

ABeam IoT Solution IoT Data-driven Manufacturing

ABeam Digital®

Manufacturing is becoming more difficult for a number of reasons: demand for better than ever quality, ultra-short turnaround times, a declining labor workforce, retirement of a generation of skilled disciplined craftsmen, and the need to generate added value in a changing manufacturing environment. As Germany's Industrie 4.0 leads the way towards utilizing IoT, AI, and other technologies to make manufacturing more digital, automated, and less labor intensive, a wave of manufacturing improvements utilizing connected equipment demands an effective response.

ABeam Consulting supports digitalization of the manufacturing workplace to achieve better product quality and productivity by means of proven IoT solutions, business scenarios, state-of-the-art analytics technologies, IoT platforms and a data-driven approach.

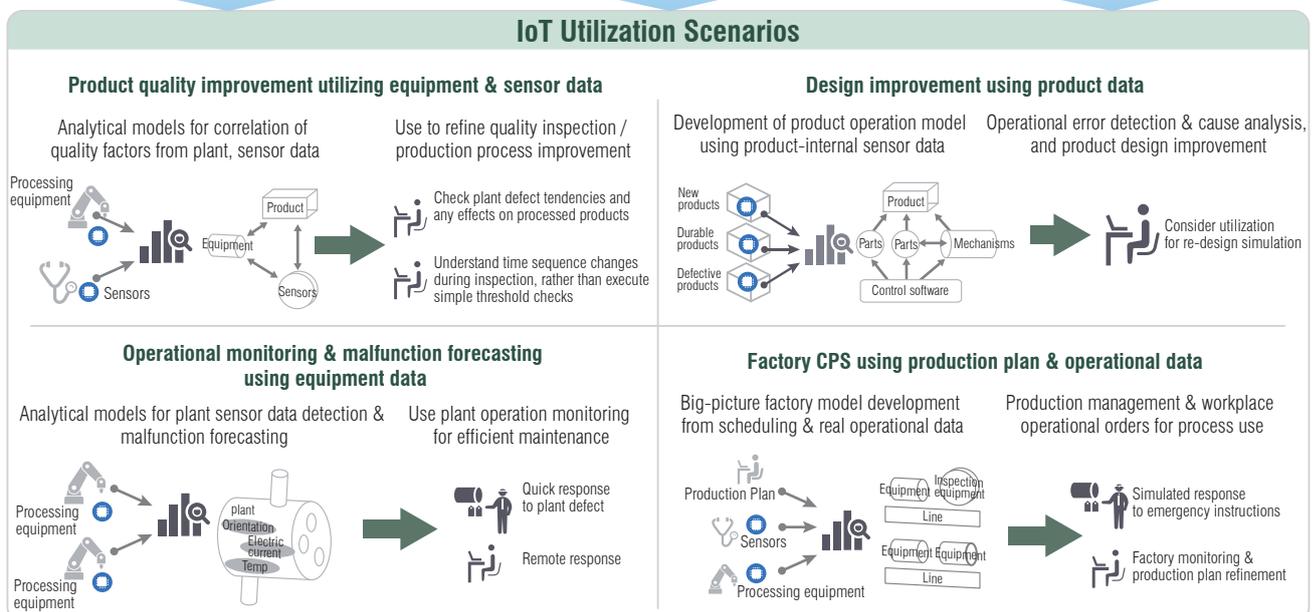
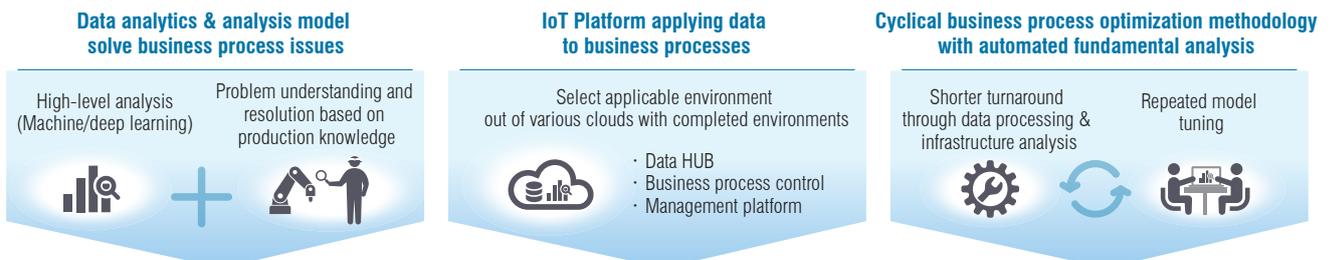
Room for improvement

Issues the manufacturing industry is continuously confronted by are, gaining the trust of the market through product quality (design, development and production), and needing to boost competitiveness through productivity.

Product Quality			Productivity	
Design	Production	Inspection/Traceability	Equipment Operation	Overall Throughput
<p>Understand products' derogation in the market, and design utilization</p>	<p>Monitor variance in equipment behavior to standardize product quality</p>	<p>Identify hidden causes of defects that defy human observation</p>	<p>Reduce production momentary stop and eliminate long/indefinite halts for continuous line operation</p>	<p>Cut down inventory of parts and products in process</p>
<p>Close gaps of unmet customer need, inter-factory coordination, product standards adjustment</p>	<p>Transfer skills for high-quality equipment configuration, quality inspection, etc.</p>	<p>Enhance traceability to increase quality and speed</p>	<p>Optimize preventive maintenance, spare parts inventory</p>	<p>Set up, adjust and optimize tasks of daily production</p>

IoT solutions improving product quality and productivity

Product quality and productivity are improved by utilizing insights gained through analysis of product, equipment and production process data.

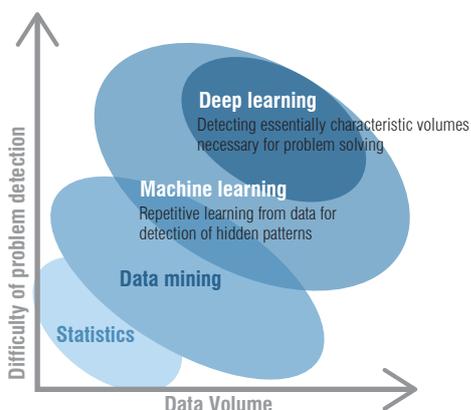


Business issue resolution by data analytics and analysis model

Problem solving through high-level IoT analytical technology

From enormous sensor data volume, even rare problems can be detected and predicted.

- Causes of defects for each product in "low-volume various models" production
- Product/plant defect timing, etc.



Problems of high-level analytical technology

Issue resolving process can be a "black box," lacking persuasive power, thus useless in Business Process Reengineering.

ABeam IoT analytics

High visibility and precise forecasting achieved by combining manufacturing industry knowledge and experience, allowing analysis in light of actual product/plant/process status.

Implementation & refinement

Incorporate analytical results into factory operations & systems to run continuous improvement cycle

Understanding

Interpret data and build hypotheses in light of the on-site perspective of experienced, knowledgeable personnel on scene

Highly readable data analysis avoiding development of "black box"

Analysis & forecast

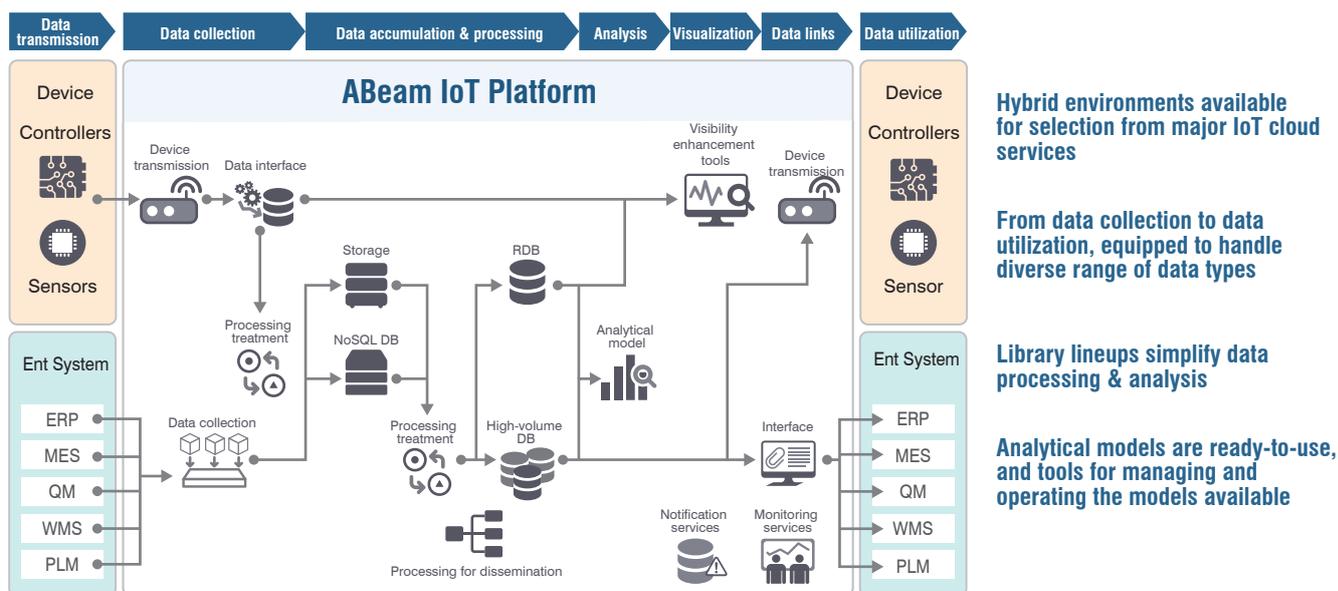
Derive results from exclusive tuning technology combining a wide range of algorithms

Data structuring

Structure data based on ISO/other international standards, mechanical engineering, technical knowledge, and experience

IoT platform to incorporate data utilization into business process

From a variety of major cloud services, an IoT platform is selected for collection, compilation and analysis of product and plant sensor data, as well as all varieties of enterprise data. This platform is then fine-tuned and adapted to the specific business processes.



Cyclical business process optimization with automated fundamental analysis

We create systems for building analytical models, in which experts with knowledge and experience in, the latest data analysis technology, IT, and manufacturing; apply the cycle of analysis, result evaluation, and improvement to the targeted products, plants, and processes for analysis. We then optimize the model for the client's business processes and support you to incorporate it into your daily business.

