

Background

In order to manufacture a drug, a number of process steps must be performed precisely in sequence to obtain a final product that can be accepted. Even slight deviations in processing temperatures and times can render an entire batch unusable. Using artificial intelligence, differences in the compliance of processing parameters can be detected early and reliably.



The Case

- During production, different raw materials must be brought into relation to each other under precisely defined conditions
- If a process step takes too long, or if temperature corridors are not strictly observed, an entire batch can be rendered unusable
- One plant can produce dozens of different end products. For each drug, though, different processing steps and different parameters apply
- Certain process steps, such as drying, are condition-dependent and can take a variable time
- Inconsistencies in processing can occur due to shift changes or malfunctions
- If, for example, steam has escaped through a small leak, the air humidity rises. Without timely correction, a large loss would be the result

Highlights

- Manual troubleshooting is tedious because hundreds of process parameters have to be compared with countless trajectories. Frequently, deviations from the ideal course of processing are not directly recognizable
- With AI you can distinguish good batches from bad ones. The AI permanently improves from this information
- Both creeping changes caused by machine problems and malfunctions caused by unintentional operating errors can be detected
- The AI automatically and predominantly learns from experienced personnel (Combining: Man & Machine)
- The knowledge gained can be used to create better training material and guidelines.



Even if only a single production batch is unusable, the long production time already results in a significant reduction of the daily production quantity. Since **mi Solutions'** AI directly points out the relevant deviations, troubleshooting is targeted without enduring the need to sort out further batches. The value of the raw materials for special drugs can exceed 100 000 Euro.

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About Us

It is our mission to enable customers worldwide to create an impactful value from their data helping them to stand out. Our broad wealth of experience in applying AI sets the basis for this mission.