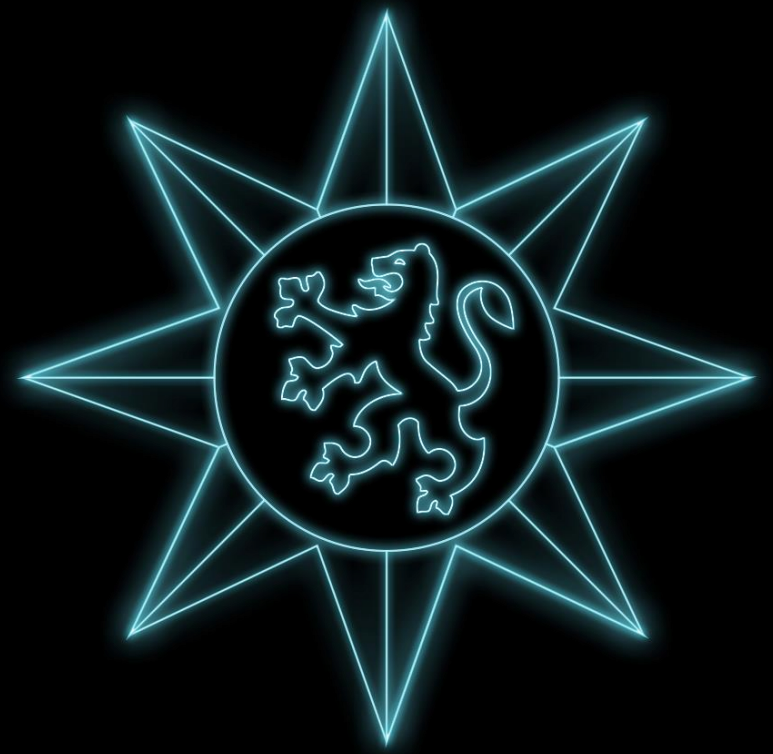
OI4 Alliance - End Customer's View: Approaching Industry 4.0 at Gerolsteiner

Eileen Zobus, Gerolsteiner



Approaching Industry 4.0 at Gerolsteiner Brunnen GmbH & Co.KG

Gerolstein, 22.09.2023

Agenda

1. Facts about Gerolsteiner Brunnen GmbH & Co.KG
2. Where do we come from?
3. Initial situation of Industry 4.0
4. Approach
5. What is our status quo?
6. Conclusion
7. What is the way forward?

Facts about Gerolsteiner Brunnen GmbH & Co.KG

- Founded in 1888, Gerolstein
- Approx. 900 employees
  - Thereof 43 apprentices
  - An average duration of 16 years of employment
- Different mineral waters with high mineralization, especially calcium and magnesium
- Different soft drinks, like ice tea, lemonade and juice spritzer
- Both in reusable and disposable containers

Climate protection strategy

Climate neutrality

Since 2020 we are climate neutral along the complete value chain.

Reduction

By 2030, we will reduce CO_2 emissions at our site (fuels and electricity) by 59 percent (compared to 2016), thus committing to the 1.5-degree target.

903,5 million fillings

317,5 million € sales

8,2 million HL sales volume

Shareholder:

- Bitburger Unternehmensgruppe (51%)
- Buse KSW GmbH & Co. KG (32 %)
- private property (17 %)

Where do we come from?

2016

- first digital maturity assessment → overview of the digital maturity level in all areas

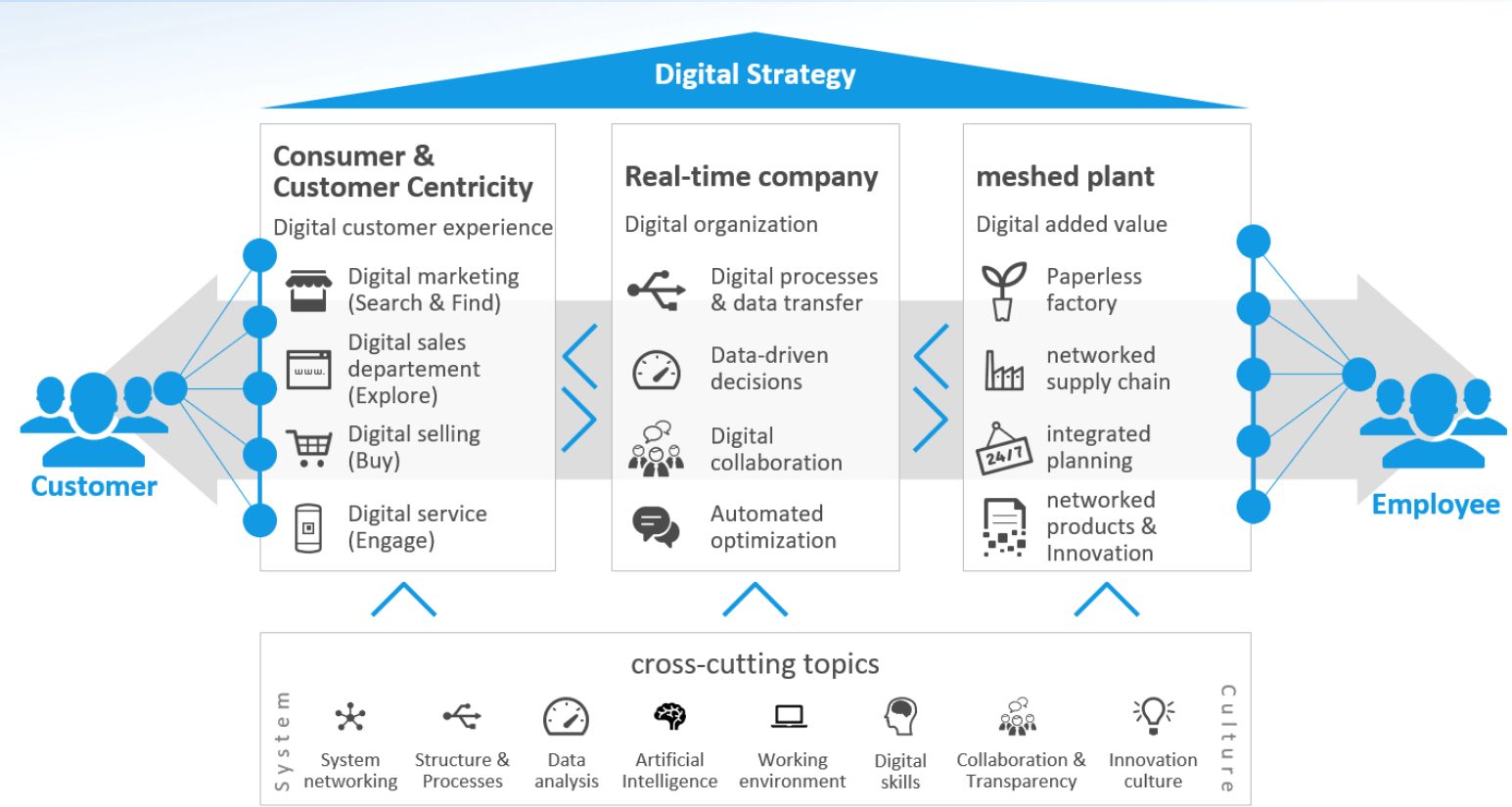
2017

- digital strategy with a focus on the consumer

2020

- second digital maturity assessment → check our progress

Initial situation of Industry 4.0



Our concept of industry 4.0

- 2021
  - development of a digital strategy due to increasing complexity (internal and external)
  - communication about the relevance of industry 4.0
  - Focus on meshed plant & real-time company

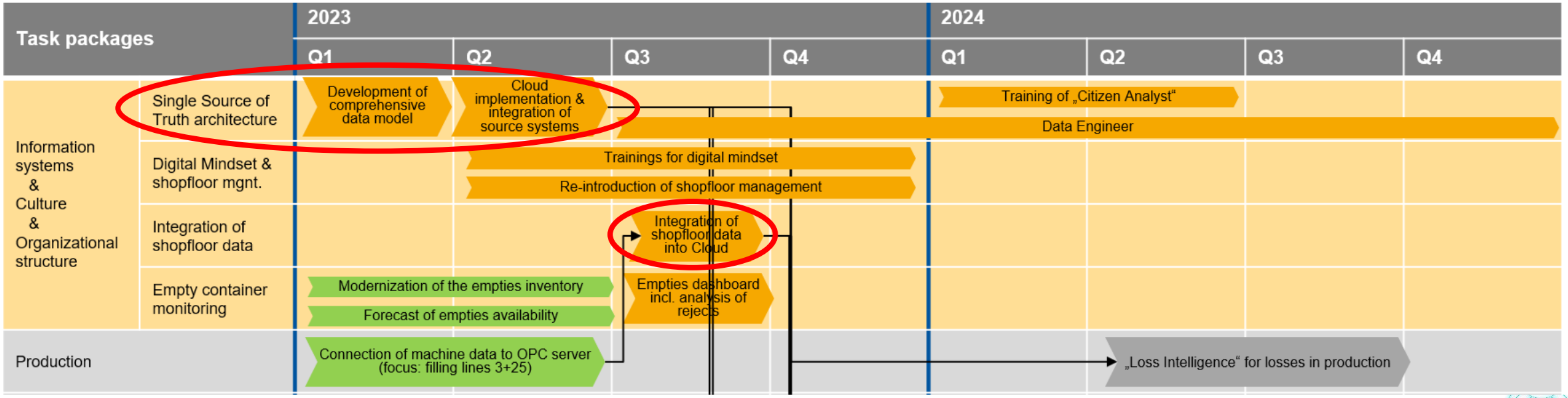
Initial situation of Industry 4.0

Our concept of industry 4.0

- 2022:
  - Maturity assessment with reference to industry 4.0-framework (production and associated areas)
  - Develop a roadmap over the next 2 years to gain a higher maturity-level

→ First task: building a single source of truth architecture

- Development of comprehensive data model
- Cloud implementation & Source system integration
- Integration of shopfloor data into Cloud

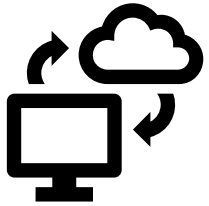


Approach

- Search for a partner, who is able to support us regarding a suitable system architecture

- Writing a requirements specification

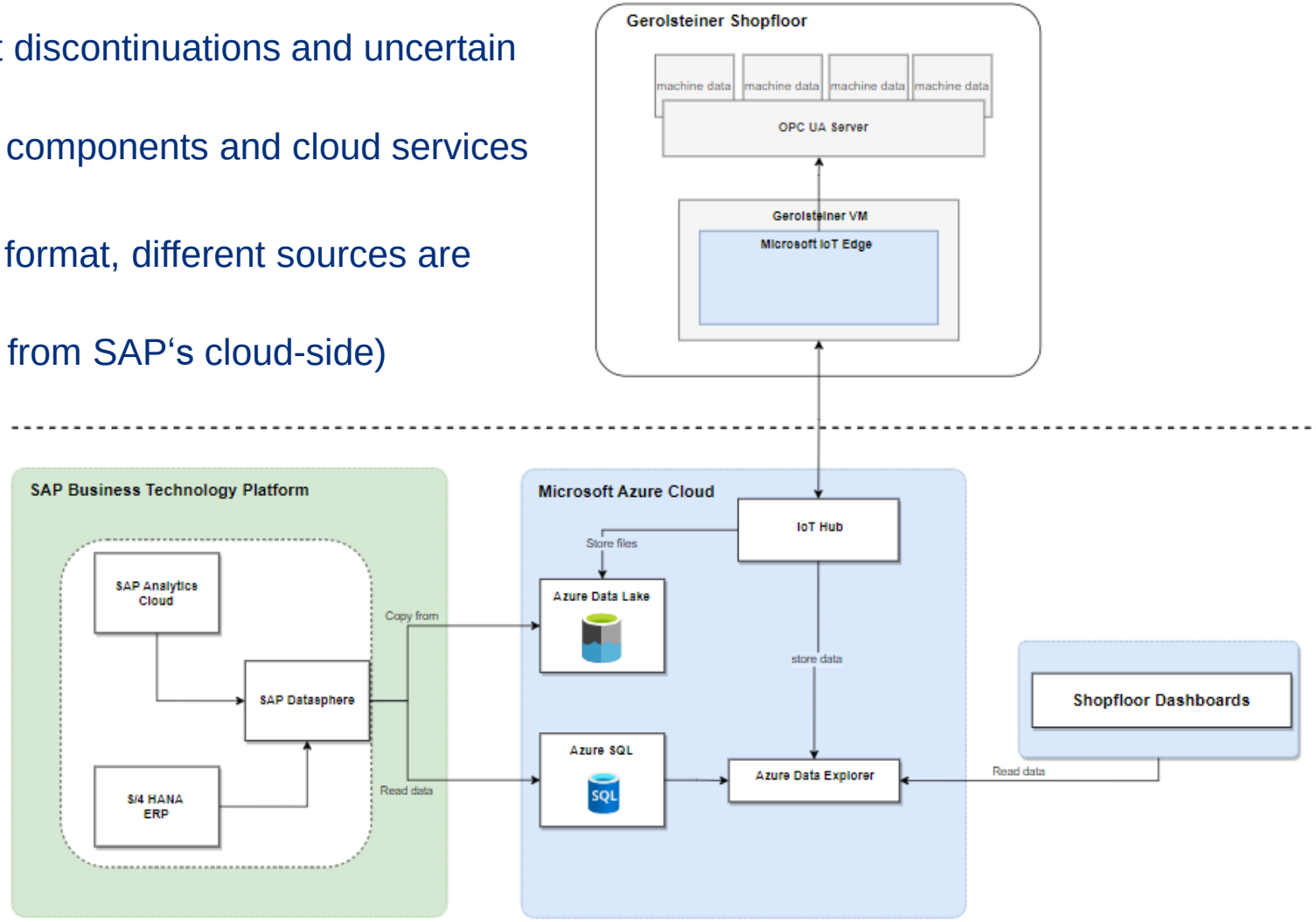
- Defining different use cases
  - to explain our aim
  - to cover the needs of internal customers
  - to consider the value for the business



- Start with a proof of concept (PoC)
  - Demonstrate the feasibility of the approach
  - Minimize or avoid risks
  - Show results quickly

What is our status quo?

- Basic component: Microsoft Azure Cloud
  - No SAP cloud solution due to many current discontinuations and uncertain future directions
  - IoT hub is the interface between edge-side components and cloud services
  - Data explorer (storage of raw data)
  - Data lake for high data volume in its native format, different sources are possible
  - SQL (allowing virtual access to stored data from SAP‘s cloud-side)



- Why SAP components anyway?
  - Machine data are just one part of our I4.0 concept
  - SAP is our central system where all relevant information flows together (e.g. assign cost rates to energy data)
  - SAC is the strategic platform for the evaluation of key figures, Datasphere is necessary for data modelling

Conclusion

- I4.0 as framework-concept, SSoT is the fundamental basis of I4.0
- Approach via PoC has proven itself
- we need security for the future (reliability, stability): SSoT-implementation is resource-intensive in terms of time and cost!
- Desire for investment protection
  - In general, there is a higher risk with cloud-based systems → discontinuity of a cloud-based service is closely connected to loosing investments!
- external quality management: checks every 3-4 months whether we are still on track

What is the way forward?

- Tomorrow we are going to finalize our PoC – then we have a decision how to proceed

- Next steps SSoT: Creating of fundamental basis to other I4.0-building-blocks
  - Integrate more machine / shopfloor data from the filling lines into the cloud
  - Building new and enrich existing dashboards to compare relevant data and to control processes
  - Employee training on shopfloor and management level (how to use the tools und how to interpret the data)
  - Adjust the system landscape

- Next steps Industry 4.0:
  - Digital mindset of employees
  - Renew the LIMS
  - Add an integrated production planning software
  - Include energy management to SSoT
  - Maturity Assessment for Supply Chain Management

Contact Data

Eileen Zobus

Project Engineer Production

Gerolsteiner Brunnen GmbH & Co.KG

Fon: +49 (0) 6591 / 14681

email: eileen.zobus@gerolsteiner.com


Thank you.