

Unlock Smart Manufacturing

Your Journey Beyond ERP with Fraunhofer's Industry 4.0 Maturity Framework

Sascha Reppel

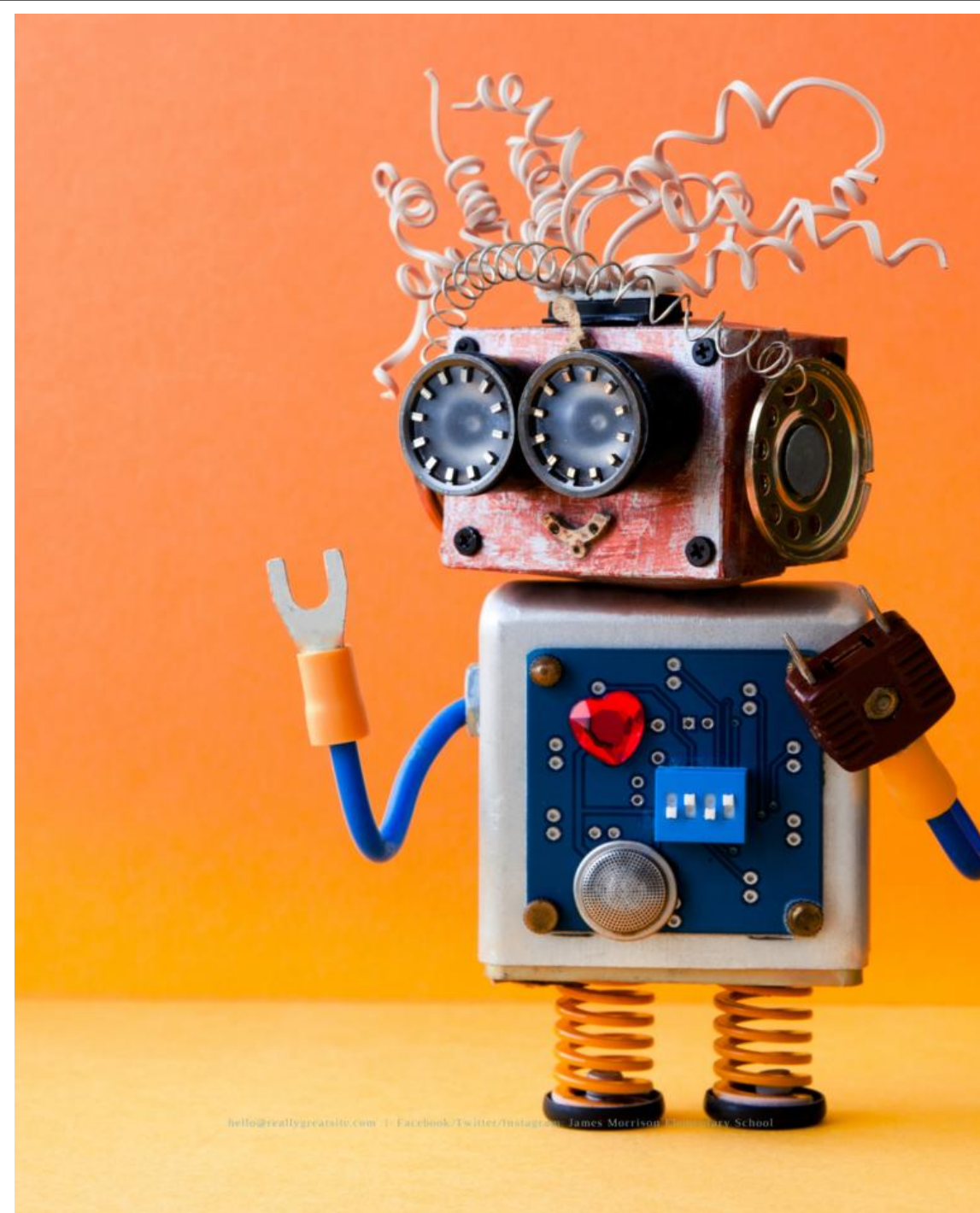
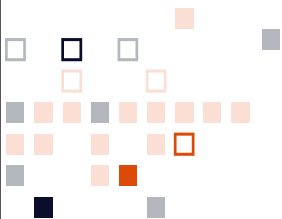
Managing Director RG.Experience Asia



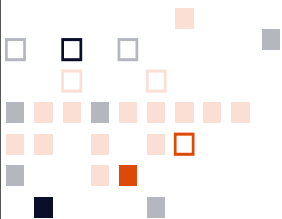
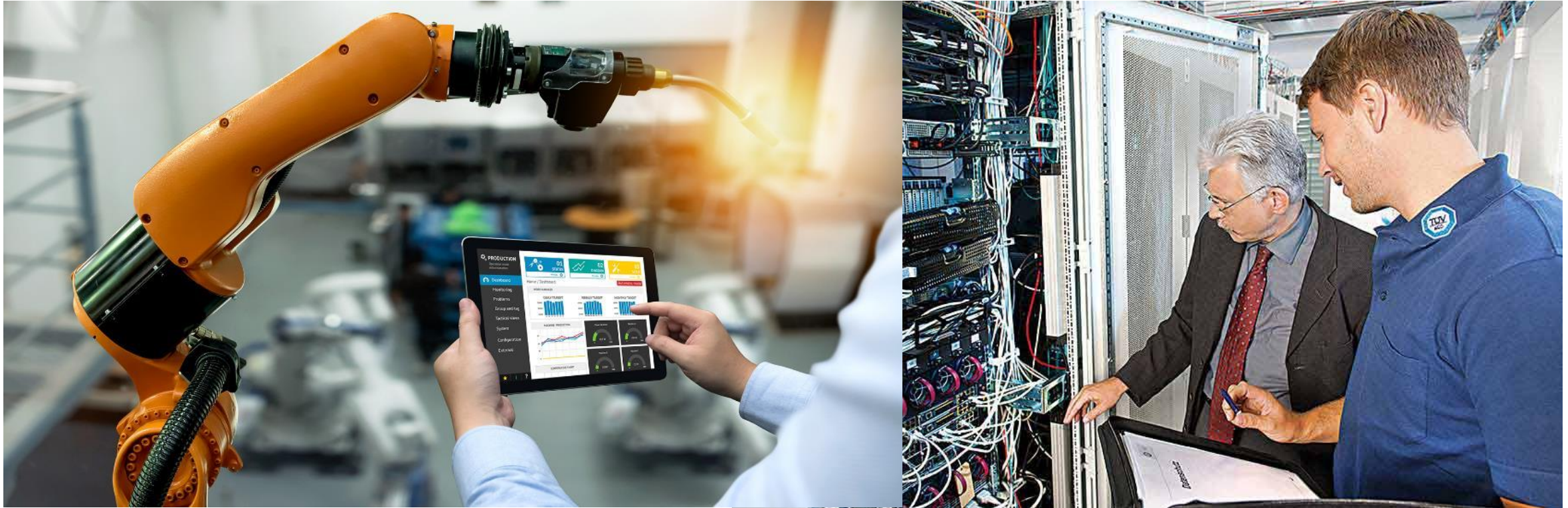
Don't Focus on the shiny new toy


Don't just buy a new technologies but scale up internal expertise via shadowing to fully make use of it
Real ROI comes 1 year AFTER an initial implementation project IF done right

Build up inhouse capabilities around Industry 4.0 (Training, Change Management,...)
Tech is an enabler but NOT main course



The reality of Smart Manufacturing





Industry 4.0 = Σ [(Enterprise 4.0) + (IoT)
+ (Skills) x (Insights) * (Scalable)]

Challenges for SMEs in Asia & beyond

Digitalization is not a USP anymore but a key to weather the storm

External Pressure

- **Staffing Cost & Shortage** in Blue Collar work
- **Diverse Regional Regulatory** Pressure & Requirements
- **Supply Chain Disruption** demanding more resilient Supply Chains
- **Technology Adoption** requires faster innovation cycles

Digitalization
of **bad** processes

Unbalanced Maturity investing
in innovative technologies
while not building critical
capabilities

Real time data acquisition
but not used to build a
culture
of optimization

Digital Islands without
achieving vertical integration
& **single source of truth**



Lack of **utilization** of core
systems like ERP

>90 % of Asian Subsidiaries
didn't properly implement PLM
as the digital backbone for the
production process

Real time data acquisition
doesn't cover EMS & CAQ
by MES & SCADA

Internal Challenges

Industry 4.0 Technologies

Cloud,
Extensibility,
Microservices

Manufacturing
Intelligence

Big Data and
Analytics

Internet of
Things
(IoT)

LLM & AI for
Manufacturing

Augmented
Reality
(AR)

Digital
Twin

Data
Discovery
and
Algorithms

Mobility

Data Privacy
(Encryption)

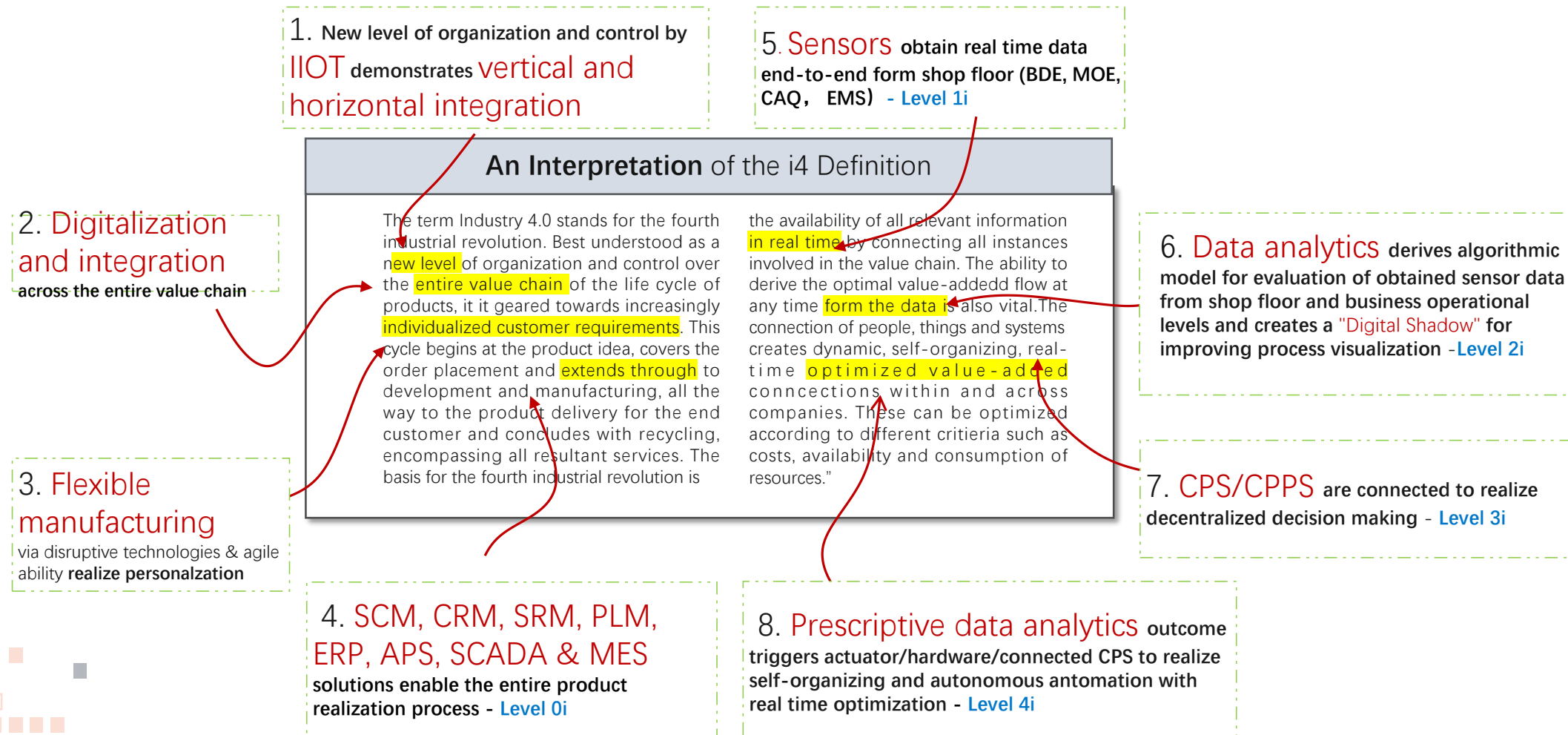
MES

Additive
Manufacturing
(3D Printing)

Blockchain

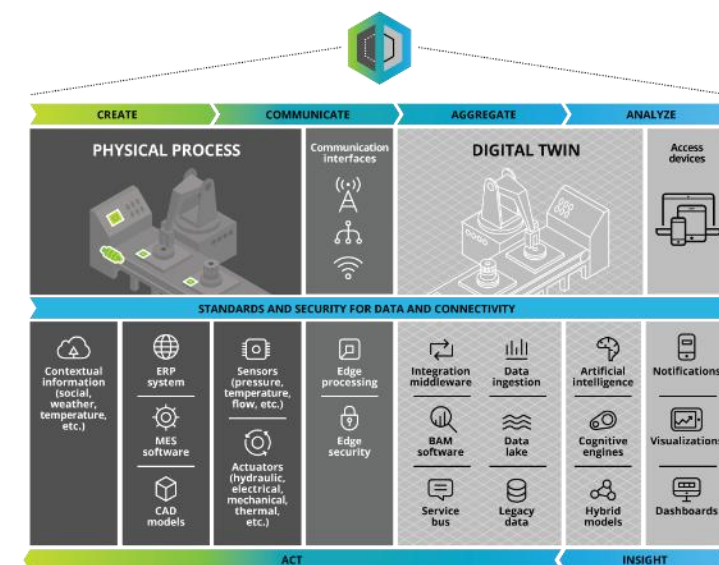
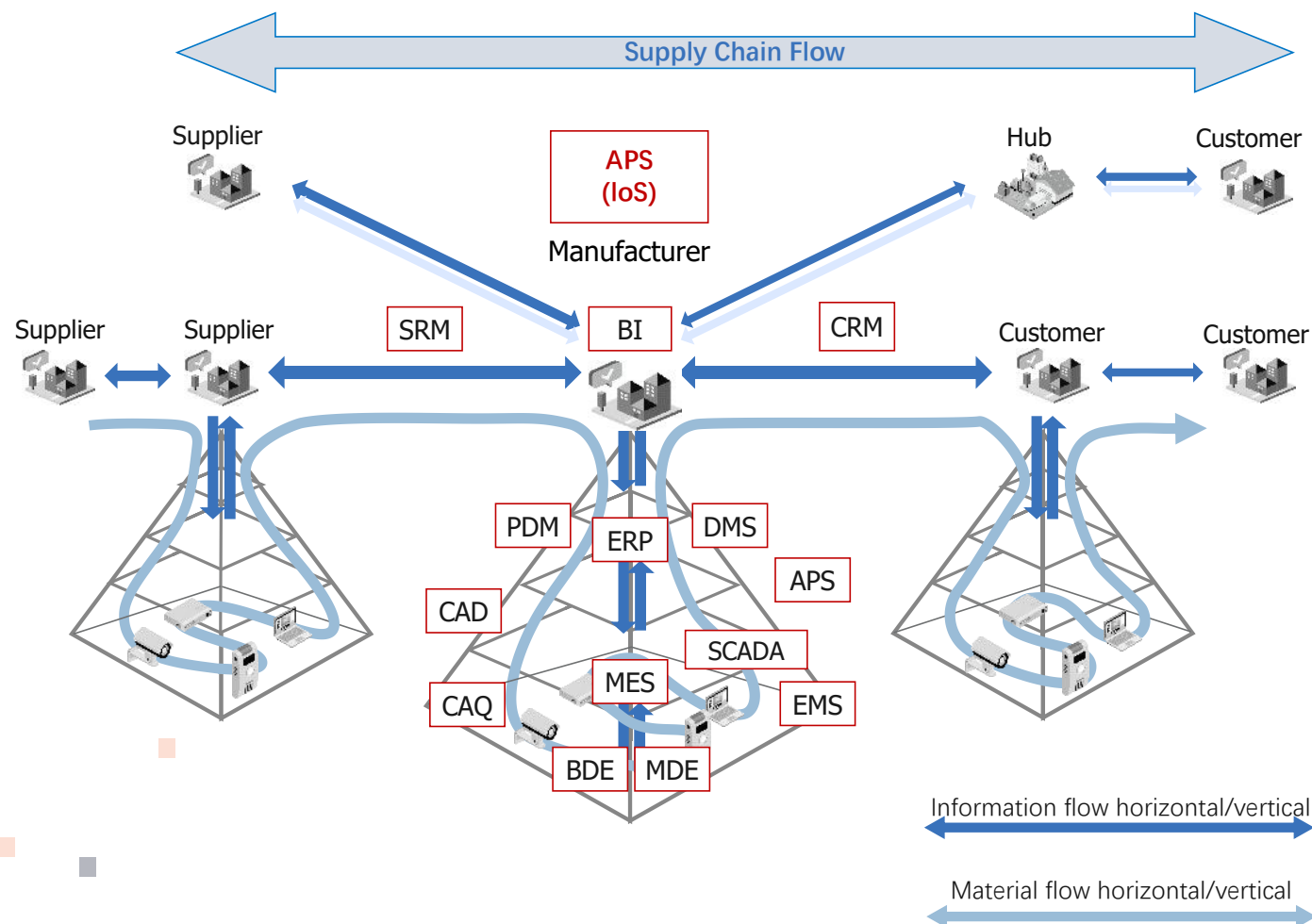
The Definition of Smart Manufacturing

8 Core Technical Capabilities for Smart Manufacturing



Reference Architecture for Smart Manufacturing

Focus on Critical Building Blocks not Hype

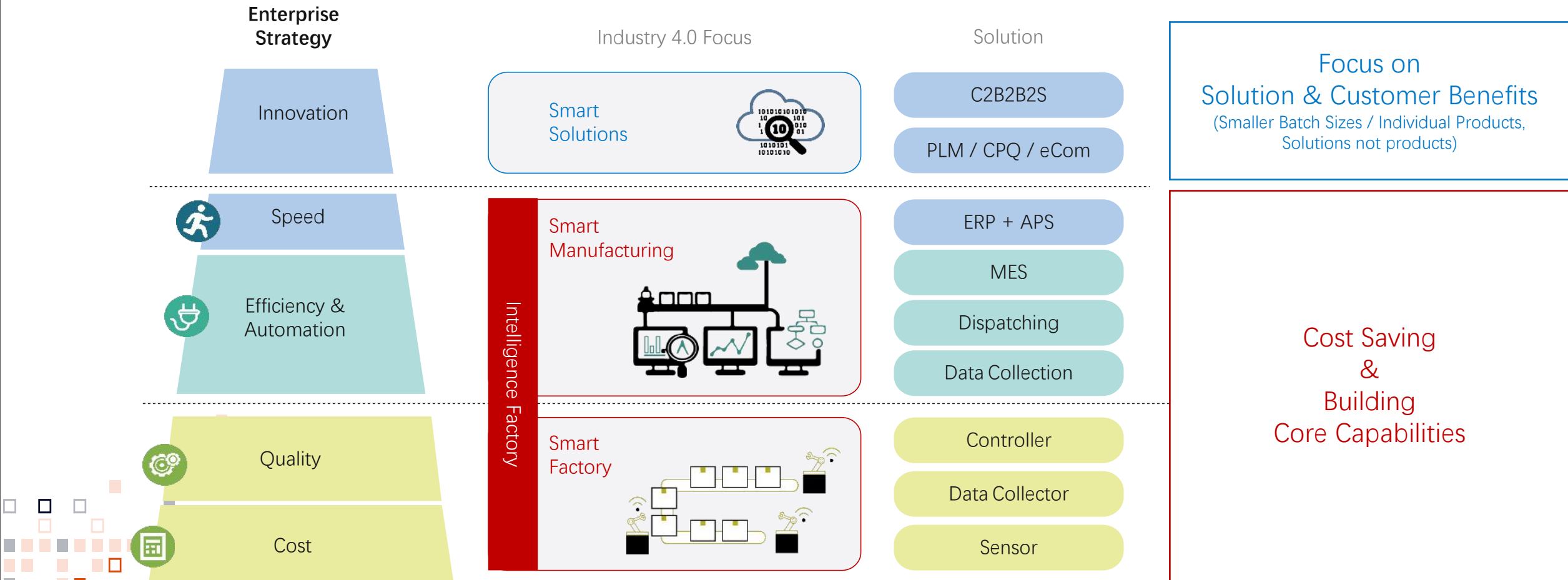


Source: Deloitte University Press.

Deloitte University Press | dupress.deloitte.com

Smart Manufacturing – Smart Solutions

beyond the Factory Floor

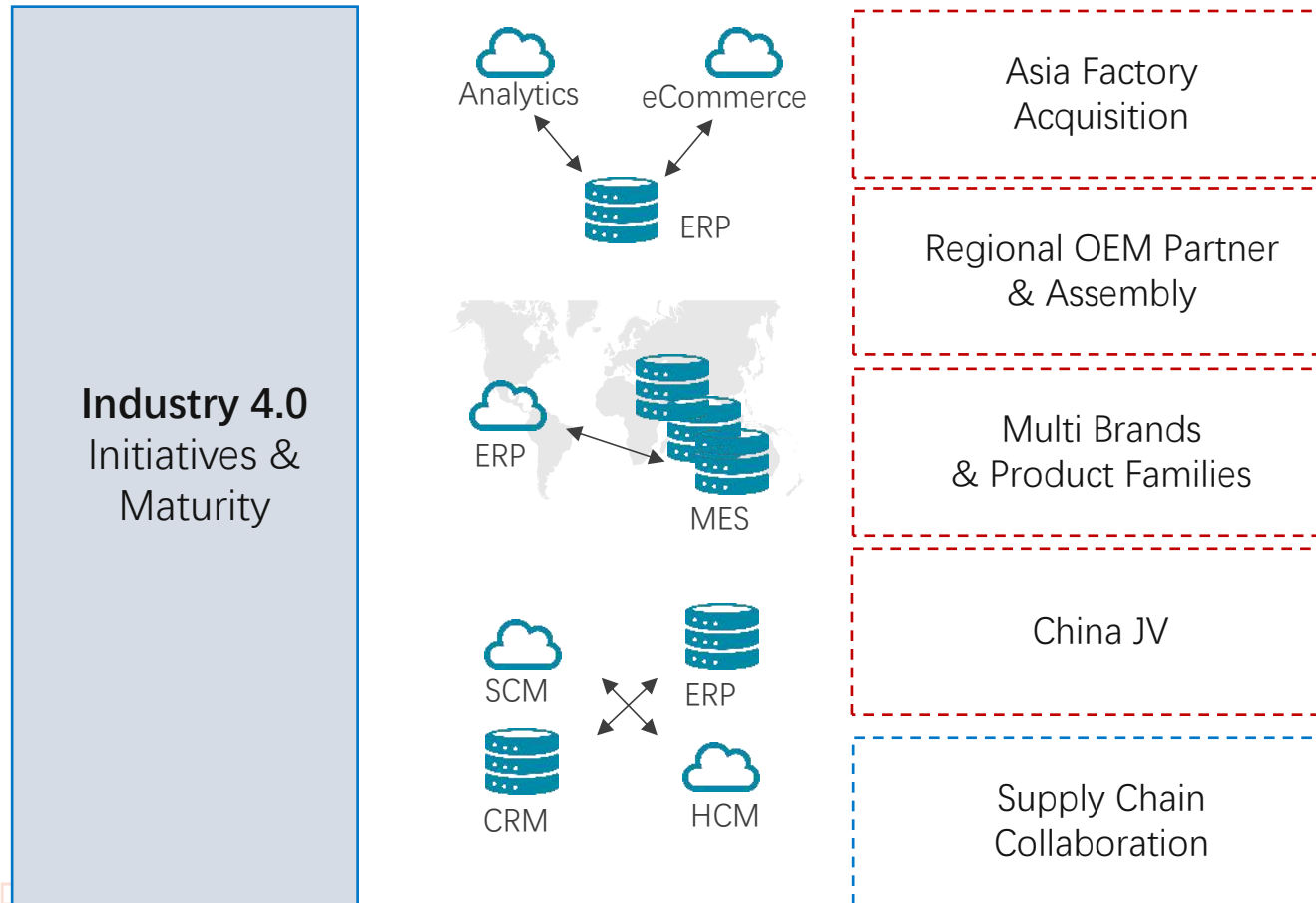


A large orange robotic arm is positioned in the foreground, its end effector holding a yellow cable. In the background, a person in a light blue shirt is holding a tablet, interacting with a control interface. The interface displays various data visualizations including bar charts for daily, weekly, and monthly targets, a line graph for machine production, and several circular gauges for power and temperature. The text "This is already complex BUT..." is overlaid in white on a semi-transparent dark band across the middle of the image.

This is already complex BUT...

Collaboration beyond

Multi Region / Multi Plant & Supply Chain Integration



Different Culture in Joint Ventures

have an own infrastructure / limited data sharing

Different Region

Know-how transfer while allowing for local best practices

Different Maturity


ensuring user skills match technology development

Different Technologies

2nd tier solution to cater for budget & needs in emerging markets

Acquisitions

Ingest & transition acquisitions into a global strategy / processes

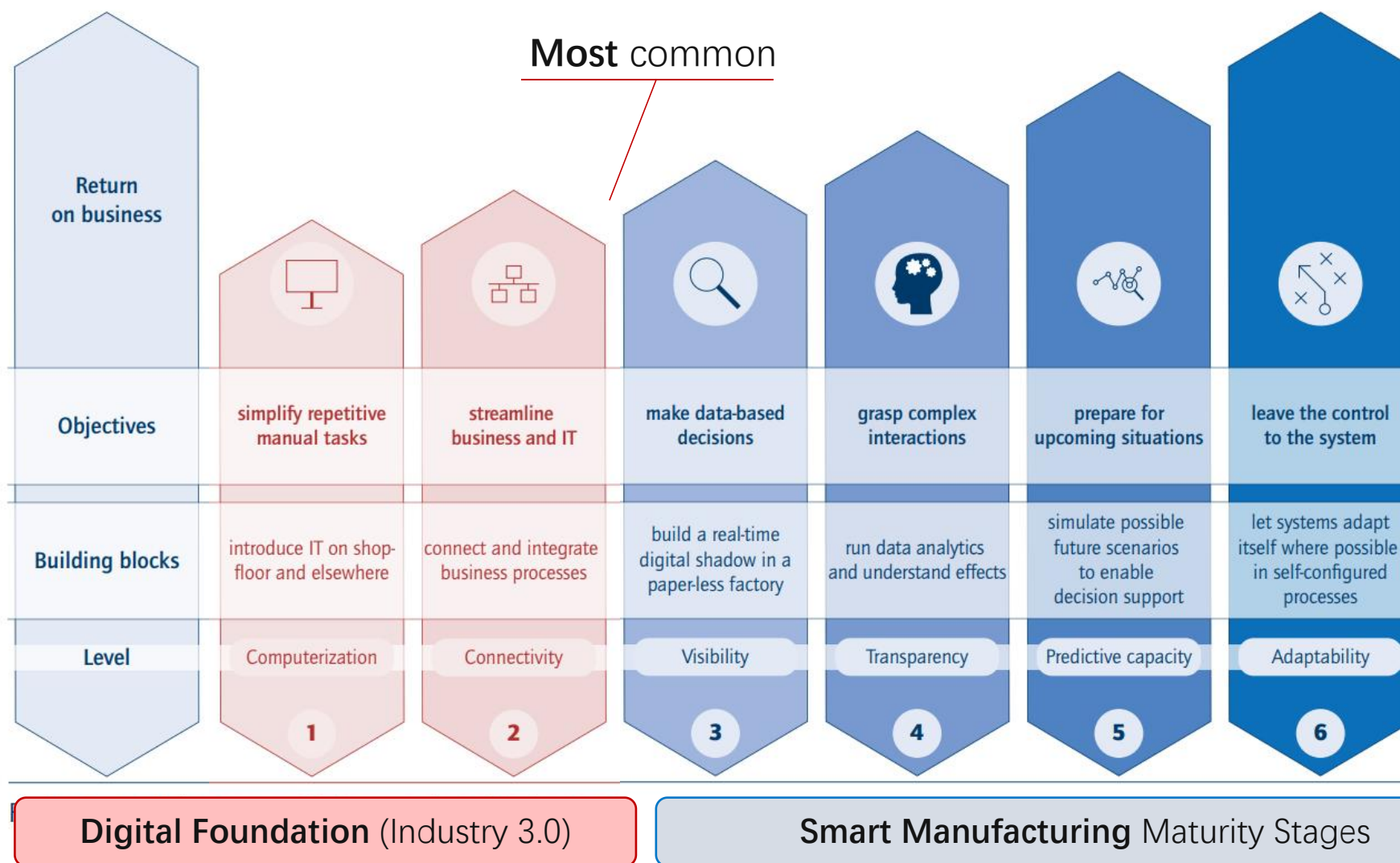
The image features a person in a light blue shirt holding a tablet computer. The tablet screen displays a complex industrial dashboard with various charts, graphs, and data points. In the background, a large orange robotic arm is visible, suggesting a manufacturing or industrial setting. The overall scene is brightly lit, with a warm, golden glow in the upper right corner.

Fraunhofer i4 Assessment

beyond Buzz building critical capabilities

Fraunhofer i4 Assessment

Understand your Status Quo



Get the details



Fraunhofer i4 Assessment - Application

How / When to use it?



Synchronize Initiatives

Remove silos and connect digitalization activities throughout the company's facilities / regions



M&A & JV

Technical due diligence for factories in the context of mergers & acquisition



Roadmap

Reduce the disconnect between IT & Business & Production & create a coherent digitalization roadmap for corporate & individual manufacturing facilities

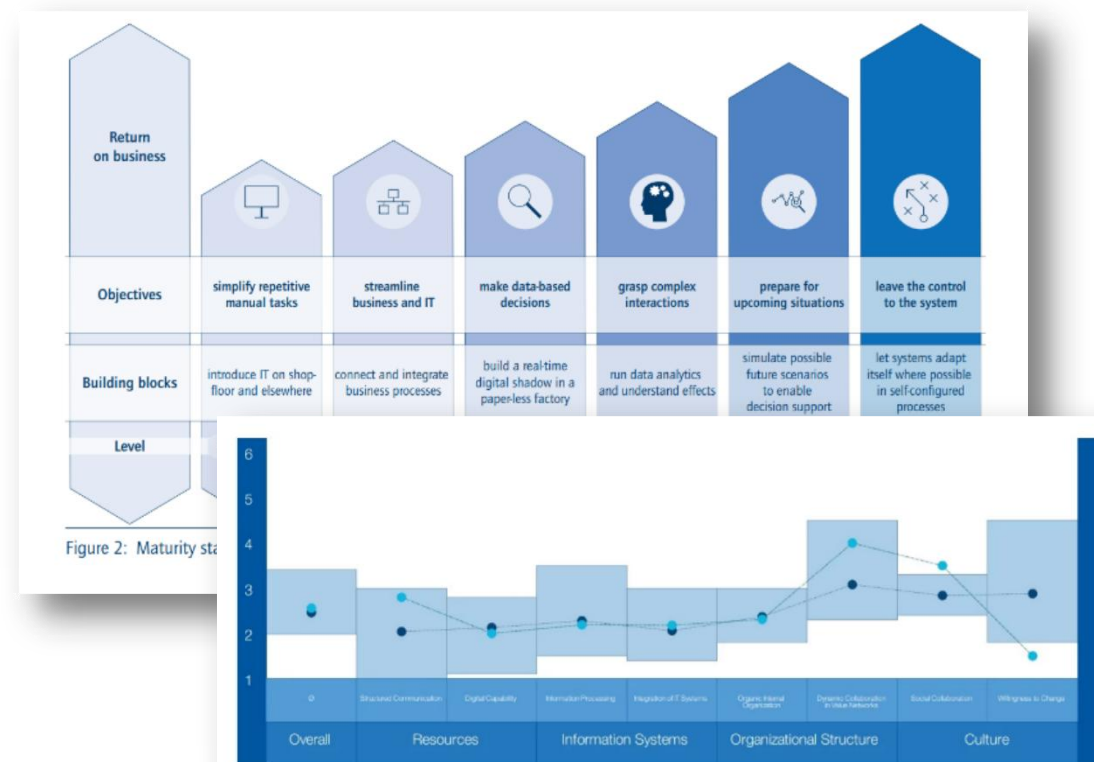
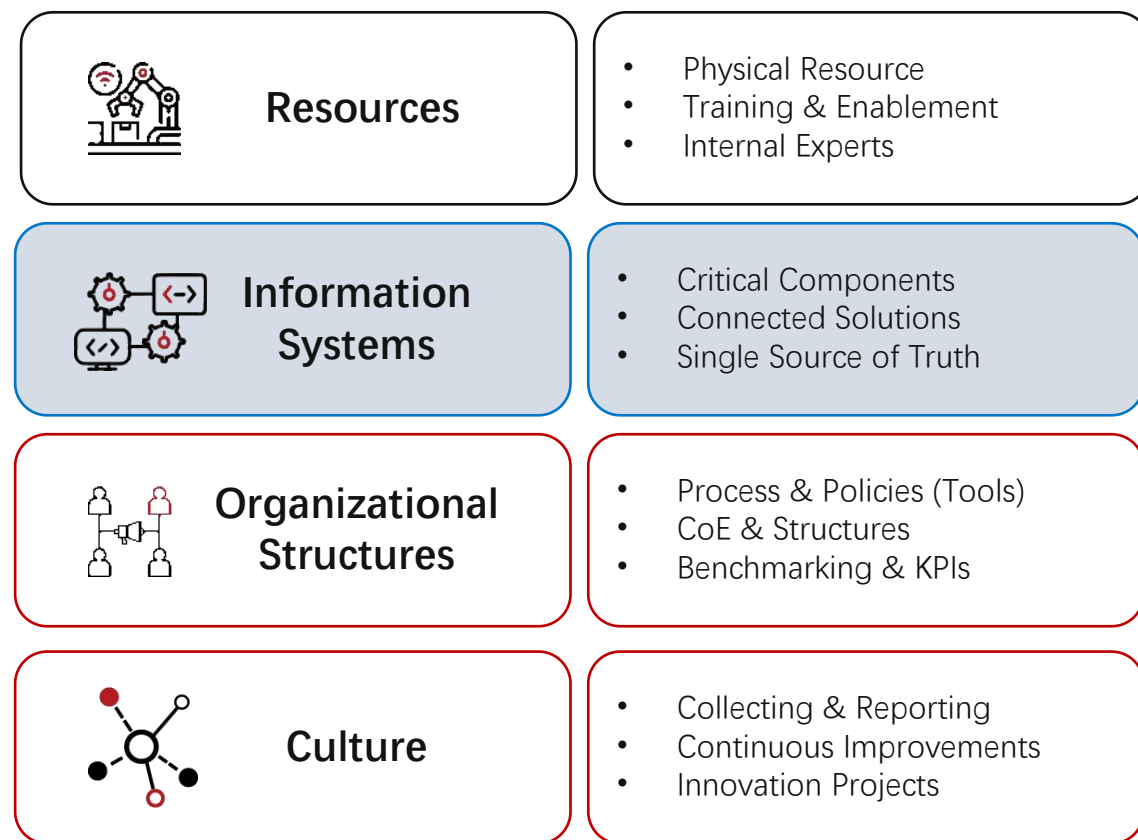


Global rollout

and progress monitoring of the digitalization strategy based on company best practices

Critical Capabilities beyond technology

Understand your maturity beyond different dimensions



Beyond theory

From Quick Wins to Roadmap



Fractional Advisory

EPICOR

+

Agnostic Delivery

- **SMB Experts** with track record for European companies entering Asia
- **Beyond** Pure Product implementation
- **Industry 4.0** & Smart Factory Use Cases
- **Strong Local** & Asia Presence
- **De-risk** Regional Rollouts bridging the gap between HQ & Local Subsidiary



Best Practice
& Regional Partnerships



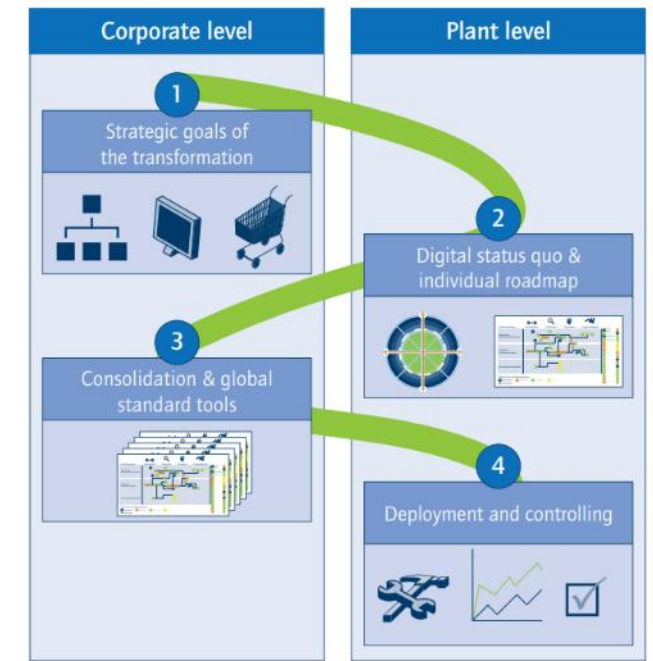
The background image shows a bright orange industrial robotic arm in the foreground, with its end effector holding a yellow cable. In the lower right, a person's hands are visible, holding a tablet computer. The tablet screen displays a complex industrial dashboard with various charts, graphs, and data points. The background is a blurred industrial environment with machinery and bright light sources.

Every Journey is different

Design your own journey at your own speed!

Industry 4.0 Framework

Build YOUR Journey



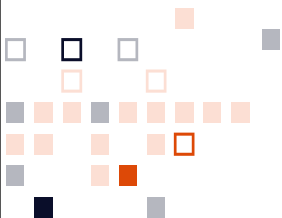
Strategy vs. Quick Wins

Industry 4.0 Program Strategy

5 Steps towards building your i4 Roadmap



Management & Organizational Buy-in



CoE - Build your own ownership

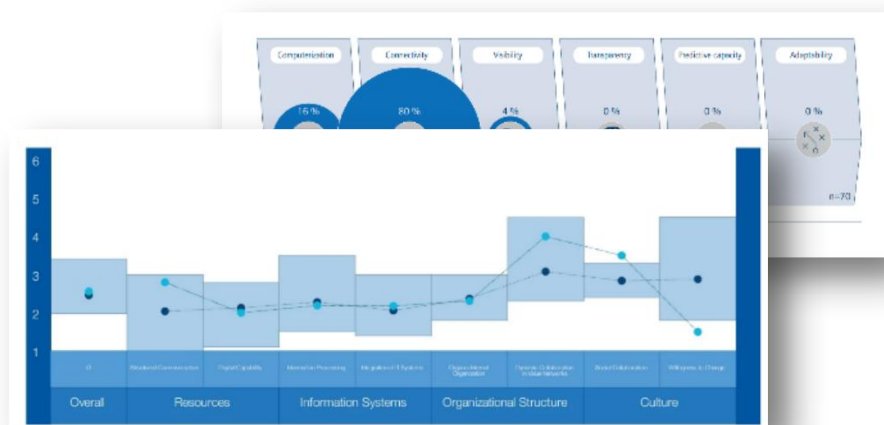
CoE around Smart Manufacturing as driver

| CoE Function | Key Processes |
|---|---|
| Knowledge Acquisition & Management | Knowledge repository, learn about new technologies and trends and build trainings and processes |
| Communication Management | Share best practices, KPI reporting at plant/regional/global level |
| Innovation | Technology portfolio choices selection, make vs buy, master-planning |
| Reporting | What to measure, how and why |
| Organization & Culture | Learning plans, skills inventory |
| Financial Governance | Budgets, forecasts, planning |

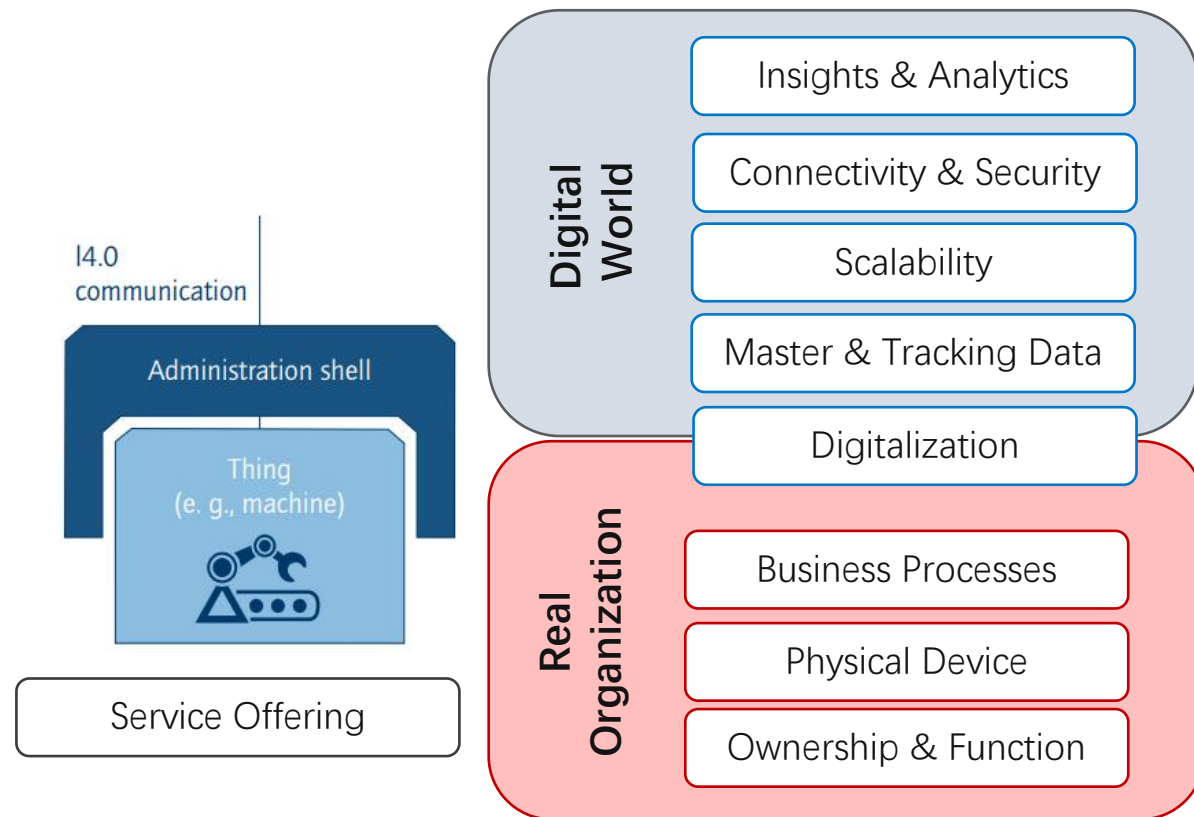


Benchmark - Maturity Benchmark & Prototype

Maturity Audit & Prototype Projects



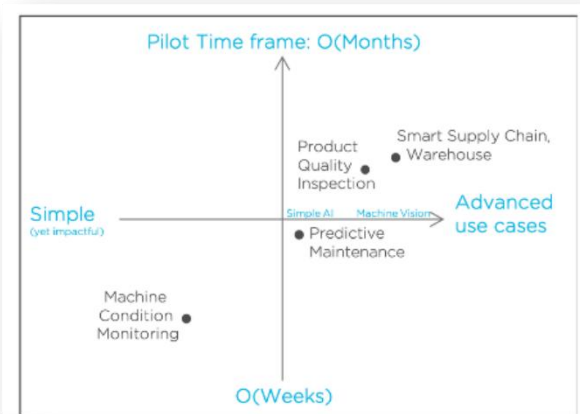
Guided or Internal Led
Maturity Audit(s)



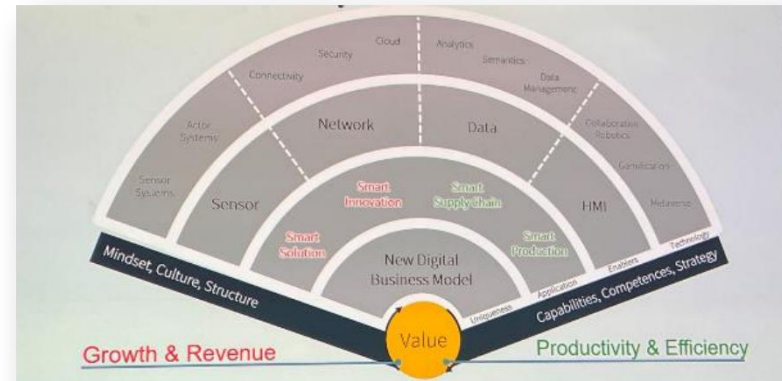
Establish Lighthouse Prototypes
Establish New Critical Capabilities
with each project / prototype

Strategy - Build your Vision

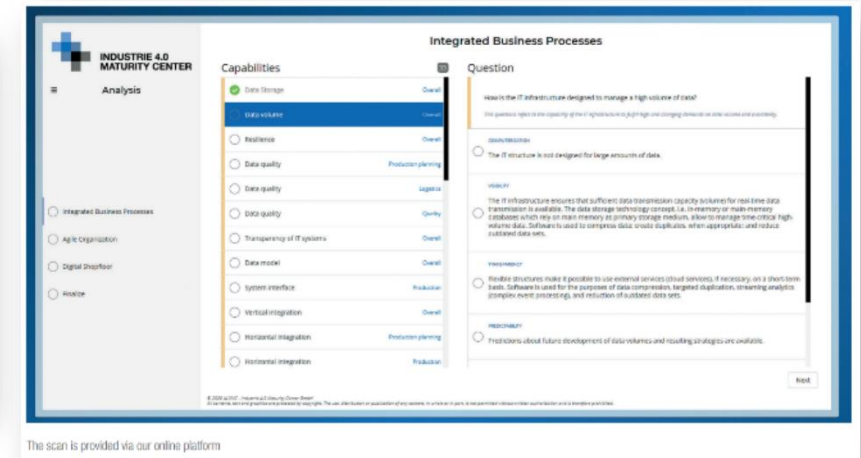
Smart Manufacturing Vision & Roadmap (Annual Reporting)



Strategic Project Map
(Map Projects to i4 Priorities)



Cost vs. Revenue
(Solutions & Productivity Focus)



Smart Manufacturing Cockpit
(Track Projects & Ideas)

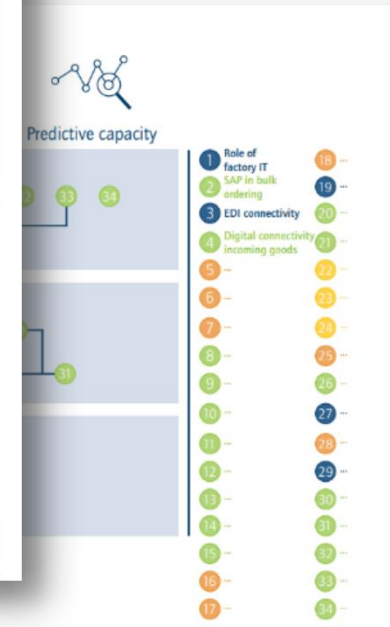
Continuous Improvement - Build your roadmap

Establish a culture to shift to a higher level of maturity

- **Building** Key Capability Roadmap
- **Improve** Processes in existing Systems
- **Track** Minor Improvements
- **Cross** Regional CoE & Knowledge Sharing
- **Knowledge** Base of Use Cases
- **Communicate** Best Practices



Figure 18: Digital transformation roadmap for a chocolate factory (source: Industrie 4.0 Maturity Center)



Industry 5.0

Digitalization is not slowing down any time soon
Key is to built smart habits / change culture





9:31

Tuesday, April 9



EVA

now

EVA detected production anomaly



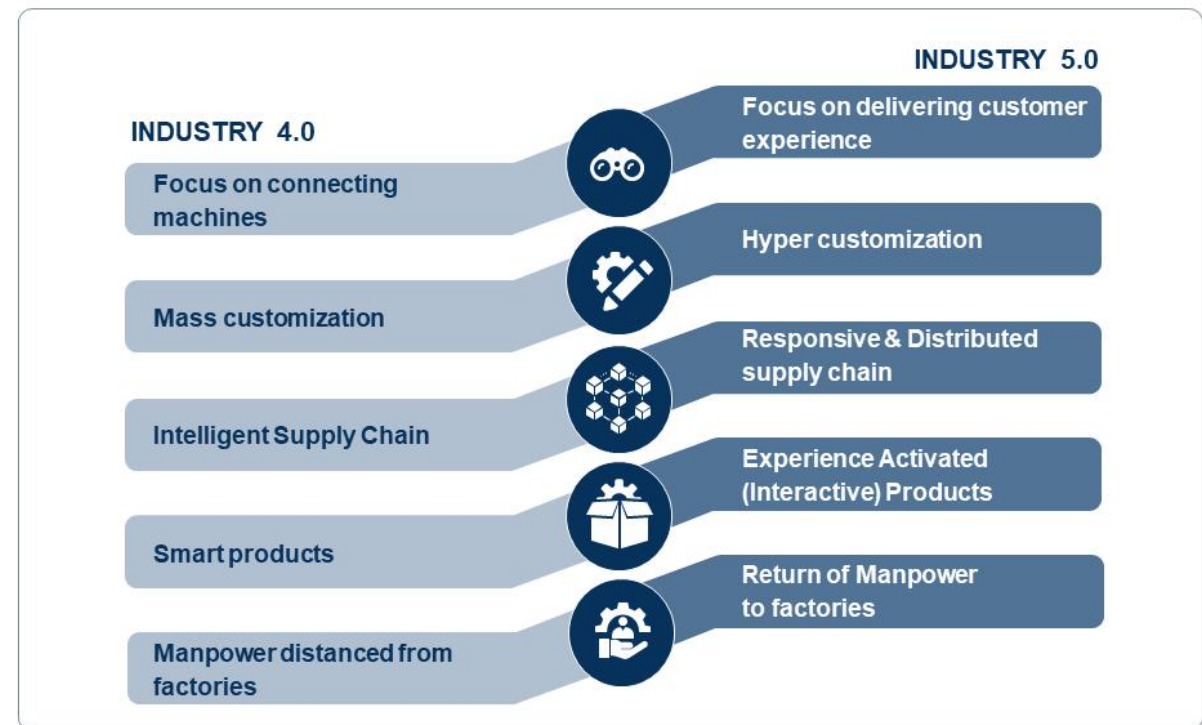
Building Smart Habits (Culture) to react quickly

Hyper Connectivity & Hyper Personalization

“the era of experience”

- From mass & automated manufacturing towards **distributed** supply chains
- Going beyond **your** product offering solutions combining process value add / frictionless,...
- Batch **size of one**
- Supply chain coupled with the **gig economy**

Highlights of Industry 5.0 compared to Industry 4.0



FROST & SULLIVAN

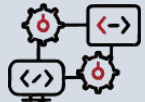
[Frost: How industry 4.0 pioneers can evolve to the industry 5.0 model - Tech Wire Asia](#)

So...

How to get started?



FIND out BOOTH to WIN



Maturity Audit Offerings

Half day **Free** Discovery Session
2 **Discounted** Audits



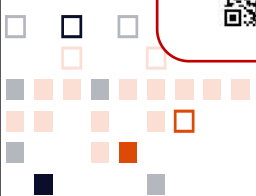
Technology Audits

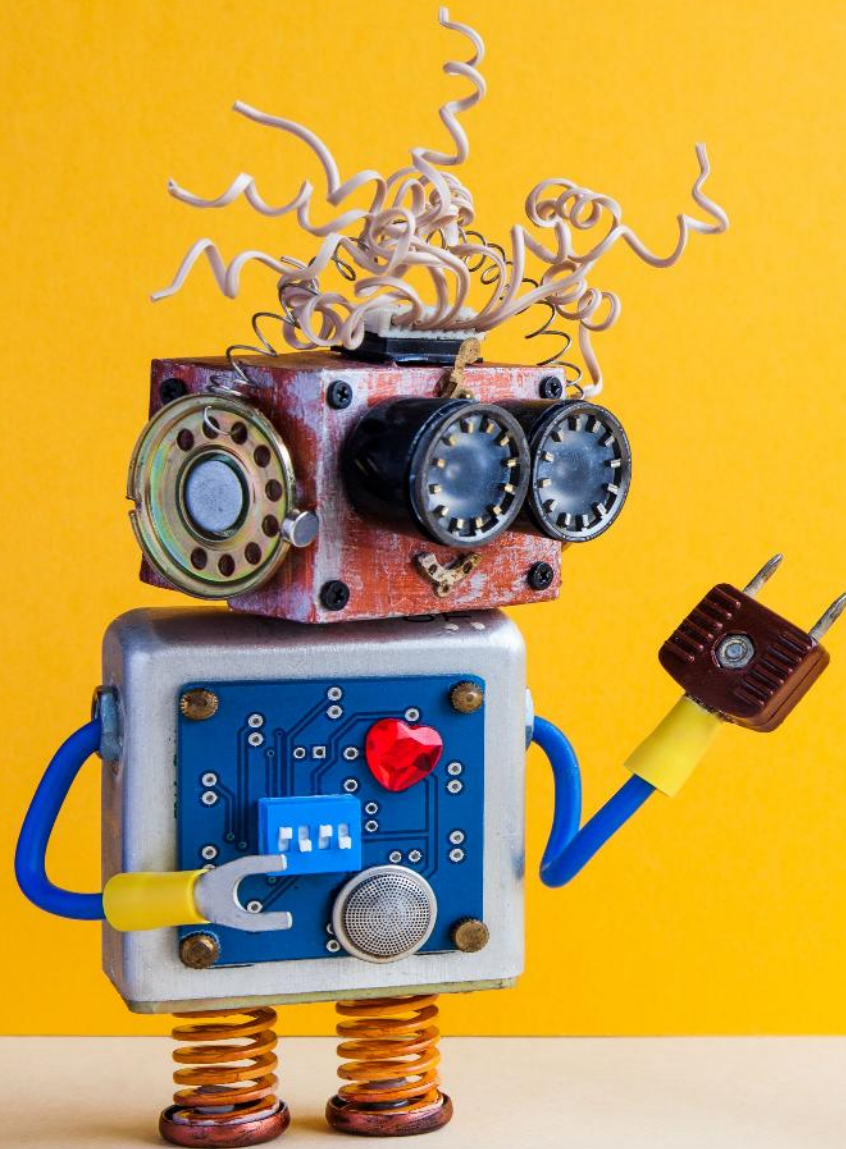
MES / ERP,...



JOIN our RG Smart Community

Scan WeChat Code now





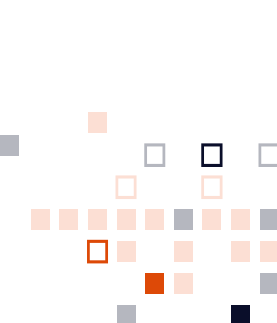
Thank you!

Sascha Reppel

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Phone: +131 67121008





experience

Who we are RG. Experience

>30+
EXPERTS

Advisory

Vendor Selection
Data Audits &
Strategy, Product
Experience Journeys

Delivery

MDM, PIM, ERP, MES
Reporting, B2BCommerce,
Syndication &
Data & Design Services



45+

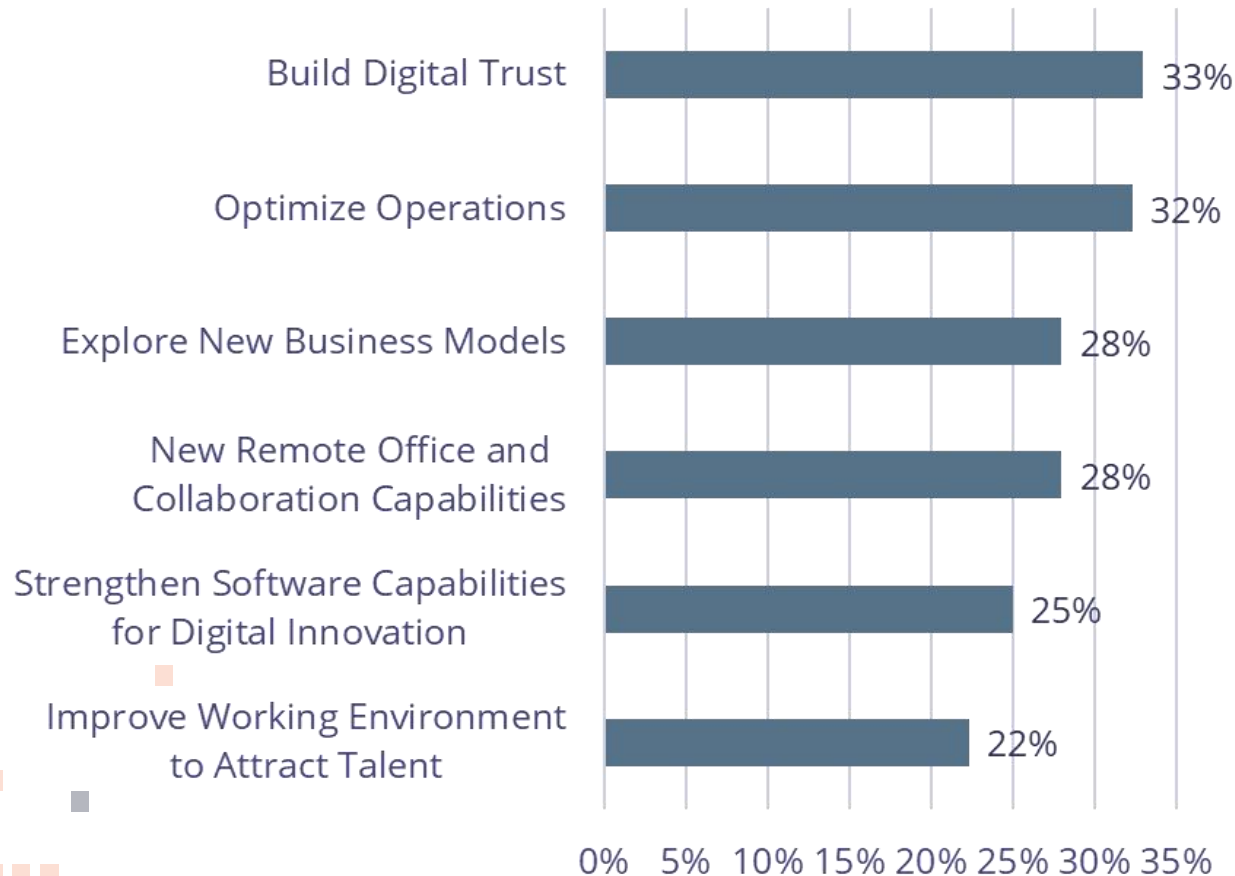
Customers
in APAC & Europe

Offices

Stuttgart, Melbourne, Shanghai,
Manila, Mumbai

Digital Transformation – Why should u care?

In order to address the challenges that arise as a result of COVID-19, which of these digital transformation areas should your organization be focusing on?



Focus on ROI:

“2024 is a year for safe bets only! This year we will only *invest in technologies that will enable us to reduce cost.*”

–CIO, IDC Advisory Board