Case Study

Bring lectures to life: **Modernize learning with Wacom**

technische universität dortmund

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AT A GLANCE

Industry
Education

Usage Scenario
Professor/lecturer presentations
during auditorium-based student lectures

Challenges
Physical integration into the auditorium
lectern required; potential resistance to adoption
from less technologically savvy users

Solution
26 Wacom interactive pen displays, each embedded
within a physical lecture room desk, and integrated with
mini-PCs running Microsoft Windows and additional
annotation and note-taking software.

Benefits
- Quick and easy deployment
- Intuitive user experience for all
- Increased working efficiency for lecturers
- Enhanced learning experience for students

WACOM INTERACTIVE PEN DISPLAY

"As well as making the lives of lecturers easier, Wacom interactive pen displays are also improving the learning experience for students. Wacom technology is and will continue to power the modernization of the learning experience at TUD in a very significant way."

Martin Aust, Media Services Department within the
IT & Media Center, Technical University of Dortmund

Challenge

Create a modern, intuitive presentation station.

Founded in 1968, and with 16 faculties ranging from science and engineering to social sciences and cultural studies, the Technical University of Dortmund currently has almost 35,000 students and over 6,200 employees, including 300 professors.

As recently as 2013, lectures were still partially being conducted using traditional acetate slides on overhead projectors, a situation that was no longer in line with the expectations of "digital native" students. And so the university's management decided that it was time for a modernization of the multimedia technology within the lecture halls.

A number of prototype digital presentation and writing devices were to be trialed to replace the old overhead projectors with a kind
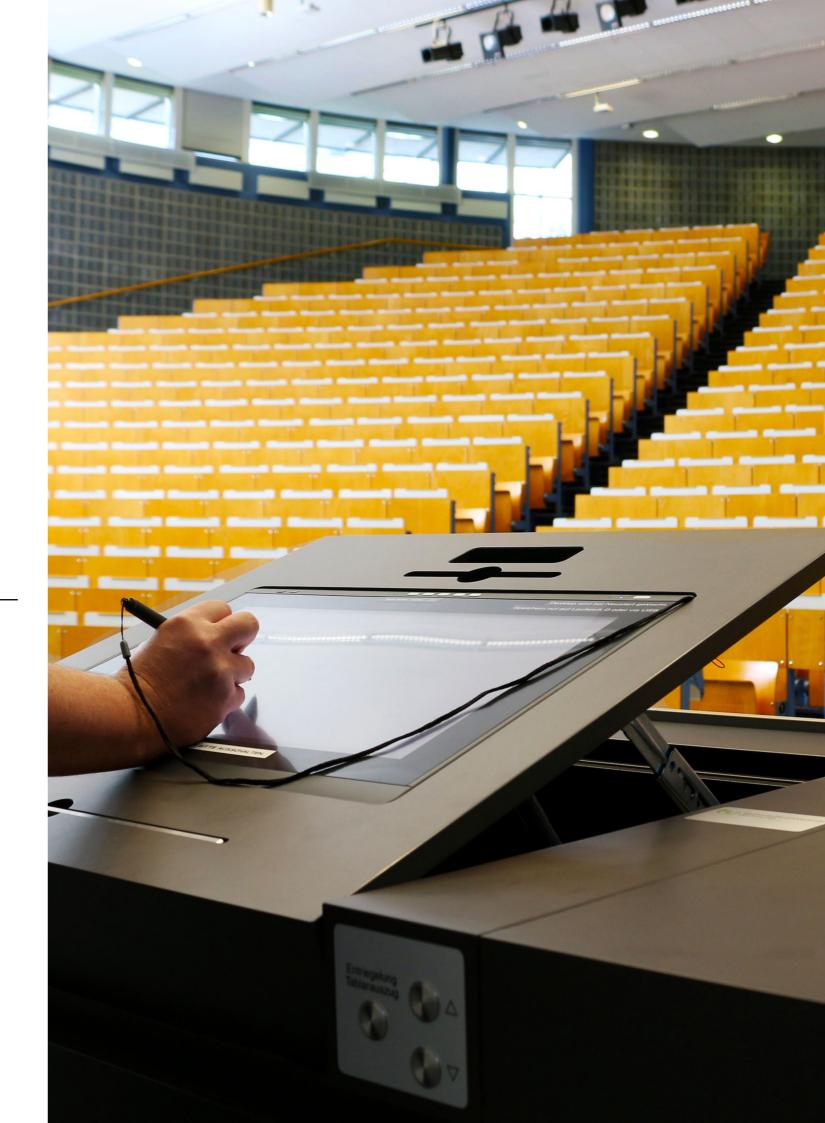
of modern, digital alternative for professors to use in the auditoriums. Martin Aust, a technical employee within the University's IT & Media Center, recalls: "We became aware of the possibility of using digital pen displays and a projector, so we began to investigate. The first solution we tried was less than satisfactory. The pen was connected to a cable from a signal perspective, which restricted the user's freedom of movement. The way the pen wrote on the display surface and the less than intuitive writing software from the manufacturer were also unconvincing. That's when one of our technology partners made us aware of Wacom interactive pen displays. The experience we had with it was so positive, in addition to very good user feedback, that we decided to build a prototype presentation lectern using that pen display instead."

Embedded displays. Intuitive presentation.

Martin Aust and his team designed a prototype using the pen display embedded into a media lectern constructed according to the needs of the TU Dortmund. It consisted of mini-PC running Windows and annotation software, and a connection to the auditorium's video projector. This technology package produced an intuitive presentation and annotation experience that perfectly replicated real pen and paper, while allowing lecturers to make notes during their lessons within familiar PDF and PowerPoint formats.

"The ease of use, the speed of the pen input and the attractiveness of the written result were just what we were looking for," says Aust. "The positive user feedback gave us the confidence we needed to roll out the solution more widely as part of the modernization of the University's multimedia technology."

Beautiful simplicity. Fast installation.

In 2017, TUD began a refurbishment program encompassing all of its 26 lecture theatres, with a Wacom pen display-enabled presentation station as the centerpiece of each. Speaking about the reasons for selecting Wacom devices, Aust explains, "In addition to the quality of the display and pen output, the fact that the pen is battery and maintenance free was a big plus for us. In addition, the fact that the touch function can be turned off was very important.

This ensures lecturers can run their presentations without being interrupted by unintentional hand inputs. The installation of the pen display within each lectern and the integration with the other hardware is also quick and easy, taking no more than an hour each time. We completed 10 of the planned installations in 2017, and the other 16 will be finished by Autumn 2018."
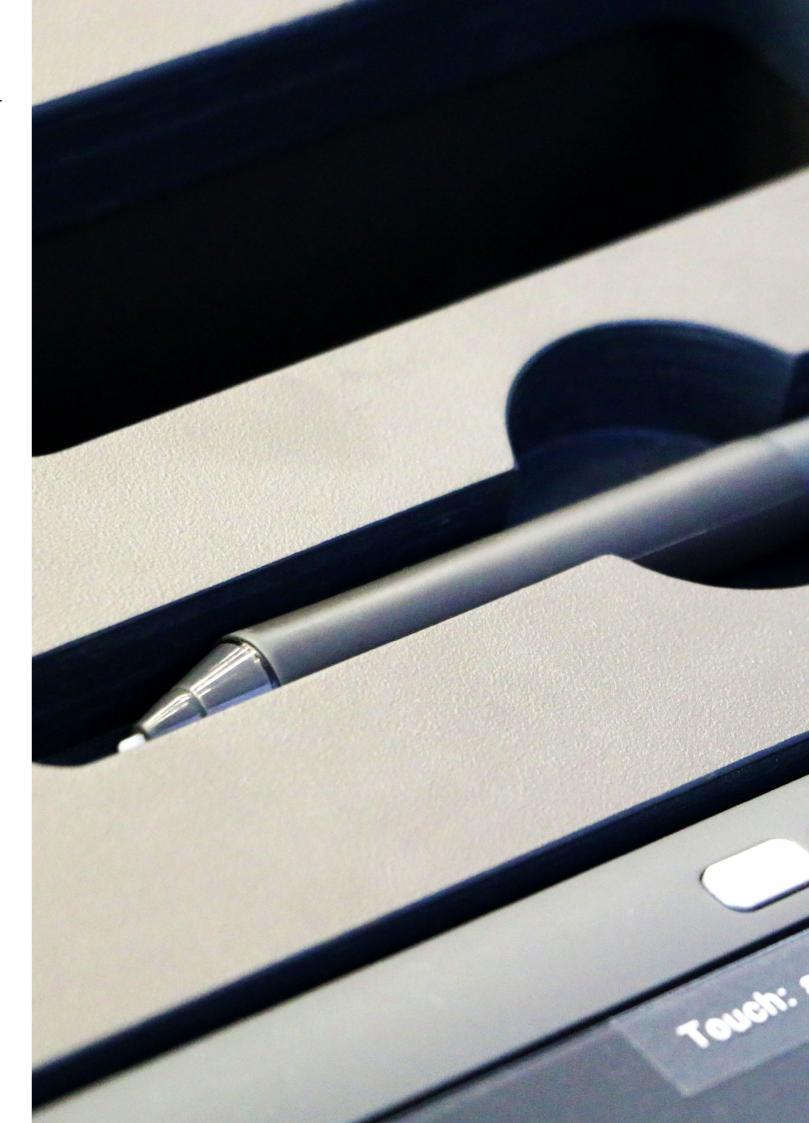
Intuitive teaching. Superior learning.

Speaking about the impact made by the deployment of Wacom interactive pen displays at TUD, Aust continues, "The new lecterns in the lecture halls have opened up completely new possibilities for our teaching staff. They have the flexibility to bring their materials on a memory stick that they can plug into the lectern, rather than carrying around a laptop. But they also have the flexibility to use a laptop alongside the pen display if they prefer. Nevertheless, the fact that I now also see professors who are not usually technology-savvy going into lectures without their laptops is a sign of how reliable working with the Wacom pen displays is."

In fact, the Wacom pen displays are now a key standard element of the digitization process at TUD. And it's not just lecturers who are benefitting, as Aust explains: "As well as making the lives of lecturers easier, Wacom pen displays are also improving the learning experience for students. They can now focus on listening rather than taking notes, as they know the annotated presentations and PDFs will be made available

to them on our digital learning platform after the lecture. This integrated, digital teaching style ensures students get a richer set of learning materials, which helps them with the revision and exam preparation process. We're delighted that the Wacom devices have been adopted so quickly and enthusiastically."

Finally, thinking about how the use of Wacom pen displays may evolve in the future, Aust concludes, "I can easily imagine that we will deploy these kinds of devices within smaller seminar rooms in the future, and that other pen-enabled devices will be used more intensively by lecturers and students going forward. Either way, Wacom technology is and will continue to power the modernization of the learning experience at TUD in a very significant way."

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