¿Qué industrias tendremos tras la era industrial?

Manfred Wannöffel
Office of Cooperation RUB/IMU

The Detroit Project

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BACKGROUND

- Foundation 1975 / 1979
- Contract between RUB and IMU
  - Central Institute of RUB
- Equal Working Committee
- Bridge between Science and Labour

ACTIVITIES

- Research Cooperation
- Formation Projects
- Further Education
- Lecture
BOCHUM – Industrial Developments since 19th Century

Coal | BOCHUM 1.0

Steel | BOCHUM 2.0

AUTOMOBILE | BOCHUM 3.0

Source: RUB
BOCHUM 4.0 – Knowledge Based Urban Development

Source: RUB
Organisational structure

Based on City Council Approval:
Mission:
Advancing Bochum’s image as a city of science

**UniverCity Bochum Organization chart**

**Image**
Marketing strategy

- Project office UniverCity Bochum
- Bochum Marketing as Project Agency
  - Lead project(s) development
  - Marketing / PR
  - Networking / Communication
  - Acquisition of third-party funds

**Steering Committee**

- Strategy
- Organisation
- Funding

**Fields of action**
Overall strategy

- Networking management UniverCity Bochum
- City of Bochum / mayor
  - Framework development including ‘economy’, ‘urbanity’, ‘education potential’ as lead activities
  - Topic-related working groups (e.g. ‘economy’ managed by Chamber of Commerce)
  - Organisation of steering committee meetings

**Coordination Committee**

- Strategic think tank
- Planning
- Coordination
- Implementation

Supported by:

- Stadt Bochum
- EBZ Business School
- Ruhr Universität Bochum
- RUB
- Evang. Fachhochschule Rheinland-Westfalen-Lippe
- University of Applied Sciences
- Hochschule Bochum
- Bochum University of Applied Sciences
- BOKU
- hsg
- IHK Mittleres Ruhrgebiet
- TFH
- Deutsches Bergbau-Museum
- Bochum Marketing
- Folkwang Universität der Künste

Source. UniverCity Bochum
### Background
- Integrated in the pilot plant

### Learning Factory & production area

#### Start
- First Learning Factory seminar
- LEGO® Learning Factory
- 2009

#### CIP*1
- Process Learning Factory
- 2010

#### Implementation
- MAO Seminar *2
- Co-determination
- 2011

#### CIP*1
- MAO Seminar
- Change Management
- 2012

#### Implementation
- Learning Factory for Resource Efficiency
- 2013

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*1 Continuous Improvement Process
*2 Management and organization of work

Source: LPS at RUB
Structure of the LPS-Learning Factory

- LPS Learning Factory: for process optimization
- LPS Learning Factory: for management and organization
- LPS Learning Factory: for resource efficiency

Source: LPS at RUB
Knowledge transfer - LPO

- Process optimization

**Process Improvement**

**LEGO®**
- Standards
- Division of Work
- Visualization

**5S**
- Waste
- 5S
- Audit

**Value Stream I**
- Pull
- Kanban
- Supermarket
- JIT/JIS

**Value Stream II**
- Leveling
- Amount Division

**Process Improvement**
- Sum Up

Source: LPS at RUB
Order: 500 pieces of product X within a week

- Load magazine!
- Capacity blocked until Friday
- Not available on Saturday!
- I can work on Saturday!
- Switch me on!
- I’ll load the magazine
- To be delivered in 2 hours

Source: Fraunhofer/IAO
Structure of the LPS-Learning Factory
Management and Organization of Work

- Focus: co-determination
- Cooperation: management and labor union
- Focus on human/workers:
  - handicaps
  - Social background
  - laws

Source: LPS at RUB
Knowledge transfer – MLO

- Management and Organization

Source: LPS at RUB
Structure of the LPS-Learning Factory

- **for process optimization**
- **for management and organization**
- **for resource efficiency**

Source: LPS at RUB
Idea

- Resource-productivity seems to be one answer to multiple challenges
  - to produce more with less material
  - to save the environment
  - to create additional stakeholder transparency
  - to sensitize deciders (management)

- A resource efficiency learning factory can help to sensitize and train employees for the new field of resource efficiency

- The learning factory is also used for testing research results:
  - One new research field is the tracking of the current resource consumption in the learning factory with MES

Average cost structure within German production sector (2011)

Source: LPS at RUB
Knowledge transfer - LRE

- Resource Efficiency

Source: LPS at RUB
Learning Factory as the Nucleus of WORLDFACTORY

Source: LPs at RUB
WORLDFACTORY: Realization on GM/Opel Areas
Thank you very much for your attention!

manfred.wannoeffel@rub.de
http://www.ruhr-uni-bochum.de/rub-igm/