

Smart lecture halls enable hybrid lectures at the UCT Graduate School of Business



Client profile

Uniquely placed to lead critical conversations about the future of business, both in Africa and the rest of the world, the UCT Graduate School of Business is a distinctly African business school with a global reach. Established in 1964, it forms part of the Faculty of Commerce at the UCT — Africa's oldest university. The GSB aims to contribute to the success of individuals and organizations through research-informed teaching, practice and thought leadership that respond creatively to complex and pressing economic and social challenges.

The University of Cape Town (UCT) Graduate School of Business (GSB) aims to create transformative learning experiences for tomorrow's leaders. In line with this vision, they wanted to expand the reach of their lecture halls and offer an immersive experience to students attending in-person and online lectures. At NTT DATA, we're dedicated to revolutionizing learning environments for higher education institutions. Our collaboration with the UCT GSB exemplifies this commitment, where the foresight and innovative thinking of Willie du Plooy, Senior IT Manager, played a pivotal role. He aimed to transcend traditional classroom boundaries, offering a comprehensive solution that seamlessly integrates in-person and online learning experiences. Embracing the school's vision, we provided the technological solutions necessary to transform traditional classrooms into dynamic, hybrid learning environments. This initiative was not just about integrating technology; it was about realizing a forward-thinking educational model that caters to both in-person and online students without losing the essence of interactive learning.



The technology in our classrooms is built around humans first. And that is in large part because our technology partners, NTT DATA, have been so extraordinary in helping us to **think about how we both will and could use technology**. Partnerships are some of the most important things when you're building out new technology."

Dr Catherine Duggan
Director, UCT GSB

Business need

Bringing old-school chalkboard teaching into the digital world

Long before the global shift to online platforms due to COVID-19, Du Plooy had already envisioned a future where digital and physical learning spaces merged. This foresight led to the early adoption of videoconferencing for guest lectures, laying the groundwork for a more ambitious project. Our role was to support this vision with our technological expertise, ensuring the seamless integration of digital tools in a way that would enhance, rather than replace, the traditional classroom experience.

Because teaching and learning at the GSB had always thrived on direct engagement within a shared physical environment, there was an initial curiosity about the unexplored potential of online learning to replicate the connection and interaction inherent in traditional classroom settings. The case-based teaching approach, which often relies heavily on the use of chalkboards, posed a unique challenge in the transition to a digital format. Ensuring that these dynamic, often spontaneous chalkboard writings were fully accessible and visible to online participants was crucial. This was part of the broader goal to create an immersive hybrid learning environment that seamlessly blended traditional and digital methodologies, allowing lecturers to share their expertise with a wider, more diverse audience.

“We wanted to ensure that our students could truly engage with people, not just to have it be a one-way interaction. In the lectures, the guest speakers should see the students and the students could see them,” Dr Catherine Duggan, the director of the UCT GSB, explains. “It should be a seamless engagement where we don’t think about the thousands of kilometers separating us.”

Solution

Innovating with smart technology

NTT DATA's long-standing partnership with UCT and deep familiarity with the university's teaching and technology environment laid the foundation for this innovative endeavor. “We partner with them on our network design, our network implementation, and they are one of our partners for our large venue installations when it comes to audiovisual installation,” elaborates Du Plooy. This collaboration was pivotal in conceptualizing and realizing a solution that went beyond conventional videoconferencing to create a truly immersive environment for students and lecturers.

Our solution was comprehensive, integrating a lecture hall with the necessary infrastructure for effective videoconferencing, such as built-in cameras, microphones and a smart platform. This platform was designed for ease of use and compatibility with various platforms like Cisco Webex and Microsoft Teams, catering to the diverse needs of lecturers.

Accommodating different teaching styles was crucial. “We all teach slightly differently. And my style is chalk and a board and letting the class develop as it does. So, you can’t really preplan it and create slides because you don’t know where the discussion will go,” shares Prof Mignon Reyneke, Professor of Marketing at GSB. To address this, our technology included cameras that could follow the lecturers, ensuring that online participants had a clear view of the chalkboard and the lecturer, not just their back.

The system's sophistication extended to audio capabilities. Ceiling microphones utilized beamforming technology to locate and focus on the speaker, reducing background noise and enabling remote students to clearly hear in-class discussions without needing repetitions from the lecturer.

Working closely with the school's IT team, we configured the rooms to be intuitively responsive to various teaching scenarios. For instance, a lecturer can walk in and connect a device, and the system automatically adjusts to the correct settings.

“Once everything was built, the lecturers would teach, and the NTT DATA team would come sit with me in the back row. We’d observe the lecturer and students, figure out how they want to interact with the room and speak to them afterwards,” recounts Du Plooy, highlighting the continuous process of observation and improvement. This hands-on approach was crucial for fine-tuning the system to the specific nuances of the GSB's teaching environment.

"The whole IT team was completely on hand the first time you walked into the classroom and had to face this dashboard of things you're going to do. Knowing there's a support person available helps you realize: 'Oh, this isn't so difficult'," adds Prof Reyneke. This collaborative effort, where the IT team and lecturers supported each other, was key to seamlessly integrating this advanced technology into the teaching process, making it a natural extension of the classroom rather than an intrusive element.

For the smart classrooms to succeed, they needed to unify online and in-person learning in a user-friendly manner for both students and lecturers. This required advanced technological solutions and a sensitivity to the unique aspects of the GSB's teaching style. "It's easy to show expertise if you're comfortable in your environment," Prof Reyneke elaborates. "And suddenly, our environment became incredibly uncomfortable because it was really new. Digital things were coming into the classroom. And not understanding them, knowing how to use them properly, or understanding their potential was frightening."

The GSB required a versatile platform capable of supporting multiple videoconferencing platforms. This flexibility was essential not only for their students' diverse needs but also because the school is situated on a site where the venues are also leased as conference facilities. The technology had to be adaptable, not just in terms of hardware and software, but also in ensuring that the essence of the GSB's case-based approach, emphasizing chalkboard teaching, was fully integrated and accessible to all participants, regardless of their physical location.

Outcomes

Empowering educational excellence

This digital enablement across seven lecture halls at UCT GSB has set a new standard for digital education. Their hybrid model supports students attending in person and those joining online, creating an inclusive and engaging learning environment.

The integration of advanced videoconferencing has opened doors for geographically distant students, removing the barriers of travel costs and time. It has also expanded the spectrum of guest lecturers, allowing the GSB to host experts from across the globe effortlessly.

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The idea was to get to a stage where the technology gets out of the way; where we minimize the fact that there's a camera and a microphone in the lecture hall. Lecturers should be able to interact with the technology without really acknowledging that it's in front of them and just get on with the job.”

Willie du Plooy
Senior IT Manager, UCT GSB

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