



Benchmarking: Digital Manufacturing Networks

Evolution of network agility and coordination by cross-plant manufacturing operations management

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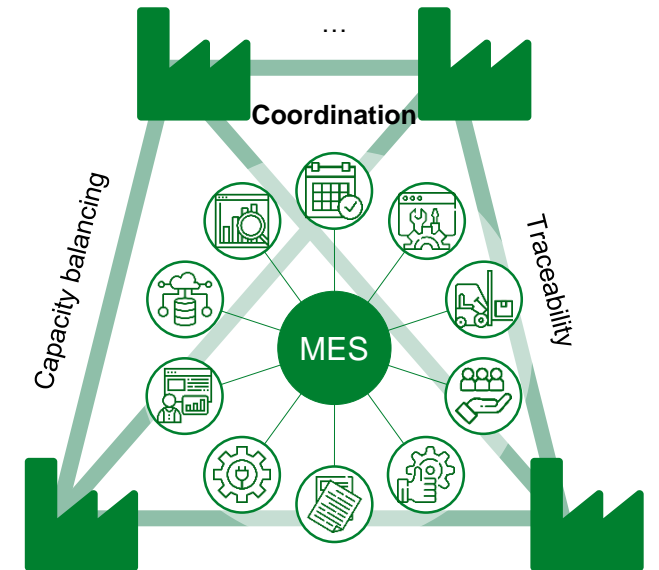
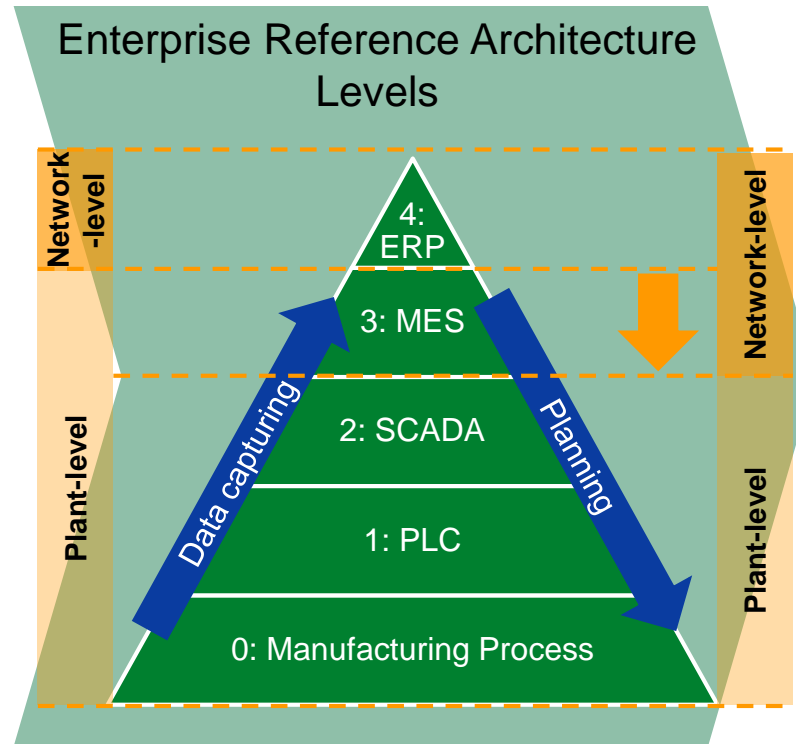
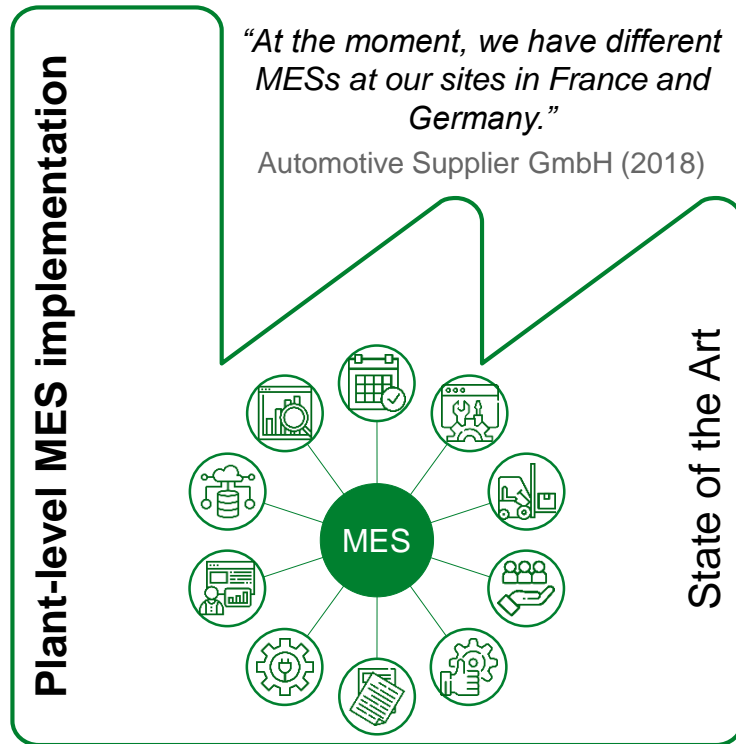
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St. Gallen

*“From insight
to impact”* 

Vision

Steer your international manufacturing network like one virtual plant thanks to cross-plant MES

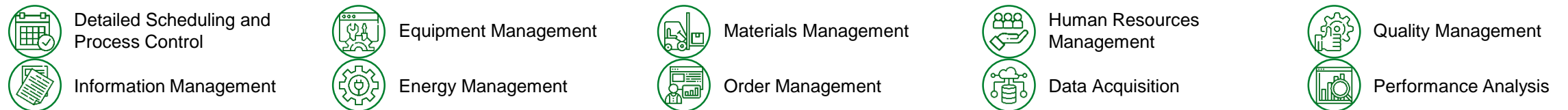


Network-level MES implementation

“We use one global MES template for all our sites”

Electric Motors Manufacturer GmbH & Co. KG (2018)

Tasks of manufacturing operations management by a Manufacturing Execution System (MES)



Sources: ITEM-HSG; IEC 62264-3; ISA-95; VDI 5600 | ERP = Enterprise Resource Planning; SCADA = Supervisory Control and Data Acquisition; PLC = Programmable Logic Controller (DE: SPS)

Motivation and Objective

Coordinate between shop floor and management as well as across plants by digital means



More and more **volatile** and **uncertain markets**, **new regulations** and **technologies** as well as **competition** from **low-cost countries** challenge manufacturing companies on a global scale.



An **agile** and **holistic manufacturing network structure** addresses these challenges best. The **key element** of such a structure is the successful **coordination** of plants with regard to resources and knowledge.



We want to evaluate how **cross-plant Manufacturing Execution Systems (MES)** can support this **coordination** and **agility** by making a decisive contribution to manufacturing **transparency** and **steering** abilities.

Possible Benchmarking Questions

Selection

Implementation

Use

- Is a **cross-plant MES** implementation **needed** for this kind of coordination?
- What **criteria** should be used for MES and MES provider **selection**?
- What is the **cost-benefit ratio**?
- Which **areas/tasks** shall be connected to the MES on **plant- & network-level**?
- How to **track** the **implementation**?
- Which **internal/external knowledge** is necessary and how to **handled** it?
- How can the **employees** be **enabled** to live this active **coordination** by MES
- How is the **coordination improved**?
- What changes through better coordination and resources **transparency**?

Your Benefits as a Consortium Partner

As a partner you steer the scope of this study and profit directly from access to experts



- You **influence** focal points, precise **topics** & **define** benchmarking **questions**



- You benefit from the **detailed screening results**



- You visit **5 successful practice companies** & **exchange** with experts on-site



- You have the opportunity for **networking** with other partners & industry experts



- We ensure **effective** and **efficient procedures**



- We provide you with a competent **project organization**, including, among others:
 - Preparation of the kick-off, review and final meeting
 - Questionnaire design
 - Distribution of questionnaire and evaluation of the survey
 - Derivation of cases and recommendations of successful practice companies
 - Preparation of site visits and documentation of the whole benchmarking

«The very structured approach in the benchmarking was an excellent exercise to analyze our production network and an eye-opener for areas, we have not touched yet.»

Arthur Eckert
VP Global Product Line Special Purpose Drives
ABB Switzerland Ltd, MV Drives

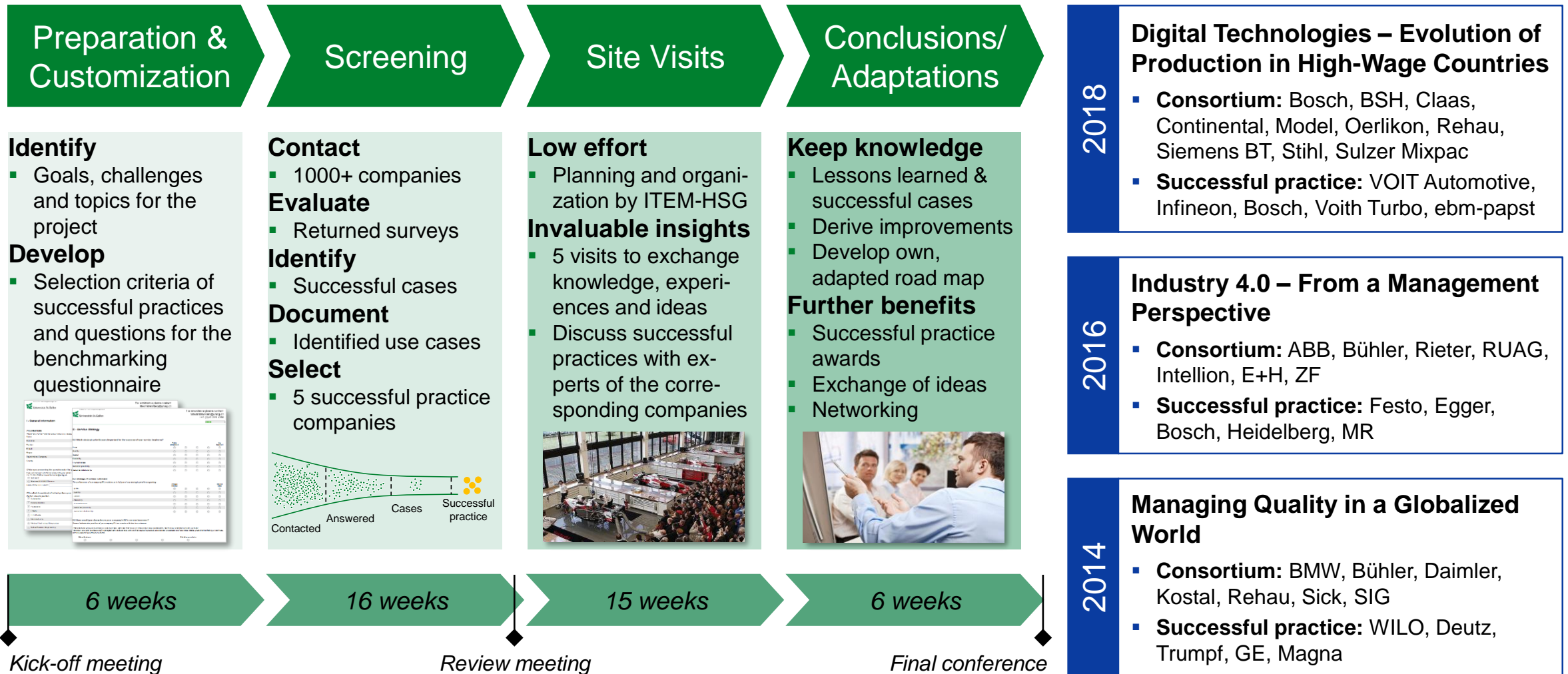
«The professional benchmarking was a great success for our company and allowed a goal-oriented approach to our questions. The in-depth questions of the benchmarking were answered and have been a great input for new approaches to our problems.»

Michael Bourhenne
Global Support Manager International Production
Eagle Burgmann Germany GmbH & Co. KG

Almost **100 successful benchmarking projects** performed by ITEM-HSG guarantee high quality, scientific validity and invaluable insights

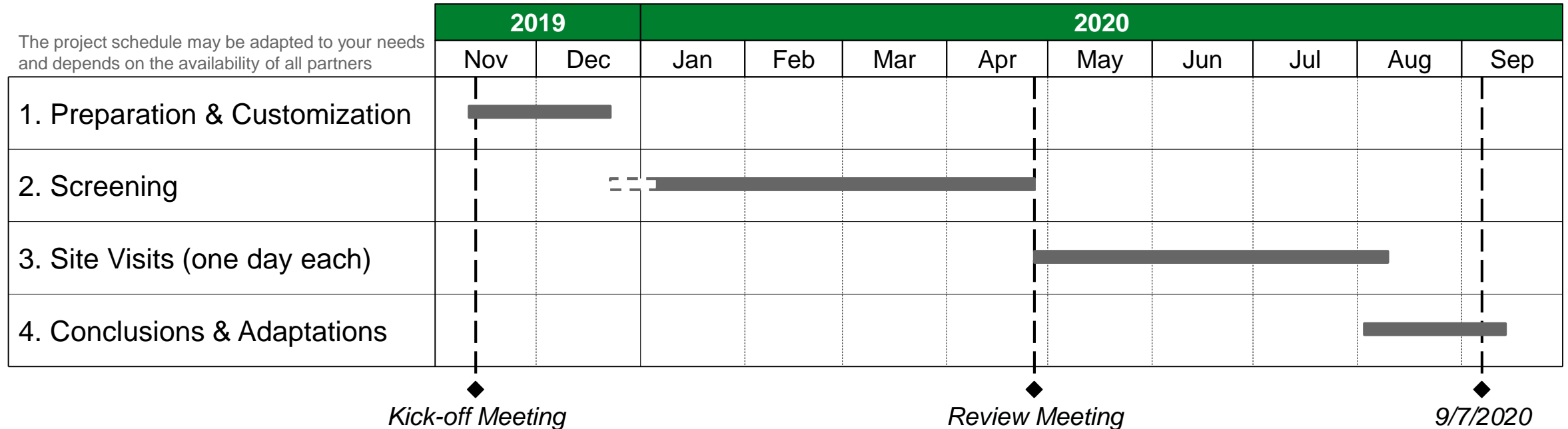
Our Proven Benchmarking Approach and Selected References

Systematic and efficient benchmarking process has lead to contented partners for 20+ years



Project Overview and Preliminary Time Schedule

Structured one-day meetings ensure an efficient exchange of ideas and useful workshop results



Costs

Consortium partners get the full benefits of the benchmarking project and participate with a cost share of **20'000 CHF*** each.

Data Security

- **Confidentiality** and anonymous publication
- We comply with the «International Benchmarking Code of Conduct» that can be found there: <https://doi.org/10.1002/9781119196648.app1>

* The fee includes participation, meals at the Kick-Off Meeting, Review Meeting and at the Final Conference. Travelling and other expenses as well as VAT are not included.

Management Summary

Manufacturing Execution Systems (MES) – How can they foster network agility and coordination?

Motivation

- Manufacturing companies are facing **volatile** and **uncertain markets**, **increasing regulation** and **competition** as well as **new technologies**
- **Cross-plant Manufacturing Execution Systems** may make a decisive **contribution** to manufacturing **coordination** and foster network **agility**

Objective

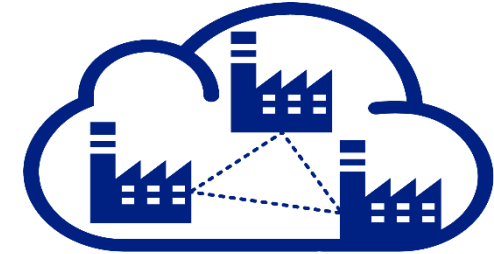
Examine **approaches** to **implement** and **operate Manufacturing Execution Systems** for manufacturing operations management globally **across plants** in order to develop an **agile** and **resilient manufacturing network** based on **digital technologies** and **Industry 4.0**.

Benefits

As part of the consortium, you have **direct influence** on the topics examined, profit from our experience in **knowledge transfer**, learn from **industry experts** and **visit successful practices**.

Approach

We apply our **proven benchmarking process** to identify the most promising Successful Practices and Use Cases in dealing with Manufacturing Execution Systems on a global scale and across plants within a manufacturing network.



Project Overview

Time Frame:

- ca. 10 months
- Planned kick-off: Q4 2019

Time Expenditures:

- Kick-off meeting (1 day)
- Review meeting (1 day)
- Site visits (1 day per visit = 5)
- Final conference (1 day)

Costs:

- 20'000* CHF per company

* The fee includes participation, meals at the Kick-Off Meeting, Review Meeting and at the Final Conference. Travelling and other expenses as well as VAT are not included.

Contact Details

Please do not hesitate to contact us if you have any questions



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