

HOW TO ACCELERATE YOUR DIGITAL TRANSFORMATION WITH SOLUTIONS FROM PTC AND CAPGEMINI

Udo Lange, Stuttgart, 28 November

BRINGING TO LIFE WHAT'S NEXT

Strategy & Transformation | Creativity & Innovation | Technology | Data

CAPGEMINI INVENT IS CAPGEMINI GROUP'S
DIGITAL INNOVATION, CONSULTING AND
TRANSFORMATION GLOBAL BUSINESS LINE

VISION

At **Capgemini Invent** we ideate and bring to life what's next for our clients.

MISSION

By combining strategy, technology, data science and creative design expertise with an inventive mindset, we work with our clients to solve their most complex business and technology challenges.

PROMISE

Design and create advanced real-world digital solutions and business models of the future, resulting in new value creation and driving growth for our clients.

The Capgemini Group is a global leader in the evolving world of cloud, digital and platforms



Capgemini Group

Sub-Brands

Capgemini 

Capgemini  invent

sogeti
Part of Capgemini 

Services

Transformation & Innovation

Digital Services

Technology Operations

Business Services

Cybersecurity & Risks

Key facts

>40 countries represented

>200.000 employees

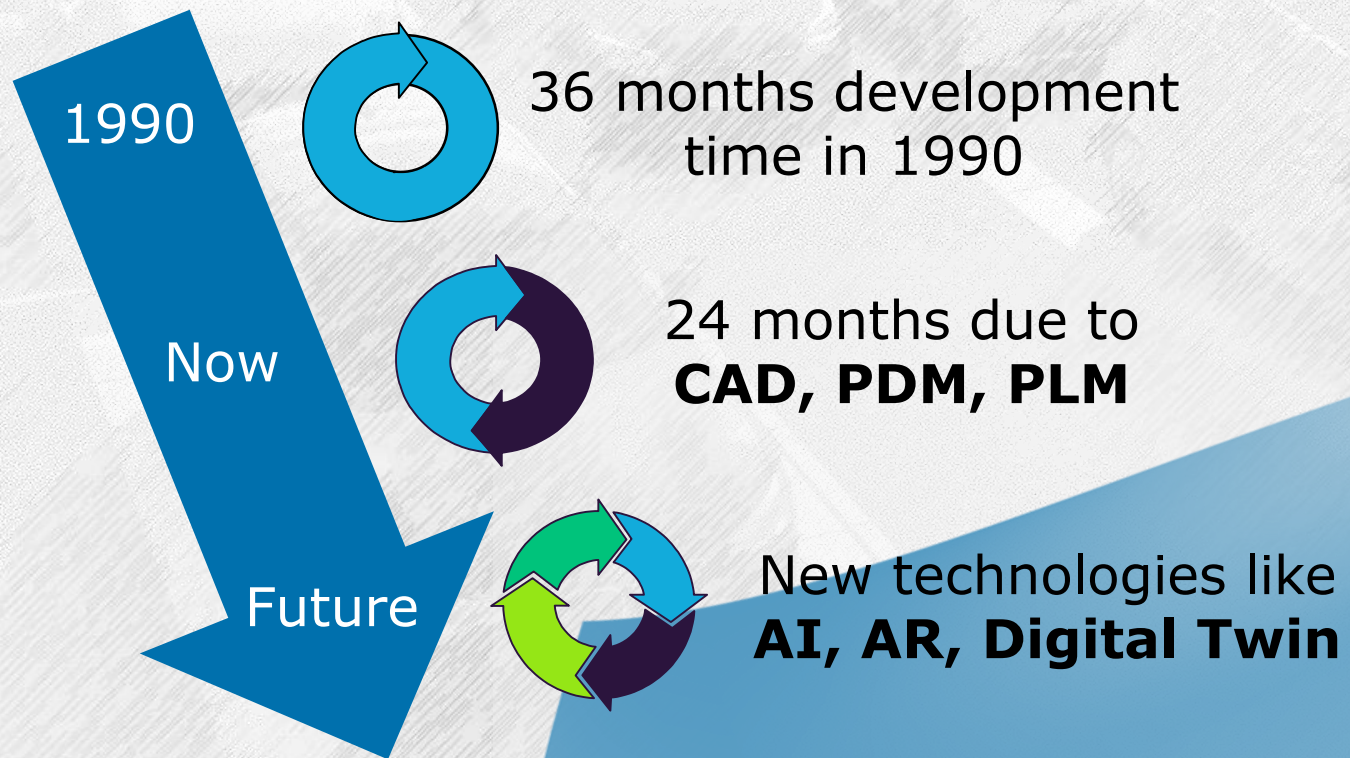
12.8b € revenue (2017)

Top 5 Mgmt. Consultancy

New technologies increase the need for short Digital Transformation Cycles

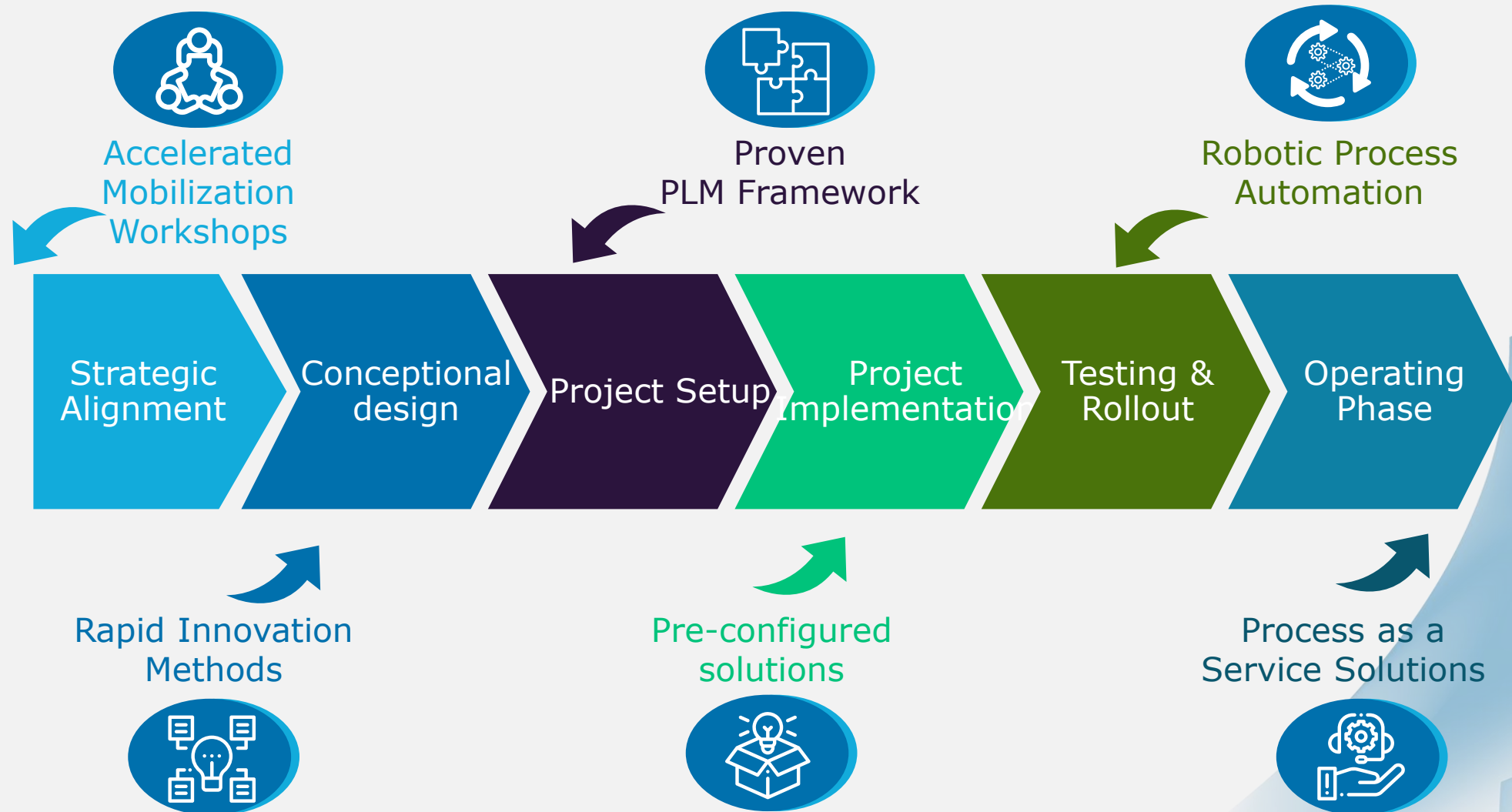


Example: Development Cycle in Automotive Industry



Digital Transformation programs must be **performed quickly** and **agile** to adapt to the accelerated innovation cycle!

Capgemini supports you in accelerating your digital transformation leveraging PTC technologies



The fuzzy front-end: get your organization mobilized with Accelerated Solution Workshops



Accelerated Mobilization Workshop



Project example: for a global construction equipment OEM we conducted a PLM Strategy & Roadmap workshop

- Collaborative PLM Strategy Workshops with cross-functional participants
- Proven Capgemini workshop methodology within our Applied Innovation Exchange in Munich
- Leveraging hands-on Demonstrators using various PTC technologies
- Create business buy in through active involvement
- Shape the PLM and IoT Target Picture as well as the Business Case
- Combine experiences of Capgemini, PTC and the client organization

Hackathons allow fast, hands-on conceptualization of innovative process solutions

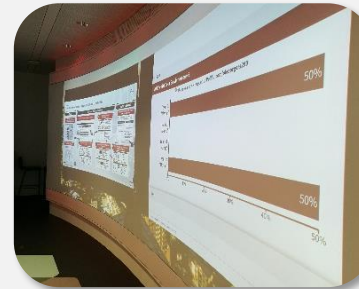


Rapid Innovation Methods

Project example: for a commercial vehicle OEM we used a Hackathon-Workshop to accelerate concept design and validation

- 3-day hackathon workshop with cross-functional participants
- Competitive positioning leveraging gamification to drive innovation and creativity
- Rapid prototyping with the support of PTC and Capgemini team members
- Using out-of-the-box functionality to define, create and validate use-cases
- Create in a short timeframe tangible workshop-results which can be directly transferred into project solutions
- Workshop approach allows participants to experience agile working methodology

“fast visualization”



“flexible technical implementation”

“combining different disciplines”



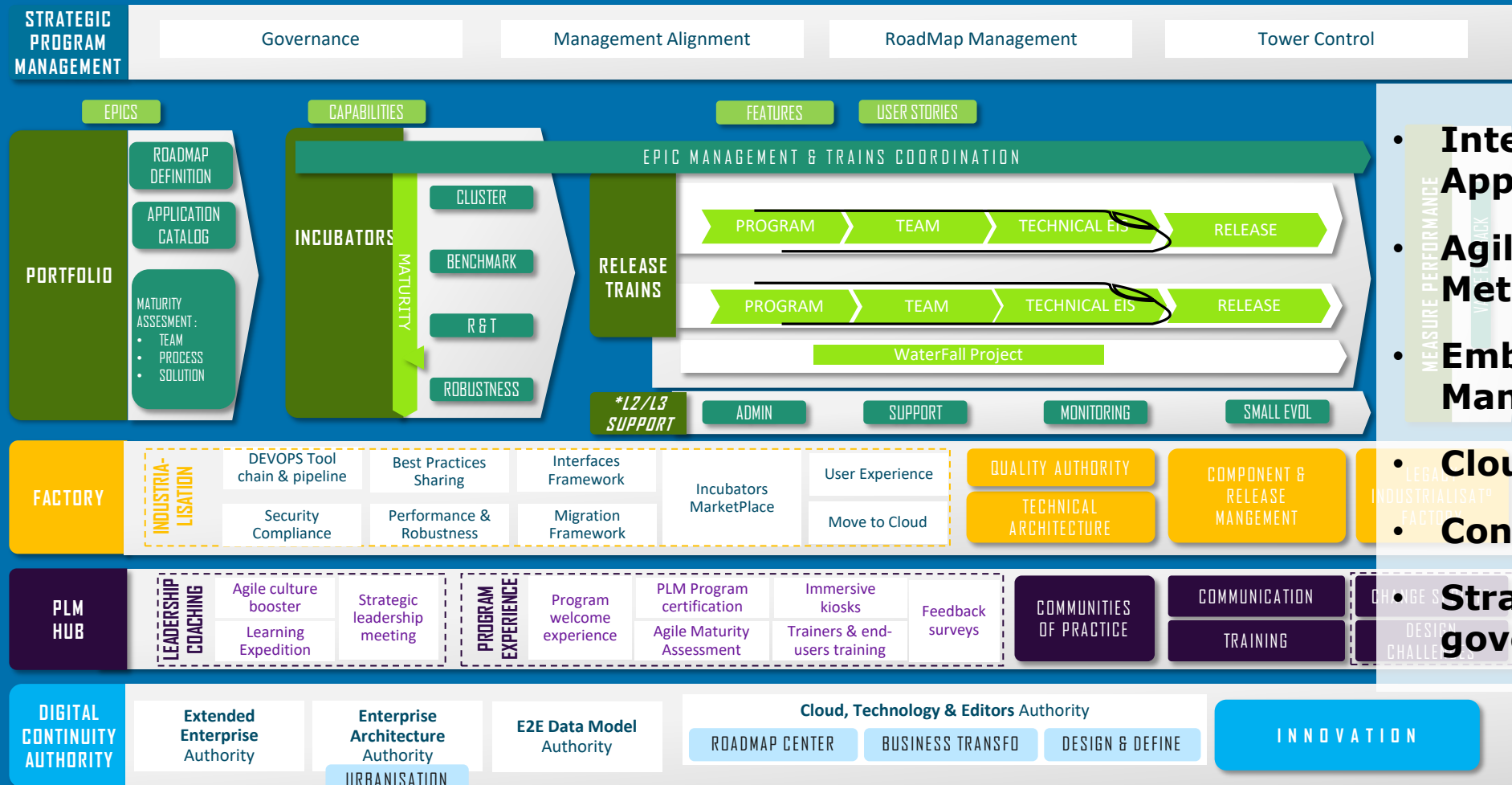
“agile approach”



With our proven PLM framework we leverage a toolbox for agile project setup with industrialized processes



Proven PLM Framework



- **Integrated DevOps-Approach**
- **Agile Implementation Methodologies**
- **Embedded Change Management**
- **Cloud-based hosting**
- **Continuous integration**
- **Strategic program and data governance**

RPA is a flexible tool to automate processes within projects like testing or master-data-creation

Robotic Process Automation for PLM Programms



Example: Daily data transfer between systems...

Human solution: Transfer data manually



High effort and error risk

Built-in automation: Use interfaces / APIs

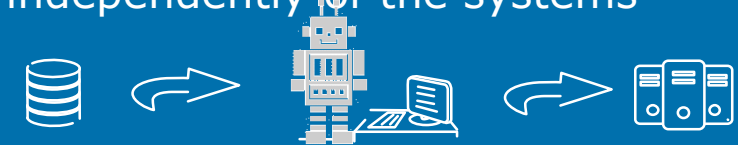


Implementation time and effort

Now imagine a robot in front of the computer!

RPA solution: Use a software robot that does the same steps like a human, but automated.

1. Robot is programed to reproduce the steps of the data transfer process
2. Robot simulates human input and works independently of the systems



➔ No errors in the transferred data and less time and efforts than humans or APIs

RPA is particularly suited for non value creating business processes with a high recurrence factor

Within the PLM process scope multiple use-cases can be identified for RPA automation



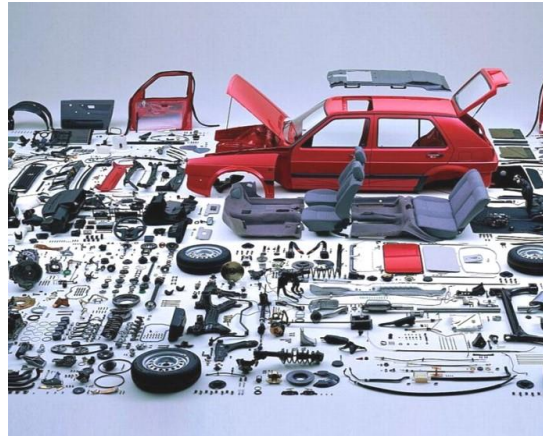
Robotic Process Automation for PLM Programms

PLM Implementation

PLM Implementation

Automated RPA regression testing of PLM functionalities

- Reduce time spent regression testing
- Secure quality of releases



PLM Rollout

Engineering Data transfer:

- Keep your data up to date during parallel PDM usage in rollout phase

PLM Operation

Engineering validation

Automated validation of product structures

- Verify structures are 100% vehicles
- Structure consistencies (4 wheels, one boot ...)

Data optimization

Cleaning of data inconsistencies between client systems (PLM / ERP / ...)

- Address data inconsistencies recurrently

Production validation

Generation of individual config. of produced cars

- Complete dataset of car (parts & suppliers, SW version, ...)
- Update at car servicing

Workflow operations

Cross system workflows

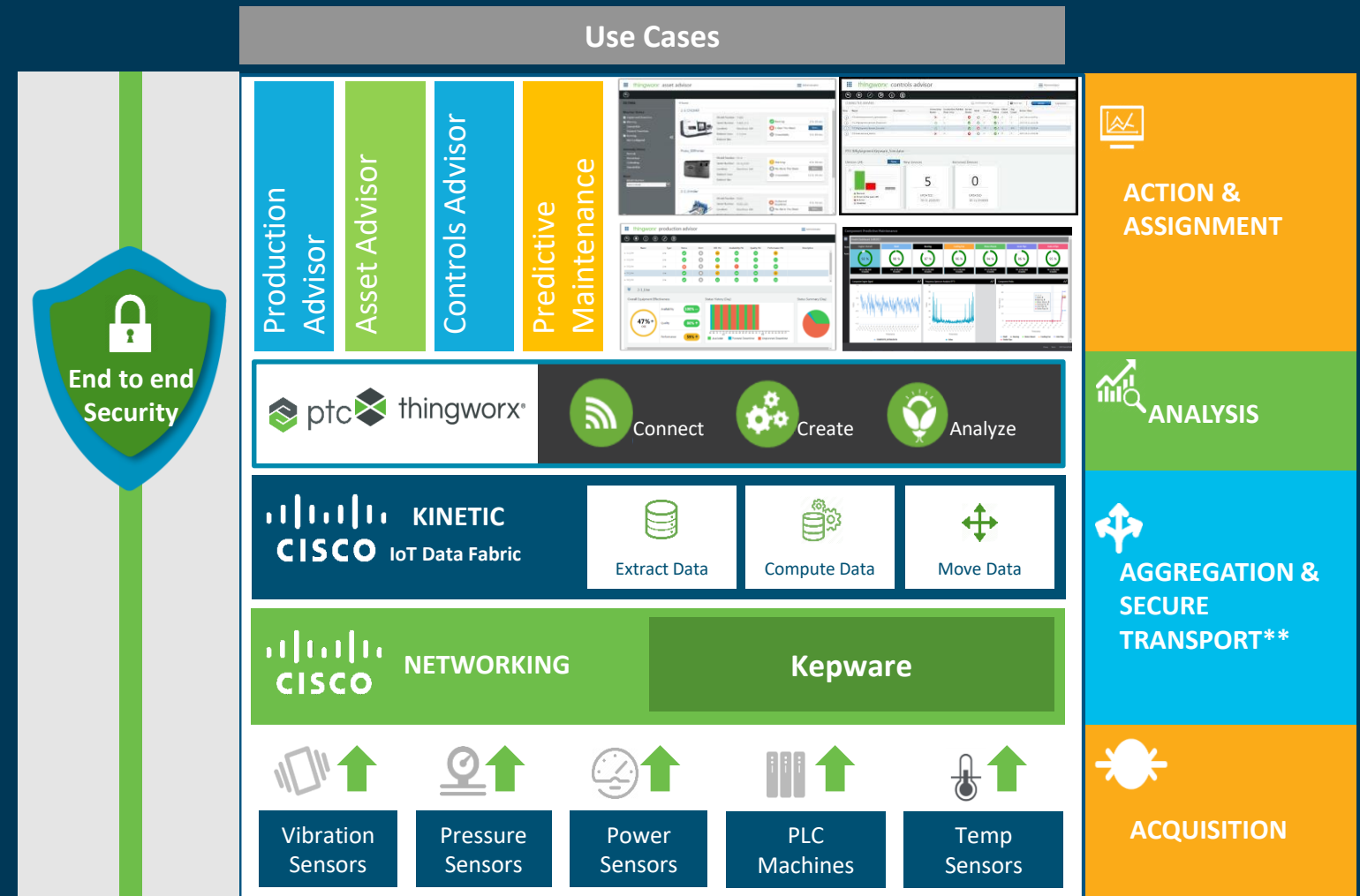
- Extend system integration without complex interfaces or hands-on scripts



Capgemini partners with Cisco and PTC to develop and provide IoT Solution as ‚Plant-in-a-Box‘

Pre-Configured Solutions: ‚Plant-in-aBox‘

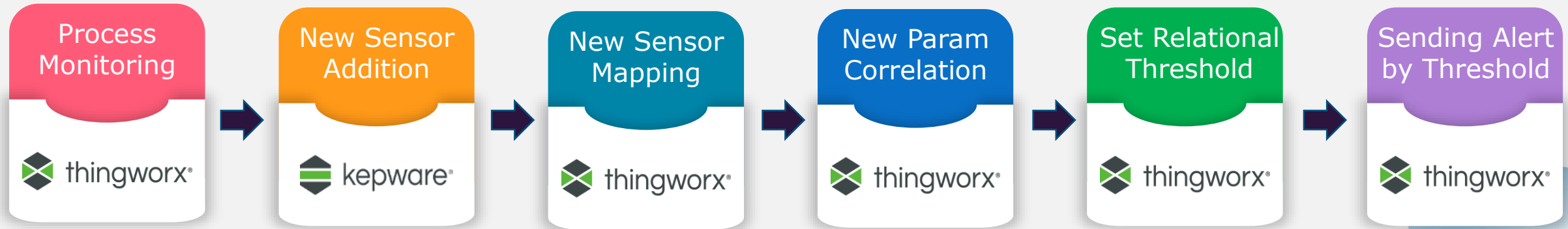
- Based on Capgemini's 5A-Layer-Concept for IoT
- Basis kit for starters
- Ready to run in 3 months
- Proof of Value, High Agility development & rapid deployment
- Edge deployment to solve most critical manufacturing use cases
- PTC Kepware for data acquisition; Kinetic for Aggregation & Transport; PTC Thingworx on Edge box
- Capgemini configured Thingworx manufacturing apps integrated with Capgemini Predictive maintenance



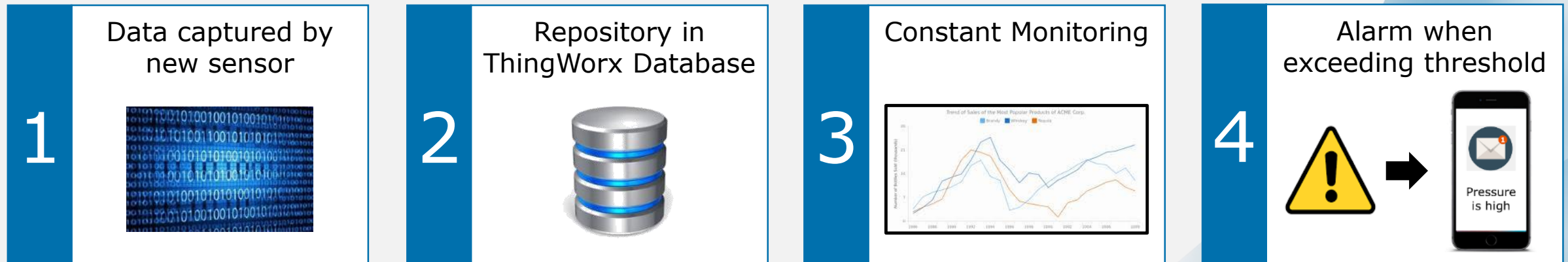
The 'Plant-in-a-box' is a basic solution scenario offering standard use-cases for plant operations using big-data

'Plant-in-a-box' – Starter Set

Exemplary Workflow:



Solution environment:



In our joint PTC/Capgemini Technical Publication CoE we offer fastest time-to-value with process outsourcing



Overview

- End-to-End Technical Content Management Services
- Strong Domain & Tool Expertise: 500+ employees
- Quick Transition & Process Transformation
- Technology Driven Enhancements
- Delivered over 3 million hours of Technical Content Management Services.
- Transition from Vendor to Partner relationship

Standards

- ATA 100 & iSpec2200
- S1000D
- DITA
- ASD-STE 100
- Client-specific Guidelines & Style Guides

Our Delivery Center



Domain Served



Aerospace



Automotive



Transportation



Construction, Agricultural & Heavy Machinery



Oil & Gas, Process Industries & Utilities

Portfolio of Services



TECH PUBS SUITE

- Tech Pubs Suite Strategy (Tools / Database)
- Support to Business Rules (Brex/DTD)
- Creation of Style sheets, Schemas, DTD, etc.



DITA S1000D



ENGINEERING DOCUMENTATION

- Operation, Service, Maintenance & Assembly Manuals
- Spare Parts Catalog & Service Bulletin Writing
- Manuals for Configuration Management



LEGACY MIGRATION

- Migration to New Standards (S1000D / DITA)
- Paper to Digital / Legacy (pdf or doc) to XML
- Graphics – Raster to Vector Conversion / 2D to 3D conversion / Raster to Intelligent Wiring



PUBLISHING

- Post Script to XML
- CD / DVD
- Web Portal
- Standalone product
- Mobile / iPad Apps



ADDITIONAL SERVICES

3D INTERACTIVE PUBLICATIONS

- Publication Enhancements
- 3D Hotspots
- 3D Publications - pdf /HTML/Interactive
- Intelligent Wiring



SPECIALIZED SERVICES

- REAch Compliance
- Augmented Reality
- Web Troubleshooting
- Customer Response Support
- Enhanced Job Instruction Cards (JIC)
- Methods Planning
- eLearning

Full-fledged Stack of Services Enables Client to be Highly Competitive

Discuss your challenges with our experts at the booth P5 in the conference area!



PTC Windchill

Thingworx

Kepware

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PLM Strategy & Transformation

Digital Services & IoT

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Visualization (AR/VR)

Agile Product Development

Capgemini  invent

Udo Lange

Vice President

Head of Engineering & Product Excellence



Phone: +49 151 4025 1159

E-Mail: udo.lange@capgemini.com



People matter, results count.

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ABOUT CAPGEMINI INVENT

As the digital innovation, consulting and transformation brand of the Capgemini Group, Capgemini Invent helps CxOs envision and build what's next for their organizations. Located in more than 30 offices and 10 creative studios around the world, its 6,000+ strong team combines strategy, technology, data science and creative design with deep industry expertise and insights, to develop new digital solutions and business models of the future.

Capgemini Invent is an integral part of Capgemini, a global leader in consulting, technology services and digital transformation. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of 200,000 team members in over 40 countries. The Group reported 2017 global revenues of EUR 12.8 billion.

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