

Using data analysis successfully in manufacturing

COLMINA templates and user stories 



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Data quality

One of the key issues the manufacturing industry currently faces is obtaining **qualitative data**. When broken down we can see the challenges arise from:

- Data being available everywhere
- The majority of data comes from different sources and formats
- No clear overview of what data is available, and in what quality

Data integration



Data integration can be used to solve this challenge, creating a system where:

- Only data that is needed
- Data is structured and clearly arranged
- Data can be processed more efficiently

Benefits

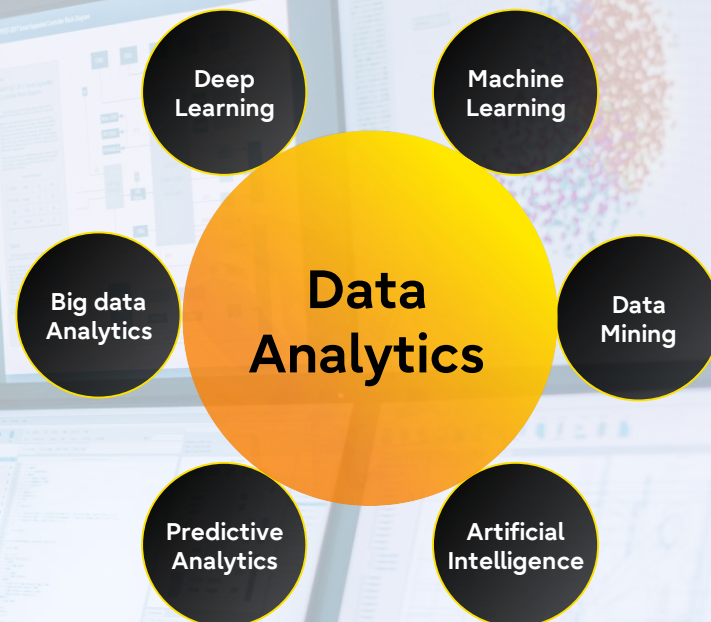
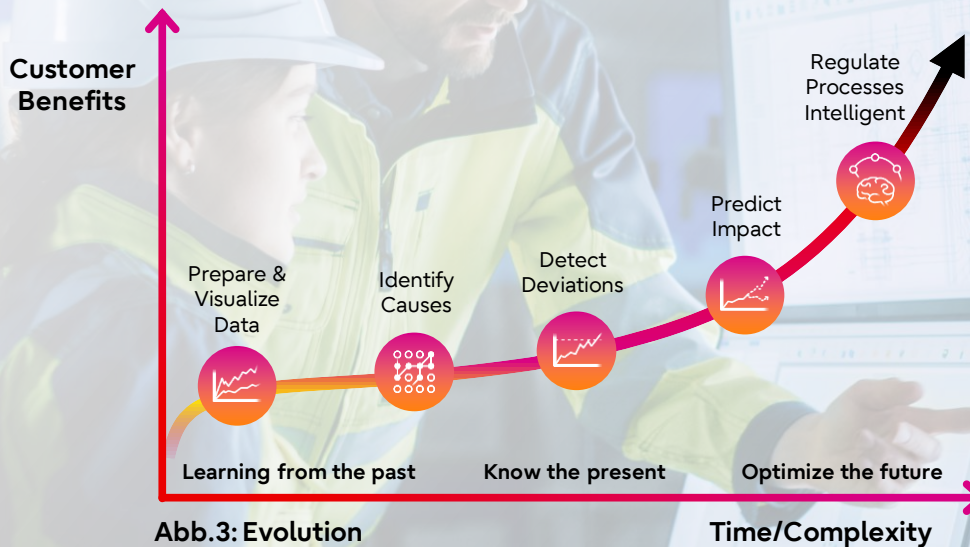
- Insert benefit here
- Insert benefit here
- Insert benefit here
- Insert benefit here
- Insert benefit here

Data integration

A step-by-step approach



Development stages for **Data Analytics** solutions



User stories and Data Flow Mapping

Increasing machine availability



Who?

As a production supervisor

User Story

What?

I want to identify the causes of availability losses

Why?

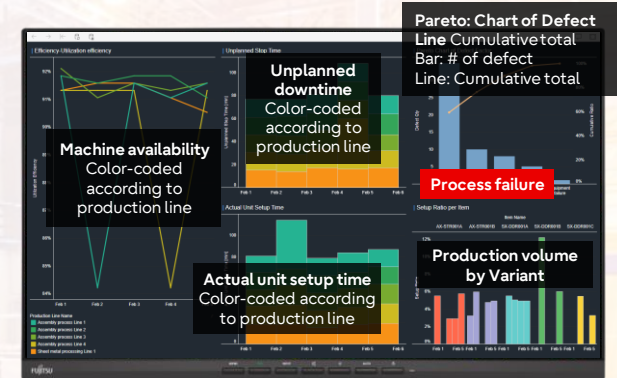
To take appropriate measures to improve availability and OEE

Solution

- Identify production days or shifts with high deviation in availability
- Deep dive into influencing factors
- Identify cause and implement measures in PDCA*-methodology
- Check effectiveness of implemented measures

Benefits

- Higher production output with improved availability
- Reduction of overtime labor cost



+ 110.000€ / year with 3% higher production output

User stories and Data Flow Mapping

Error Pareto on defects



Who?

As a quality engineer

User Story

What?

I want to understand the causes for the high defect rate

Why?

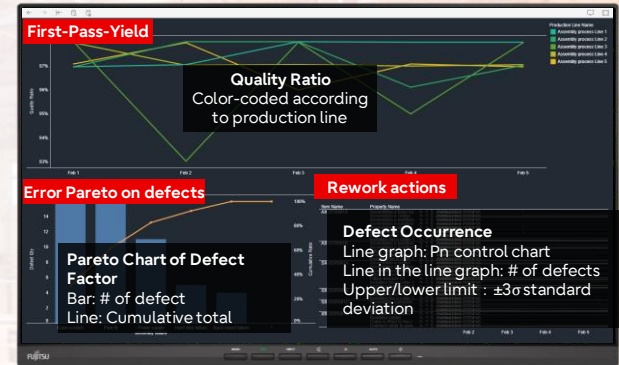
In order to reduce rework efforts

Solution

- Checked the date and production line with decline in quality rate
- Checked defect factors for the products produced in the production line and identified “power supply failure” as the biggest factor
- Identified an operation “power cable attachment” caused the failure
- Implemented a jig to make the cable attachment work easier and more precise

Benefits

- Lower scrap rate, less rework
- Less human resource needed
- Increased process transparency
- Reduction of time and effort for root-cause analysis



+60.000€ / year saving 2%
reduction of rework 1% reduction
of scrap

User stories and Data Flow Mapping

Bottleneck detection



Who?

As a production supervisor

User Story

What?

I want to identify the bottleneck in my assembly line

Why?

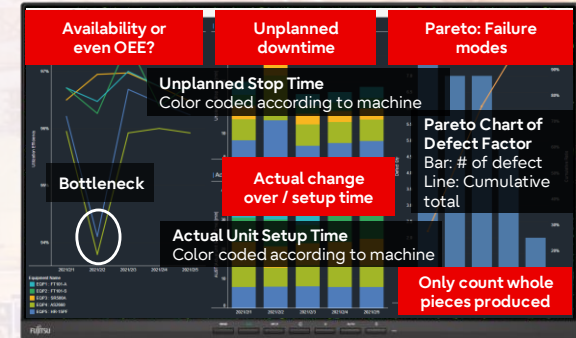
To increase production output and reduce overtime

Solution

- Checked the date and production line with decline in quality rate
- Checked defect factors for the products produced in the production line and identified "power supply failure" as the biggest factor
- Identified an operation "power cable attachment" caused the failure
- Implemented a jig to make the cable attachment work easier and more precise
- Adjusted torque value

Benefits

- Higher production output with improved net runtime
- Reduction of overtime saves labor cost
- Reduction of time and effort for cause-effect analysis in complicated, high-mix low-volume production case



Order of machines in the production line

Equipment Name
EQP1 : FT101-A
EQP2 : FT101-S
EQP3 : SR500A
EQP4 : AS2660
EQP5 : HR-15PF

