SMART INDUSTRY / INDUSTRY 4.0

BY THEO J.A. DE VRIES

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ABOUT VIRO AND ABOUT ME
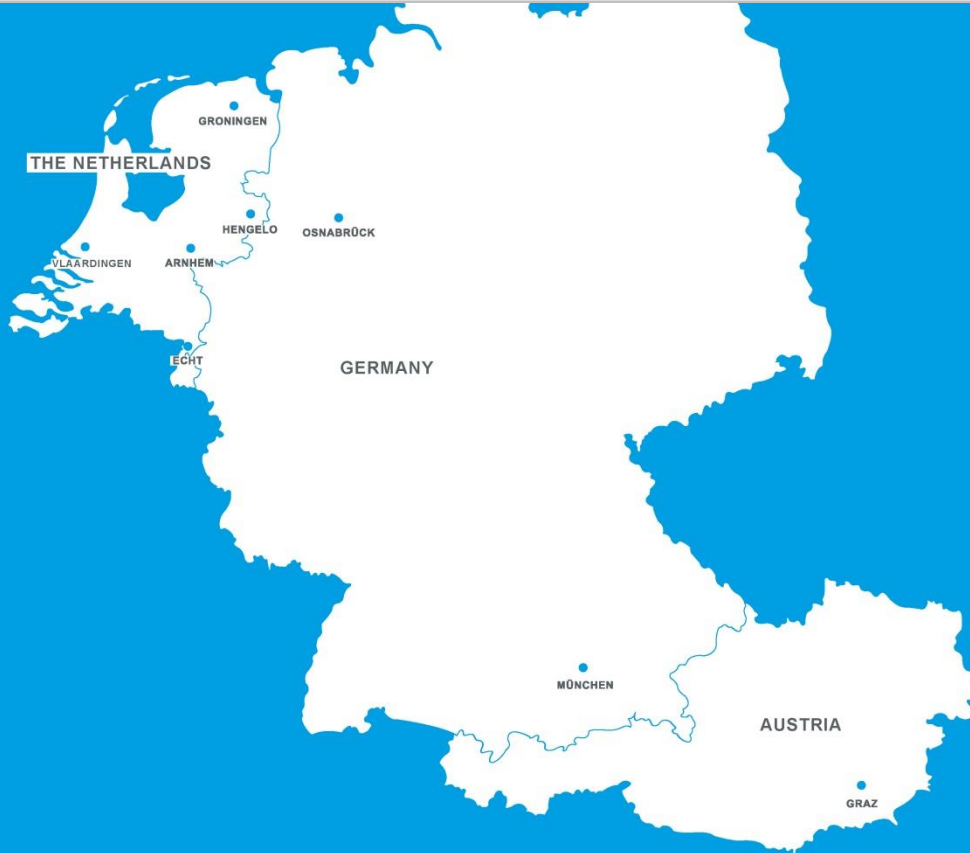
PROJECT EXAMPLE

SMART INDUSTRIAL MACHINERY (SIM)

TRENDS IN SIM

CONCLUSION

VIRO

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ABOUT VIRO

THE NETHERLANDS

GRONINGEN

HENGELO · OSNABRÜCK

VLAARDINGEN · ARNHEM

ECHT · GERMANY

MÜNCHEN

AUSTRIA

GRAZ

International engineering firm
Worldwide clientele & projects

600
passionate staff

8
branches

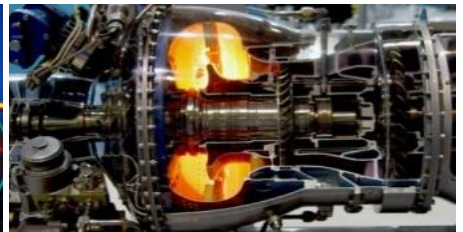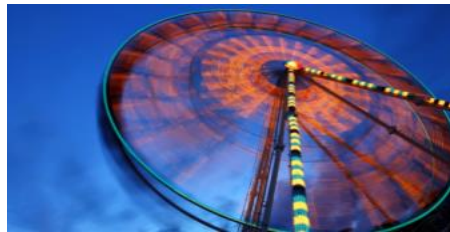Family business

OUR MISSION

To unburden industrial organisations and enable them to improve their performance by combining capacity and flexibility with expertise and innovation
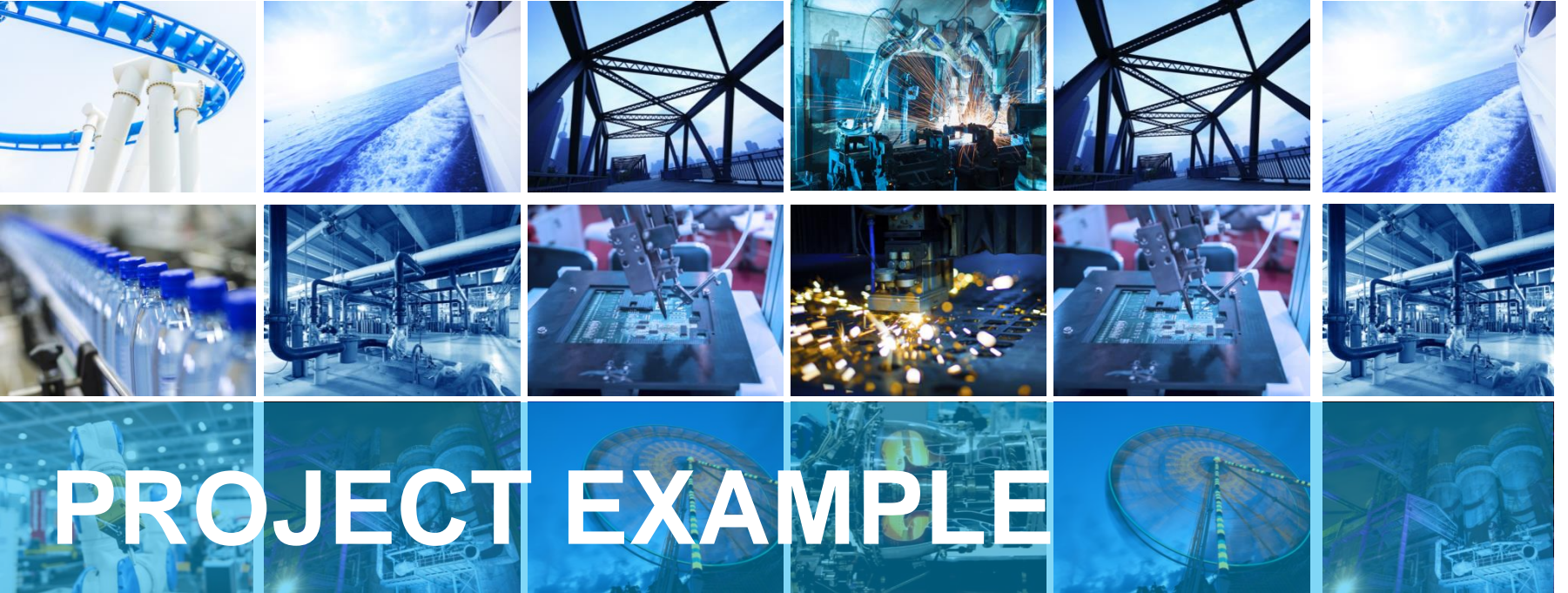
OUR CORE BUSINESS

Project management & Engineering

ABOUT ME

- Work at VIRO since 2015

- Manager of departments Software & Control and Electro & Instrumentation

- Also associate professor in Intelligent Control and Mechatronics at University of Twente

- https://www.linkedin.com/in/theojadevries/

PROJECT EXAMPLE

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PROJECT WITH IMS ALMELO

IMS TAKING YOU STEPS AHEAD

ABOUT IMS

Your business case is our guiding principle. We design and build production lines for the manufacturing of small, assembled products.

Let us take you steps ahead!
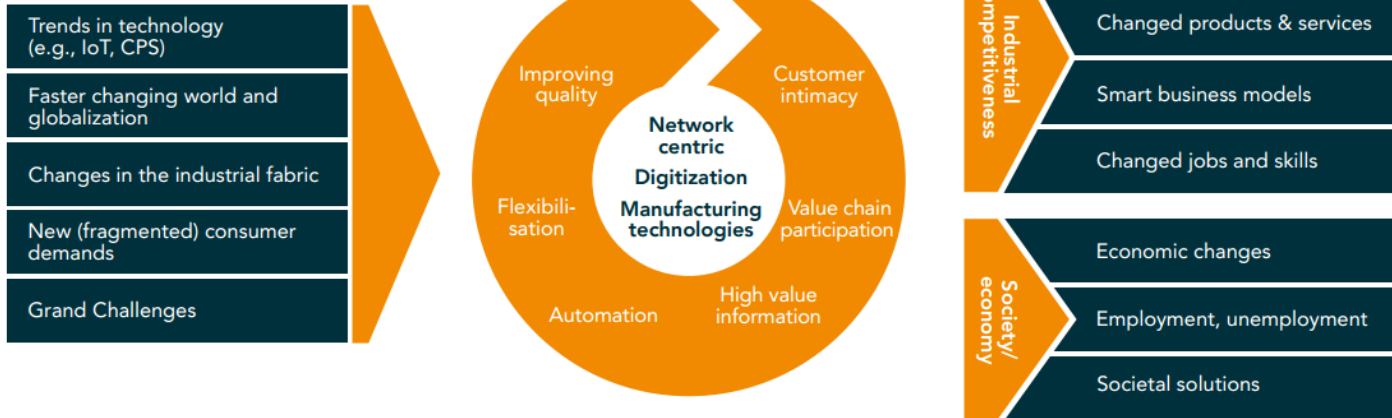
INDUSTRIAL MACHINERY

- Production facilities that are used by industries for discrete production; B2B

- Capital-goods

- Disciplines: mechanical, electrical, drives (electrical, pneumatic, hydraulic), PLC control

- Development =

  - Where possible: integration of existing partial solutions

  - Where needed: generate (reusable) new partial solutions

SMART INDUSTRY

www.smartindustry.nl/publicaties/

"**far-reaching digitization and interconnection of devices, means of production and organizations (the 'internet of things') which create new ways of production, new business models and new sectors**"
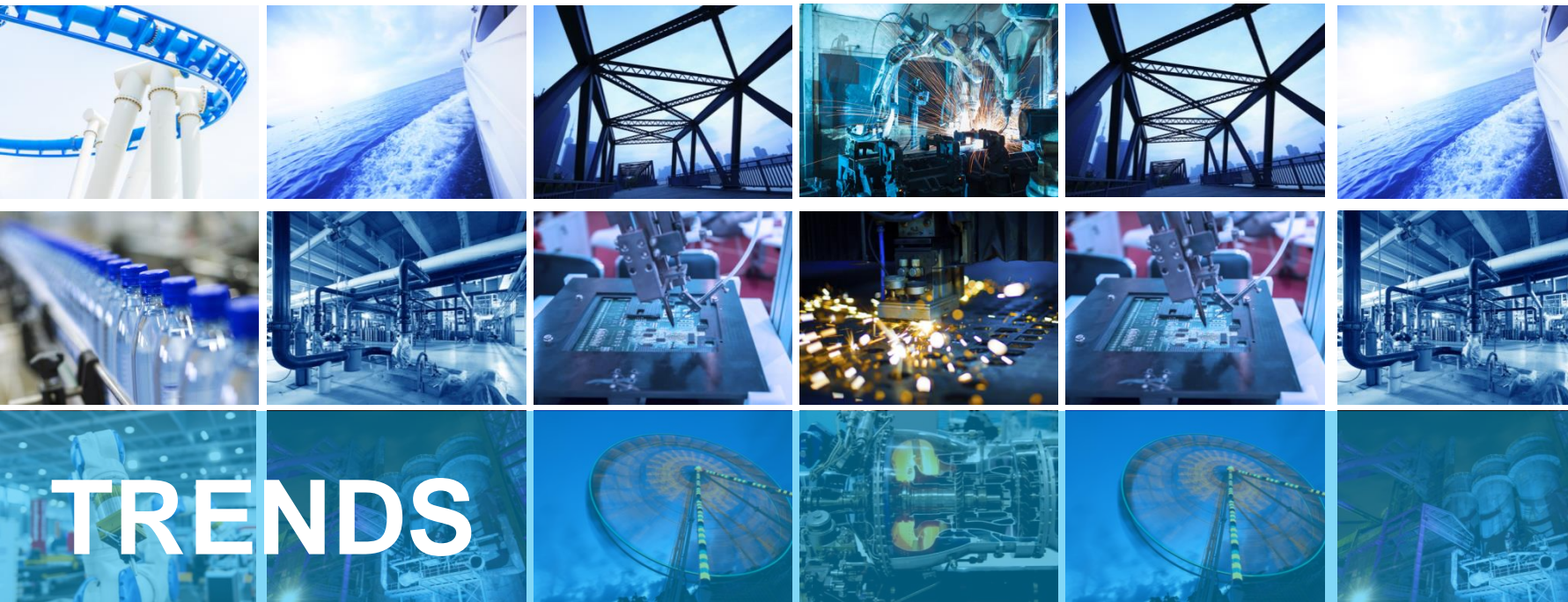
PROJECT WITH IMS ALMELO

Smart Industry production facility for medical devices

Now up and running at the customer of IMS

SMART INDUSTRIAL MACHINERY

Trend 1: Modularisation & flexibilisation

Production system is

- Composition of modules with an adaptation layer,

- Able to adapt to changes in product specs and customer requests

Necessary because production system needs to be used

longer than the period that a specific product is produced

Questions for machine engineering:

- How modular?

- How autonomous?

- In what way?

SMART INDUSTRIAL MACHINERY

Trend 2: Service in a network

instead of system at a location:

- Machine = part of a value chain

- Value is in usage, not in ownership

- Information is key:

  provide all users timely with the right information and access (remotely)

"Goal: availability of an efficient and effective discrete production facility"

| Acquire | Concept & Exploration | Design & Development | Prototype & Pilot | Industrialization | Production | Service & Support | Phase out & Disposal |

SMART INDUSTRIAL MACHINERY

Trend 3: Business Intelligence

machine is source of information and
opportunity for optimalisation

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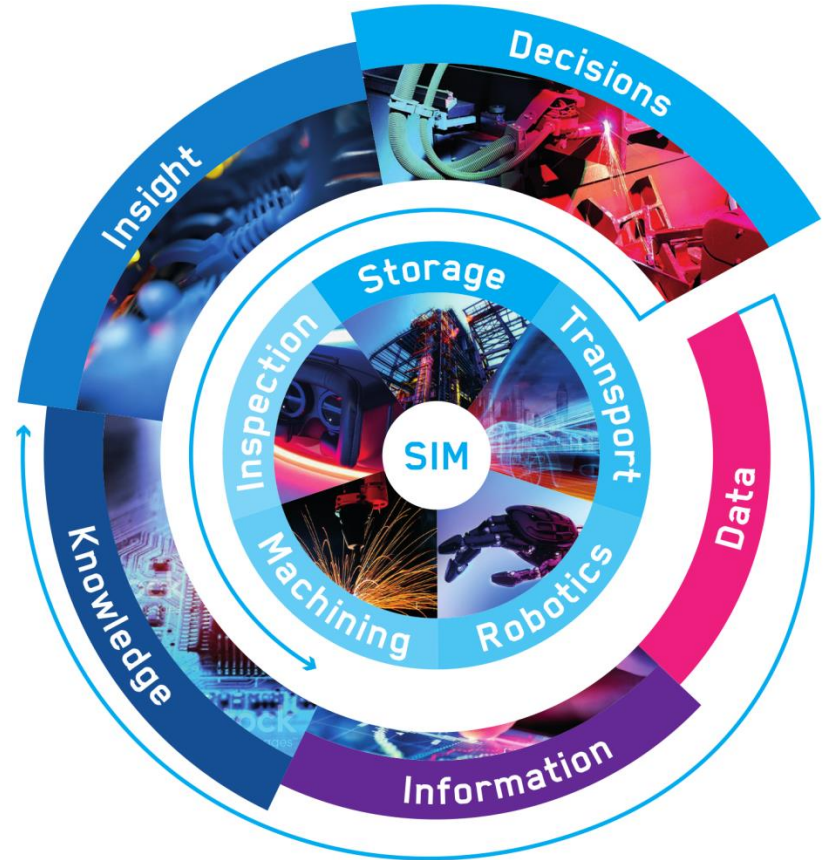
SIM @ VIRO

- Disciplines:

  - Software Engineering & Industrial Automation

  - Electrical Engineering

  - Mechanical Engineering & Engineering Analysis

  - Project Management & Systems Architecture

- Projects & Consultancy

- Machine engineering, discrete production

Projectmanagement — Systeem Architectuur

- Mechanisch
- Plant Design
- Engineering Analysis
- Elektro & Instrumentatie
- Industriële Automatisering
- Software & Control
- Constructie & Bouwkunde
- Veiligheid

Expertise — Project-management — Co-development — Capaciteit — Engineering — Turn-key — Core klant
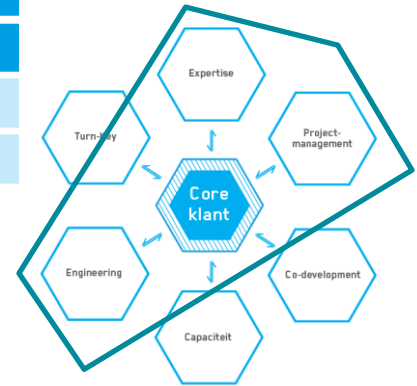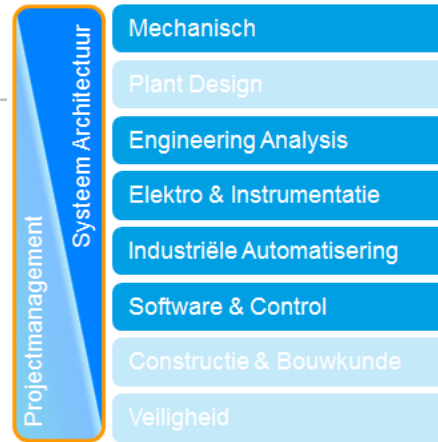
PRODUCT ENGINEERING

MACHINEBOUW

INDUSTRIËLE PROJECTEN

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IN CONCLUSION

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SMART INDUSTRIAL MACHINERY

- Excel in machine engineering (remains of importance!)

- Add functionality via software & connectivity

- Then

  - More modularity and flexibility in order to be able to adapt

  - Better service and more value to offer in the value chain

  - Gather data, create knowledge, obtain insight and optimise

WE ARE HERE TO HELP

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