



DIGITALIZATION

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

DIGITALIZATION: THE FUTURE IS NOW

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

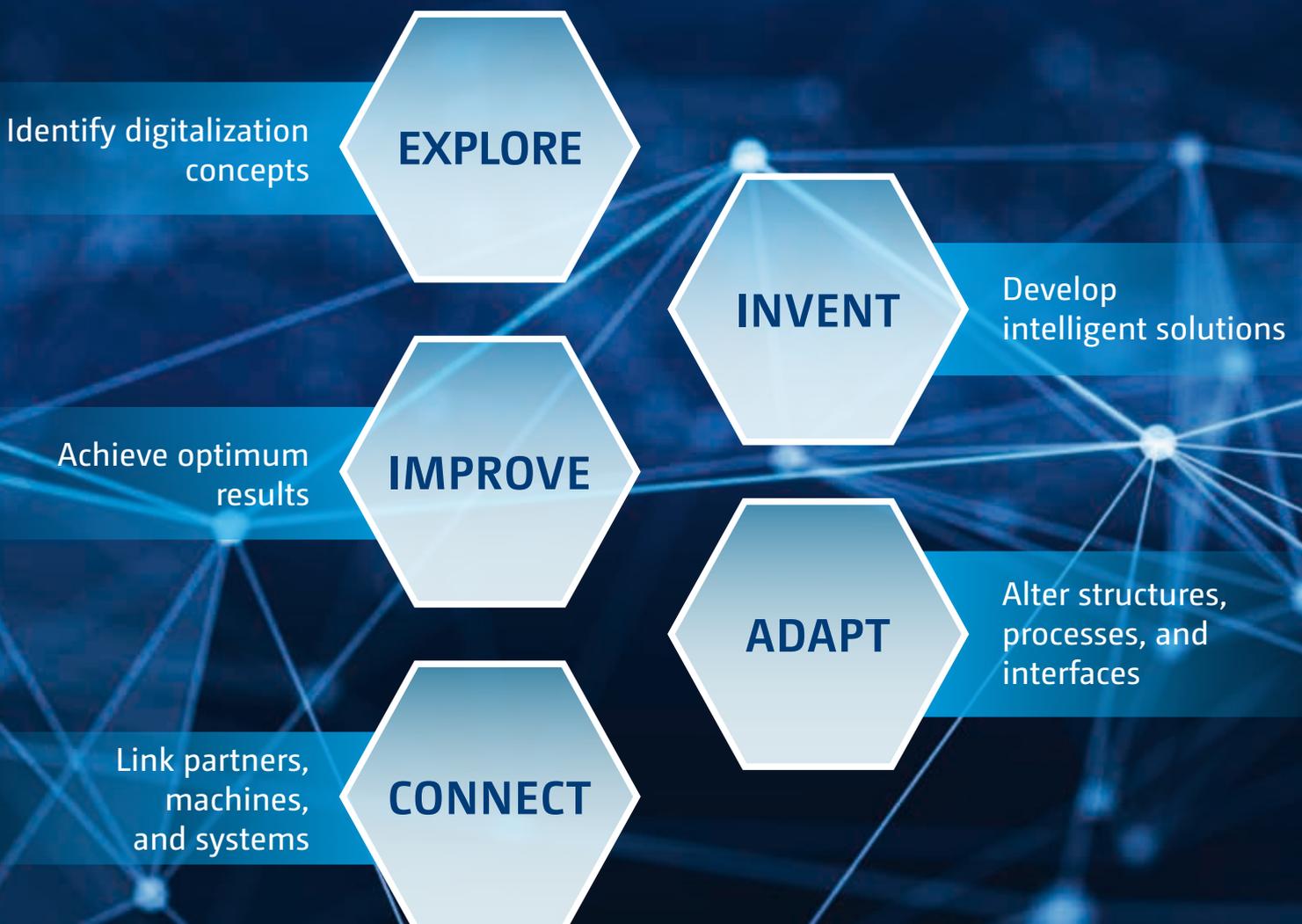
The results gained from initial, practical implementation are analyzed. Our objective is to make further refinements so that an innovative, reliable solution can be launched.

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

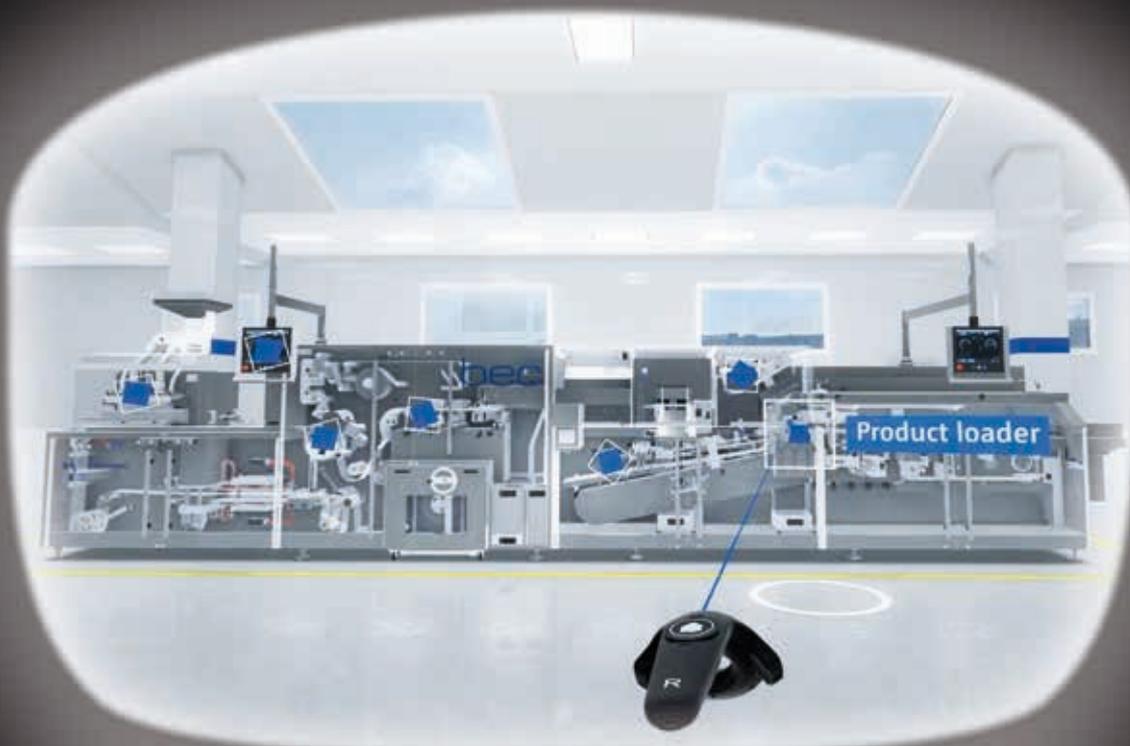
The training of new production employees is a significant time and cost factor in pharmaceutical packaging. Providing instruction at a machine means that production is interrupted. External training at Uhlmann in Laupheim is easier to organize, but involves traveling costs and time.

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

