OT)
closer together

Resilience means: use data across the entire value chain



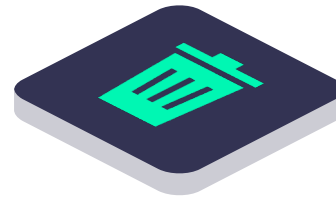
Growing pressure from customers, regulators and capital markets – producers need to rethink their operations



37%

of the global energy
is consumed by
industries

(Source: IEA)



13%

of all global waste
is recycled

(Source: Accenture)



20%

of global CO₂
emissions come
from industry

(Source: WEF)

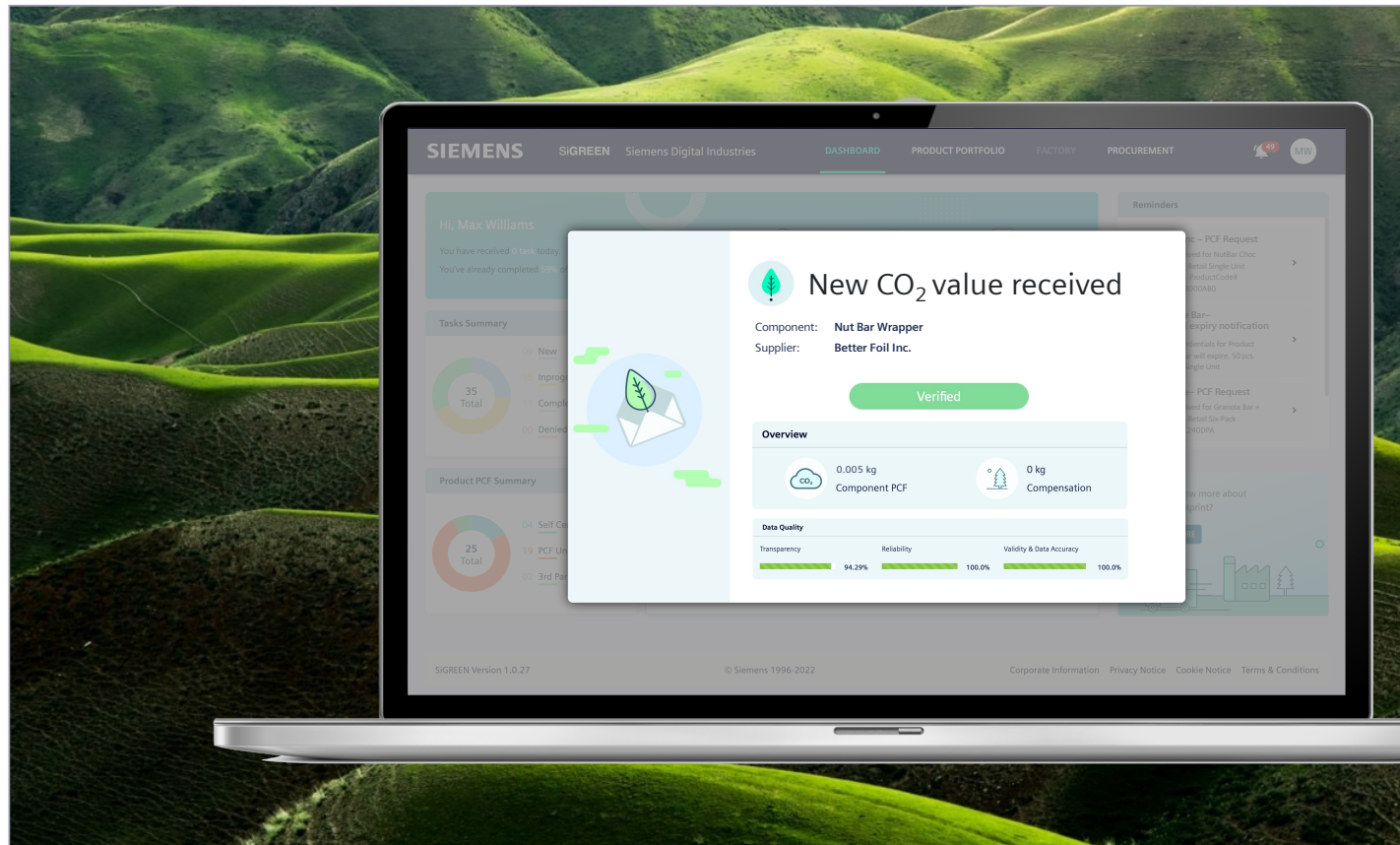
Resilience through data transparency along the entire value chain from supplier to manufacturer to customer

Makes product carbon footprints
transparent along the supply chain

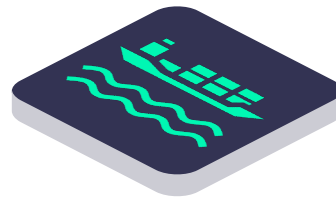
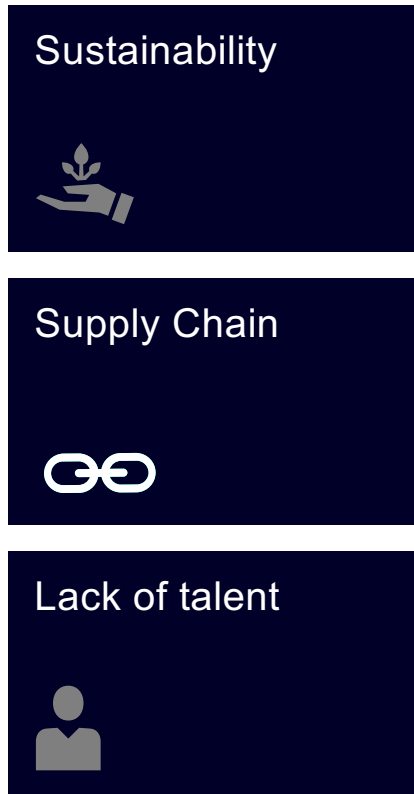
Innovative Blockchain mechanism
for data trustworthiness and data
sovereignty

Software as a Service solution with
Freemium business model for fast
scalability

Proof that data exchange between
Catena-X members works



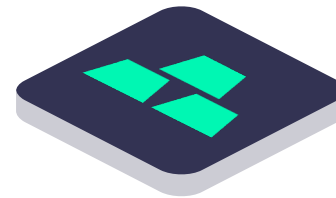
Global supply chains partially collapsed in last months – accelerating the shift from global to local production



#1 Shipping delays

had the biggest impact on manufacturers' supply chain

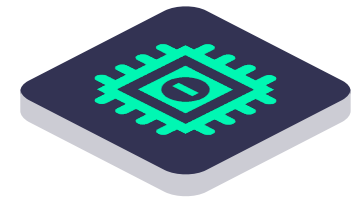
(Source: Deloitte)



Double-digit price increases

of raw materials in last months

(Source: McKinsey)

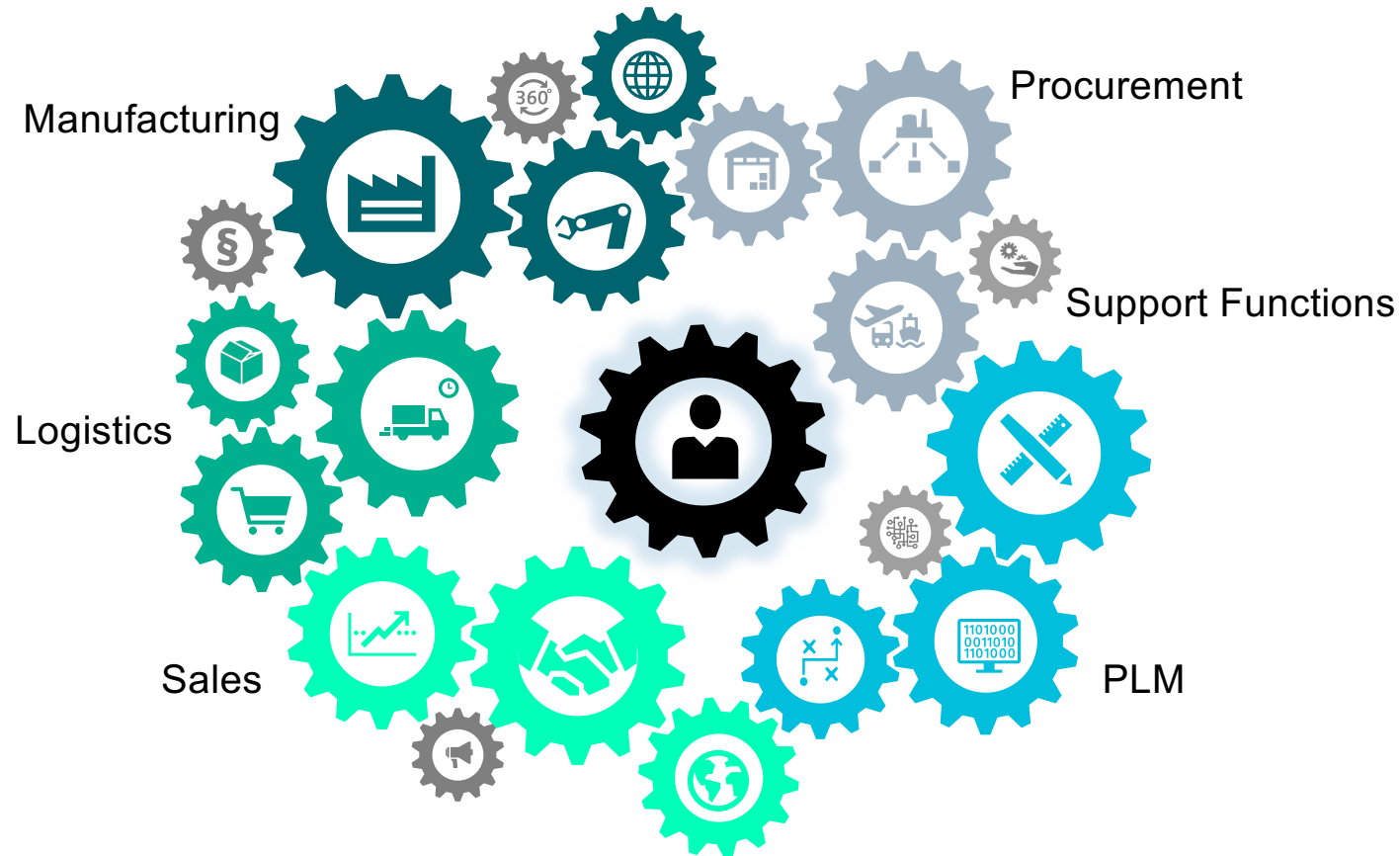


#2 Part shortages

had the second biggest impact on manufacturers' supply chain

(Source: Deloitte)

The interplay of all functions is necessary to master supply chain disruptions



Data transparency for fast operational actions on supply chain disruptions

E2E-Logistics RESILIENCE PLATFORM

1. Digital Twin Platform



2. Real-time alerting

100%
transparent



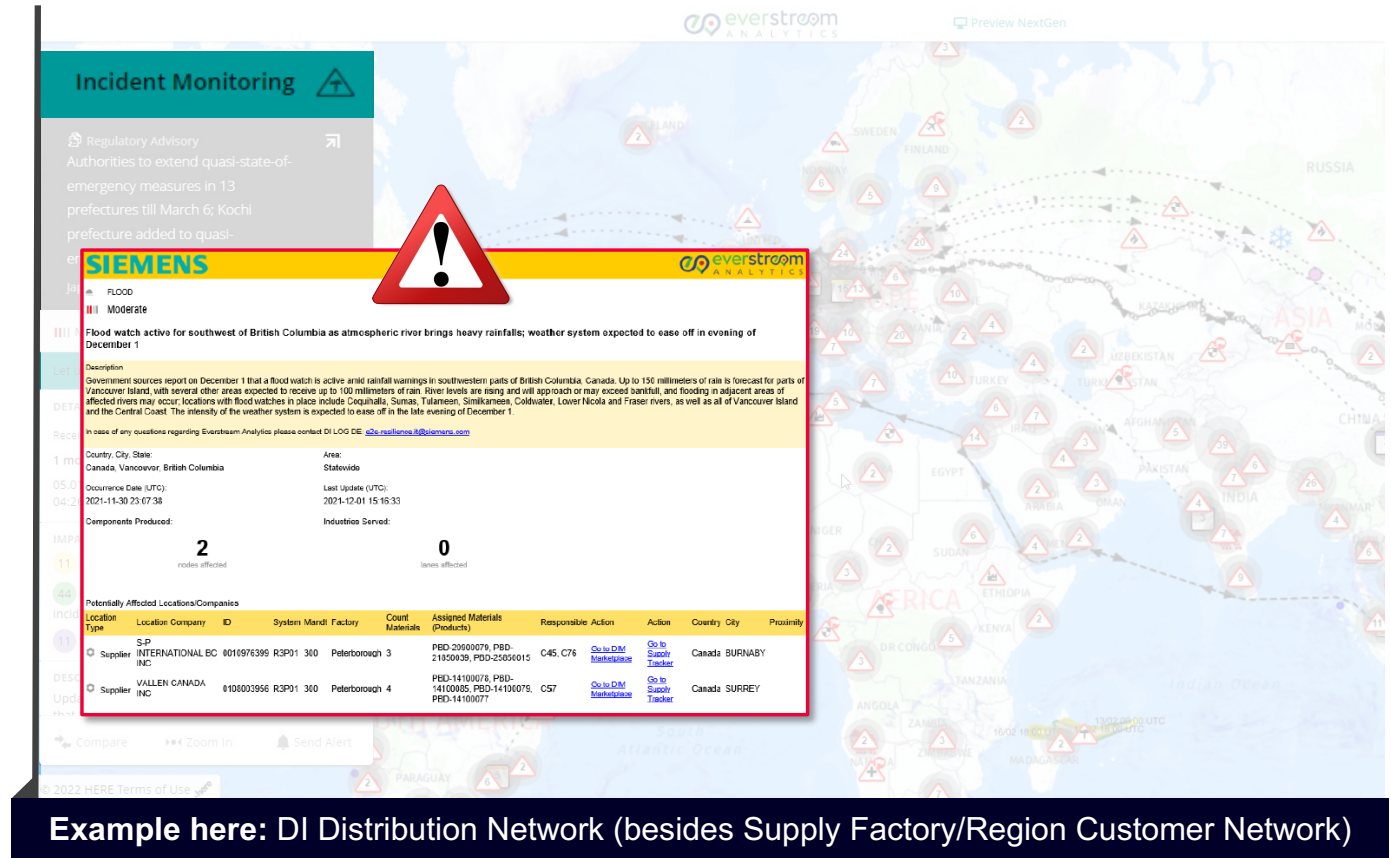
3. Impact on business

+80%
same-day actions

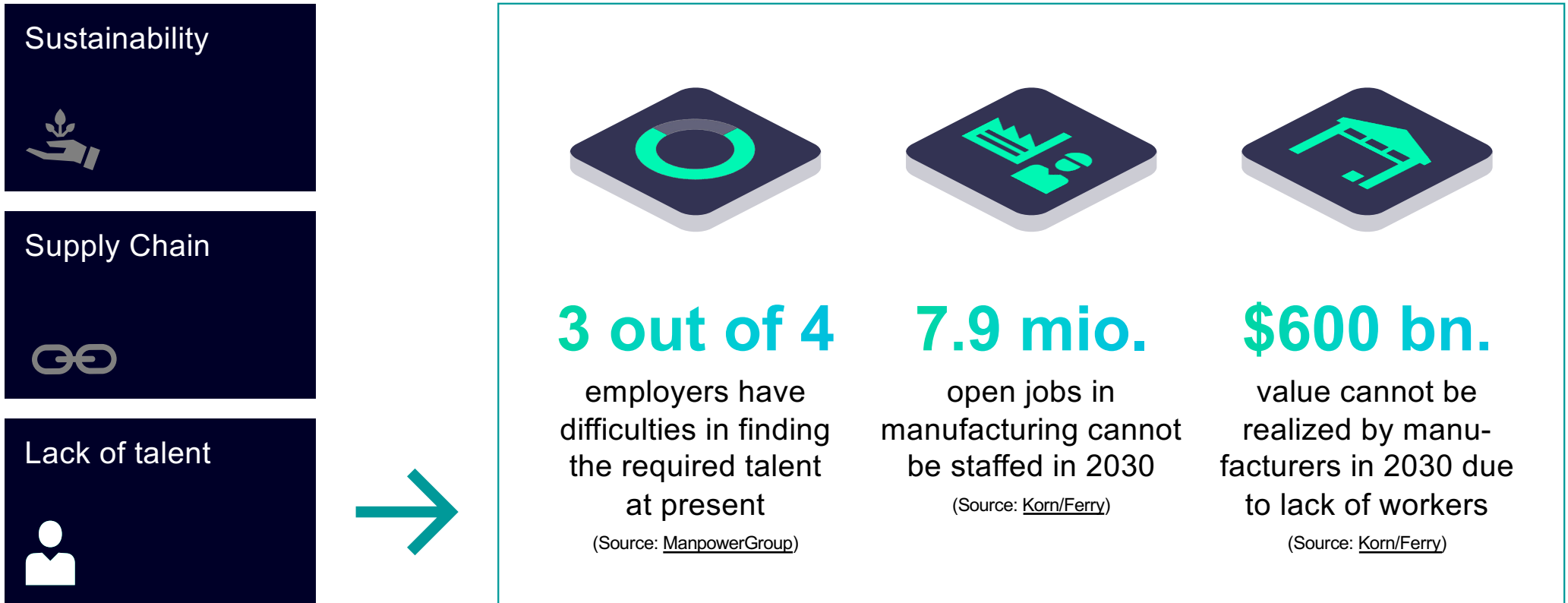


4. Action drive

-40%
stops/fall-outs



The search for skilled labor becomes even more challenging in the next years

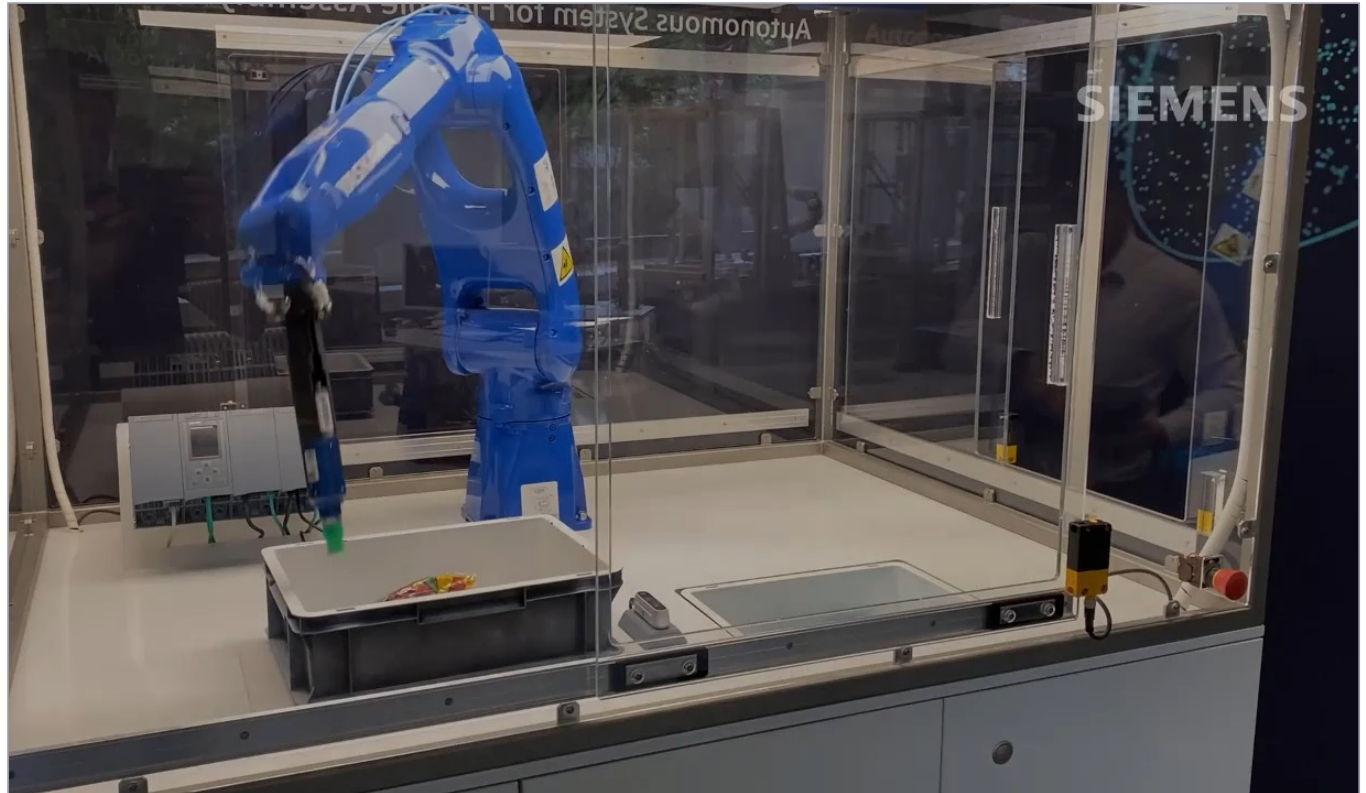


Data analysis for more flexible process steps – AI-driven piece-picking robots relieve workers from manual & repetitive tasks

Artificial intelligence allows robots to pick any object and place it with high precision

Potential to relieve labor shortages

Can be applied to new markets like circular economy/recycling



A vision of the future

The product shapes its production



**Fixed
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enhanced by



**Flexible, modular
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A vision of the future

The product shapes its production



**Flexible, modular
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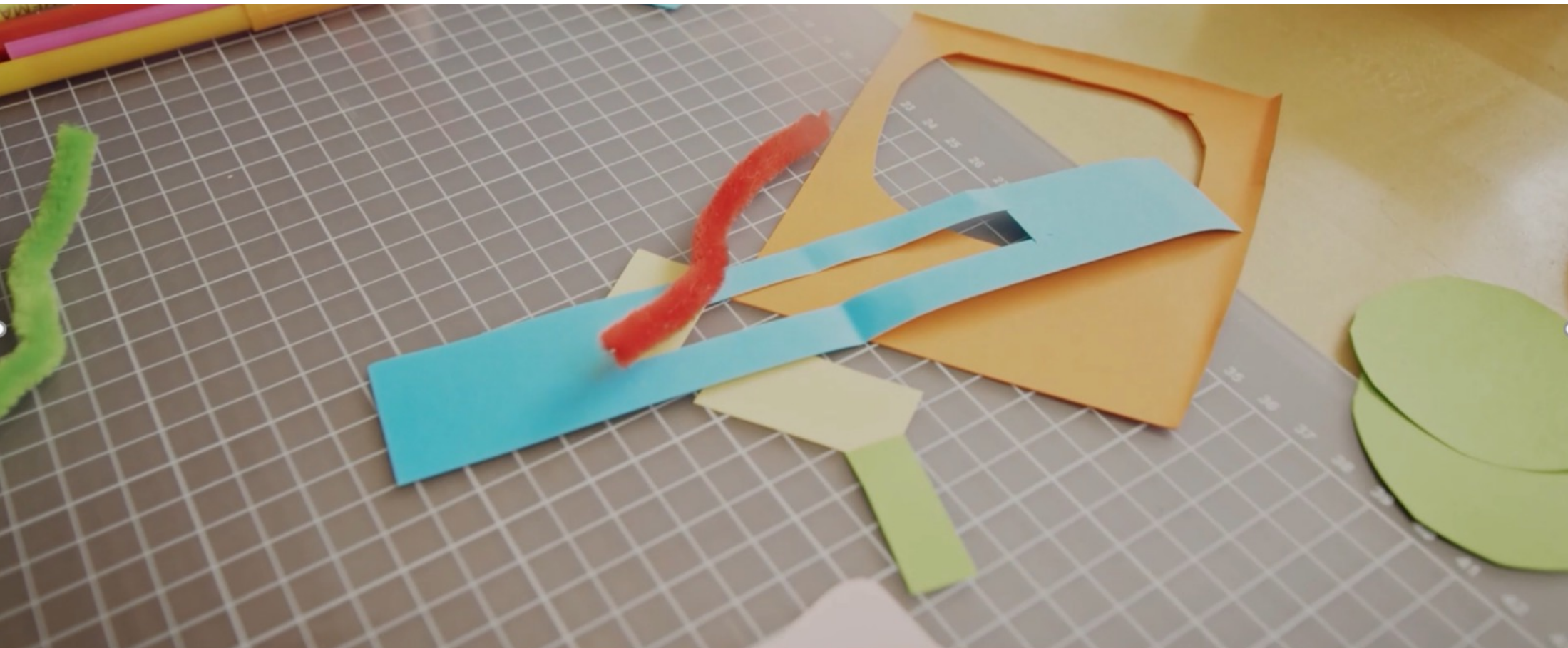
**Autonomous
Factory**

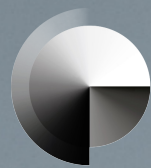
OT/IT integration for modular and flexible production – capability-based & dynamic production management

Dynamic Production Process Management

- ... to maximize **throughput**
- ... and minimize **resource conflicts**

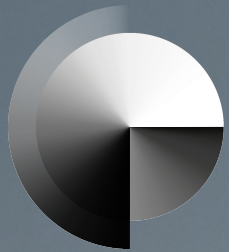






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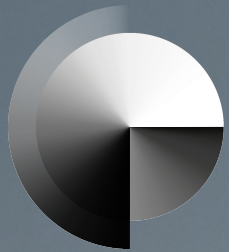
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