

## Boehringer Ingelheim launches into the digital research laboratory



Various Boehringer Ingelheim R&D laboratories were previously dominated by paper documentation. An important first step towards digitalization was the automation of the processes involved in collecting samples in clinical studies. Important goals were increased efficiency, greater compliance and higher data quality.

Boehringer Ingelheim is among the 20 leading companies in the pharmaceutical industry. It has been family-owned since it was founded in 1885. The research focuses on the three business areas of human pharmaceuticals, animal health and biopharmaceuticals. Around 50,000 employees work worldwide to develop new, innovative therapies that can extend the life of patients. In animal health, Boehringer Ingelheim stands for progressive prevention.

- With ThingWorx and Vuforia Studio, Boehringer Ingelheim abolishes the paper-based, manual recording of incoming samples in clinical studies and digitizes its R&D laboratories.
- The PTC solution impresses with a comprehensive modular approach from a single source with the possibility of individual adaptation.
- The first version already shows clear support for the laboratory employees on site and has significantly reduced the time-consuming work of sample collection.
- The scalability of the ThingWorx platform and the productive collaboration with PTC were decisive for the success of this project.

## Results

- Higher accuracy of sample acquisition
- Time savings through digital sample registration
- Better compliance



## The challenge

In addition to robot-supported processes, many flexible, manual work steps are essential in research laboratories. In order to support these steps and thereby promote the innovative core competences, Boehringer Ingelheim wanted to offer applications for various mobile devices in the heterogeneous device and IT environment of its laboratories, from simple websites to AR applications. Thereby, the manual processes are supported in such a way that innovative and high-quality work is possible in a more efficient and reliable manner through digitization. In an initial project, the pharmaceutical company has set up a digital system for registering incoming samples from clinical studies at its research site in Biberach. Several thousand samples from a study which previously had to be compared manually with lists can now be recorded automatically. "The manual registration of the incoming samples with paper tables was very labor-intensive and resource-consuming," explains Oliver Schanz, IT team leader at Boehringer Ingelheim. "By ticking each sample by hand, errors keep coming back, and also from a hygienic point of view, this process, in which all sample tubes are recorded and examined by hand, was not ideal."

## The concept

For the implementation of the planned digital sample registration, the people responsible at Boehringer Ingelheim were looking for a reliable partner, i.e. a company that has a certain size and is also internationally positioned. "For the global rollout of the new solution and future projects in Asia and the USA, personal collaboration in different countries is very expedient", says automation architect Christian Späth from Boehringer Ingelheim. "A company the size of PTC gives us planning security for long-term, global projects." After an initial rough selection, three providers were evaluated at Boehringer Ingelheim.

"What we particularly liked about PTC is that all components - from the connection of various systems and data sources to visualization - are offered from a single source, regardless of whether they are for cell phones, PC or AR glasses. PTC covers the entire spectrum. The decisive factor for us was the modular approach with numerous components that you can use but don't have to. This concept, combined with various options for individual adaptation, through which we can develop components ourselves or completely program them, was the decisive factor in favor of PTC," says Oliver Schanz. In addition, Schanz was fascinated by the AR solution Vuforia from PTC right from the start, which he became aware of at a conference.

After evaluating some use cases, the IT managers at Boehringer Ingelheim, together with their business colleagues and the experts from PTC, defined the requirements for digital sample registration in a 3-day kick-off workshop and developed an initial concept. It already included applications, processes and also the technical structure, such as the connection of a database. In a regular exchange, a functioning prototype was then developed within around three months. Boehringer Ingelheim thereby relied on agile project management, in which the feedback from future users from the laboratory was continuously incorporated. The result are tablets with an integrated laser scanner, with which the incoming sample tubes are automatically scanned. The data are transferred to the internal LIMS (Laboratory Information Management System) and are compared there.

## The result

With the first version of the Digital Sample Registration, the laboratory has achieved time savings in sample acquisition, which relieves the burden on employees

significantly. "We're working faster now," says Oliver Schanz. "In addition, thanks to PTC, we are now achieving greater accuracy and better compliance. This first digitization step towards the paperless laboratory is a door opener for many other processes that we want to implement worldwide step by step." All the advantages of the new solution will only become apparent when the system is used across the board and is comprehensively validated. At the moment, the Digital Sample Registration is receiving a lot of positive feedback from the employees.



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Oliver Schanz, IT team leader at Boehringer Ingelheim



"The colleagues in the R&D laboratories are looking forward to the new system, which makes their work easier," says Schanz. What the two main managers at Boehringer Ingelheim particularly liked about PTC was the excellent, very productive collaboration at eye level. Thanks to the central interface between Boehringer Ingelheim and the Customer Success Team from PTC, the paths were short and efficient. "We have always been able to clarify requirements and problems quickly and competently and have steadily pushed the entire project forward together," concluded Christian Späth.

In future, Boehringer Ingelheim plans to use the AR solution Vuforia Chalk in various company areas, such as in production, maintenance, in the laboratory and for training. Beforehand, issues of security and data protection issues are clarified conclusively. AR shall also be used in the upcoming version 2.0 of the digital sample registration. The employees from the R&D laboratories can then call up the instructions for analyses directly on their tablets and view them using AR functions. New work steps can be documented directly. Previous printouts on paper, handwritten notes and later entries are completely eliminated. Thereby, another important step towards a digital, paperless laboratory is realized.

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