DIGITALIZATION

SECURE, NEEDS-BASED, AND USER-FRIENDLY SOLUTIONS FROM A SINGLE SOURCE.
DIGITALIZATION RAISES QUESTIONS

We are currently experiencing the fourth industrial revolution: networking and digitalization are changing industry enormously. “Smart factories” are also emerging in the pharmaceutical sector, in which humans, machines, and products are interconnected on a scale unimaginable a few years ago. What does this actually mean in terms of pharmaceutical packaging or production? How can virtual reality and mixed reality applications be usefully incorporated? How can production-related data be processed to gain added value, not only in relation to individual machines, but also to the entire pharmaceutical production process?

WE HELP YOU TO FIND ANSWERS

Digitalization is leading to profound changes across the board, with various technologies, production processes, services, and completely new business models all being involved. Uhlmann wants to help its customers in the pharmaceutical sector to discover and make use of the new potential offered by this development. We want to find good answers to the pressing questions of digitalization in conjunction with you.

DIGITALIZATION SOLUTIONS FROM UHLMANN

**Smart:** Needs-based, efficient solutions incorporating software, services, machines, and equipment

**Straightforward:** User-friendly operation despite the complex technology

**Secure:** Data and system security has top priority

**From a single source:** Consultation and implementation through Uhlmann
OUR FIVE STAGES TO THE DIGITAL FUTURE

1. EXPLORE
We want to understand the needs of our customers down to the very last detail – for one hundred percent needs-based shaping of our digital products and solutions. Our approach involves direct talks or joint digitalization workshops.

2. INVENT
Taking the findings as a basis, we develop and optimize trend-setting, digital pilot applications. We cooperate closely here with selected customers – with practical implementation being the target.

3. IMPROVE
The results gained from initial, practical implementation are analyzed. Our objective is to make further refinements so that an innovative, reliable solution can be launched.

4. ADAPT
The systematic implementation of digitalization internally is a matter of course so that our structures, processes, and business models are structured appropriately.

5. CONNECT
On the basis of integrated technologies and structures, we will lay the foundations for linked, highly flexible interaction between all processes, machines, and participants in the pharmaceutical sector.
CURRENT DIGITALIZATION PROJECTS

VIRTUAL REALITY: TRAINING APPLICATIONS

The training of new production employees is a significant time and cost factor in pharmaceutical packaging. Providing instruction at a machine means that production is interrupted. External training at Uhlmann in Laupheim is easier to organize, but involves traveling costs and time.

Consequently, Uhlmann has developed a pilot application in the form of a virtual training system for format changeovers on the Blister line BEC 300. Operators are provided with virtual reality glasses and a controller, and are given optical instructions that lead them through the format changeover. This form of instruction is short and intensive as the user is not distracted. Such training promises to be highly practicable.

Benefits: Extensive cost-savings, no interruption to production for training purposes

Potential: High; further applications in the pipeline (machine cleaning, machine operation, line clearance, batch management, serialization)

Status: Practical testing in pilot projects
CURRENT DIGITALIZATION PROJECTS

BIG DATA APPLICATIONS: CONDITION MONITORING & PREDICTIVE MAINTENANCE

Big data technology can be used in numerous applications. Examples at present include the continuous condition monitoring of a machine or predictive maintenance. One of the objectives is to avert unplanned downtimes.

In the context of condition monitoring, large quantities of individual data concerning a packaging line, such as the energy consumption of the components, are captured and graphically depicted. The analysis of these data sets using algorithms serves predictive maintenance, because a self-learning prediction of the failure probability of wearing parts is possible. This forms the basis of predictive maintenance. As an example, it has been established that the power consumption of a cartoner alters prior to failure of the product loading chain. Notification of this change is given, which enables timely replacement of the chain, thus avoiding an unplanned machine stop.

Benefits: Increase in machine efficiency and uptimes, reduction of overall costs
Potential: Very high; enormous potential in many fields of application
Status: Practical testing in a pilot project

UHLMANN SERVICES APP

The Uhlmann services app allows access to the service-related information of a machine or machine-related documentation. Access to the service ticket platform enables the issuing of a service ticket.

Benefits: Mobile access to machine data, fast and uncomplicated communication with service personnel
Potential: Medium; the addition of more information is conceivable
Status: Available to all customers
MIXED REALITY APPLICATIONS FOR REMOTE SUPPORT AND IT-SUPPORTED PROCESSES

Mixed reality applications using data glasses augment reality by providing additional key information. The operator has an eye on everything and, if necessary, receives precise instructions for further action.

A classic form of application is remote support. An Uhlmann service technician uses an integrated Skype connection on the HoloLens smartglasses to log in and actively assist the customer’s machine operator on site to identify and remedy an error.

Another pilot application provides video-based support to change a wearing part. Such applications are particularly effective when the operator needs both hands to carry out manual work.

Benefits: Greater production reliability as the operator is guided through the process, speeding up operation and leading to shorter downtimes

Potential: High; numerous application options

Status: Remote support in the test phase, the change-over of wearing parts is under development