

miprotek
Company for automation systems



industry 4.0

Practical experience

History of miprotek



- 1983 – Founded in 1983, started with MIPRO
- 1987 – Established as miprotek GmbH (12 employees)
- 1988 – **Mipro 2000** (with PAS 2000)
- 1997 – **Mipro 4000i** (RealTime OS / Interbus Feldbus)
- 2000 – Movement to Buxtehude, first internal network (30 employees)
- 2007 – Own subsidiary: surprise about the costs of network
- 2008 – 2013/2014 – **MIPRO M4** (Win8 / PLC)
- 2016 – Discussion about supply chains in asphalt industries

**We have
been 3.0**



History of key items

- **1.0 Power by**

- steam and
- Water

- **2.0 Optimisation by**

- Assembly line
- Conveyer line



- **3.0 Digital revolution**

- Actuator
- Sensors
- Intelligence
- Administration & technical

- **4.0 Internet of things**


- All 3.0 items

+

- Dynamic
- Velocity
- Transparency
- Security
- Internet

The way to industry 4.0

- **MRP I and MRP II**
- **ERP**
 - Material &
 - Capacity
- **Electronic data exchange** (edifact, **SCM**)
 - VDA (OEM German)
 - Odette (OEM Europe)
 - ...
 - Several other Supply chains
- **MES**
- **Internet**
 - B2C
 -
 - B2B
- **Platforms “[openfactory](#)”**
- **Virtual Markets**
- **Dynamic Markets**
 - not cost driven
 - but time driven
- **Dynamic, Virtual Markets**



Definition of
keyword 4.0

What is Industry 4.0 and the „mind set“?



**YOU ARE
4.0**

• Problem

- Promotion by academic and consulting institutes
- Promotion by young people
- A theme for big organisations
- It is difficult to plan
- You need it

• Opportunity

- It is not new technology
- It is proved
- It is a hype
- You can manage it

Examples



- **Wheels**
 - Car
 - Motorbike
- **Home Heating systems**
- **Solarpanels**
- **Picture a'la CEWE**
 - One product company
 - Digital more product company
 - Global player for printed multimedia products
- **Discussion about 3D plotting**

Main costs of implementation

- Finding the needs
 - Integrated view to the target
 - Description of processes

These are the main costs

- Hardware:
 - Server
 - Devices
 - LAN / WAN / VPN /
- Software
 - Application
 - MES
- Automation solutions

**This is basic
„Food is not dinner“**

Main costs of implementation: The needs

- Integrated view to the target
 - All (own) departments
 - Customer
 - Supplier
- Description of the process
 - Like ERP
 - Japan approach



- Display patience → it is a way, not an action
- Budget
- Ideas & Flexibility → Young people

Main costs of implementation: Hardware / Devices



- Shop floor
 - Strong PLC level
 - Integration PLC Level
 - Flexible sensor level
 - Modern Actuators (temperature,)
- (Scanned) Material Management
- Shop floor data collection process
- Strong database system
- Mobile devices
- Internet platform (possible as Intranet)

Main costs of implementation: additional Infrastructure



- Database with
 - Best performant analysis
 - Dynamic report generation
- KPI System and mentality → **Main point: Processes**
- (used) Mobile Devices for alarm tracking
- Alarming systems and self regulation algorithm's

Main costs of implementation: Software



- Process modelling system
- Material Management
- HMI Interfaces
- Capacity scheduling
- (online) Financial Management system
- MES System

- Database integration
- Integration protocols (machine, business software,....)

Main costs of implementation: Training & new Employees



- Training for
 - Doings & consequences
 - Modern systems
- New Employees?
 - My opinion:
 - Employees need other skills, but still knowledge about your business (process)
 - Management will or could be the problem

Benefits & Main Earns

- Reducing costs
- Faster processes
- More flexibility
- Young employees
- Described complex processes
- Marketing for your company
- Supply chain possibilities
- Bigger online market

**Think about:
The fast one wins
the race, not the
big one !!!**

Thank you!

We are medium sized long time experienced with all electronic process for

- saving 3.0
- enabling 4.0

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