



The digital journey towards
a smart pasta plant.

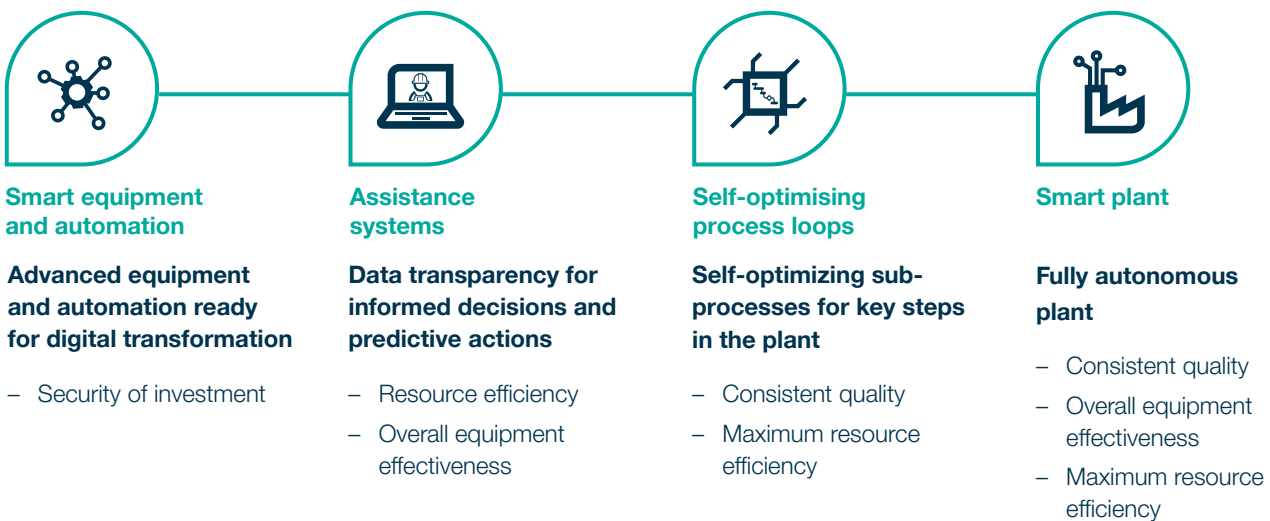
PastaSense™
PastaPro


The digital journey towards a smart pasta plant.

Digitalization is probably the most significant change most industries have seen in a lifetime. The way we run our pasta production plants is changing. From mechanical improvements to automation we are now in the era of connected devices with smart analytics powered by artificial intelligence and machine learning.


Today we harness the power of digital technologies to boost your productivity and reduce operating cost.

We are here to help! Get in touch to benefit from our digital service solutions and be part of the journey.




 **Expert services for Pasta**


Pasta Plant Companion*

 **Knowledge services for Pasta**

Pasta Essential*

 **Maintenance services for Pasta**

PastaSense

 **Process services for Pasta**

PastaPro

* in development



Optimize drying with regulated water supply. **PastaPro.**

Digital process for service regulating water at dough preparation.

PastaPro - dough preparation is a control system that continuously regulates the water supply, starting from the raw material moisture and keeping to the defined dough moisture. The moisture content of the raw material and the dried end product is tracked during the entire production process.

Functions

- Determination of dough moisture by:
 - Measuring of raw material moisture by PastaSense NIR Sensors
 - Regulated dosing of water, defined by target dough moisture
 - Sensors detecting raw material moisture
 - Producer defines target moisture of dough
 - Regulated water dosing accordingly
- Measuring of dried pasta moisture for final performance evaluation
- Data transfer to Bühler Insights Dashboard for transparency

Benefits

- **Compensate for fluctuations** of raw material moisture in dough moisture by adjusting the amount of water added in real time
- Enabling production operators to start the drying process with a **constant moisture rate**
- Enables the operator to **optimize the drying process**
- **Constant production quality** with reduced production costs.
- **Reduces waste** with an optimized drying process – there is on average a 0.4% reduction of CO₂e per ton produced per plant





Automatic continuous monitoring. **PastaSense.**

Automatic and continual monitoring of raw material and pasta.

PastaSense™ is a quality monitoring system that continually records raw material and pasta characteristics in-line along the entire production process. Compared to infrequent, manual sampling, this solution allows for a quicker detection of quality deviations.

PastaSense™ monitors all relevant characteristics with impact on product quality, such as:

- protein, ash, moisture, dark spots and color of raw materials
- moisture and color of pasta

The system is completed by a digital dashboard and report function.

Consistent product quality

Product quality is always under control. Every three seconds, PastaSense™ automatically measures the main parameters such as color, protein, ash and moisture content. Sensors can be positioned at the raw material feeding, as well as along the entire drying process (pre-drying, drying, stabilization, cooling).

Minimized waste

Instead of infrequent manual checks, PastaSense™ continuously monitors all key parameters. In case of quality deviations, reaction times are shortened and production waste can be minimized thanks to an automatic alert function.



Benefits.

- Consistent product quality
- Minimized waste
- Reduced analytical workload
- Optimized processes
- Improved product traceability

Quicker decisions about product quality.

Constant quality at increased production efficiency.



Sensor measuring moisture of short-goods pasta.

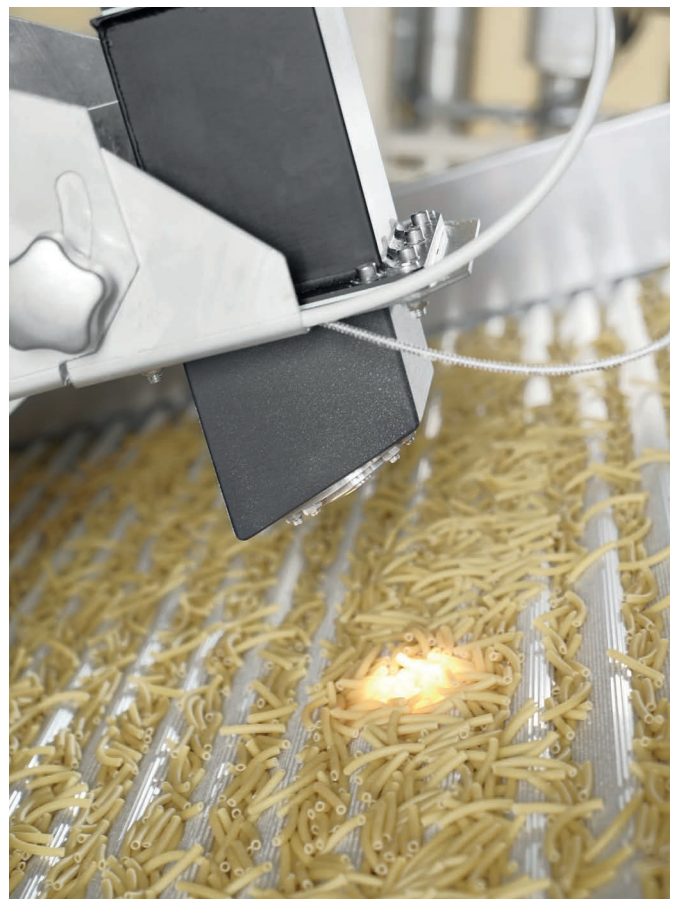
Improved product traceability.

The report function easily summarizes all measured characteristics from each production lot. Thus, traceability is enhanced and decisions about product releases can be taken in very little time.

The dashboard and report function are both available on an unlimited number of devices and can be accessed remotely.

Additional benefits:

- Hardware is not affected by dust, temperature and vibrations
- Flexible installation to fit the focus of each manufacturer
- Installation possibilities: Directly at raw material dosing, the pre-dryer, dryer and/or the cooler.



Watch how PastaSense™ helps you produce constant quality at increased production efficiency

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