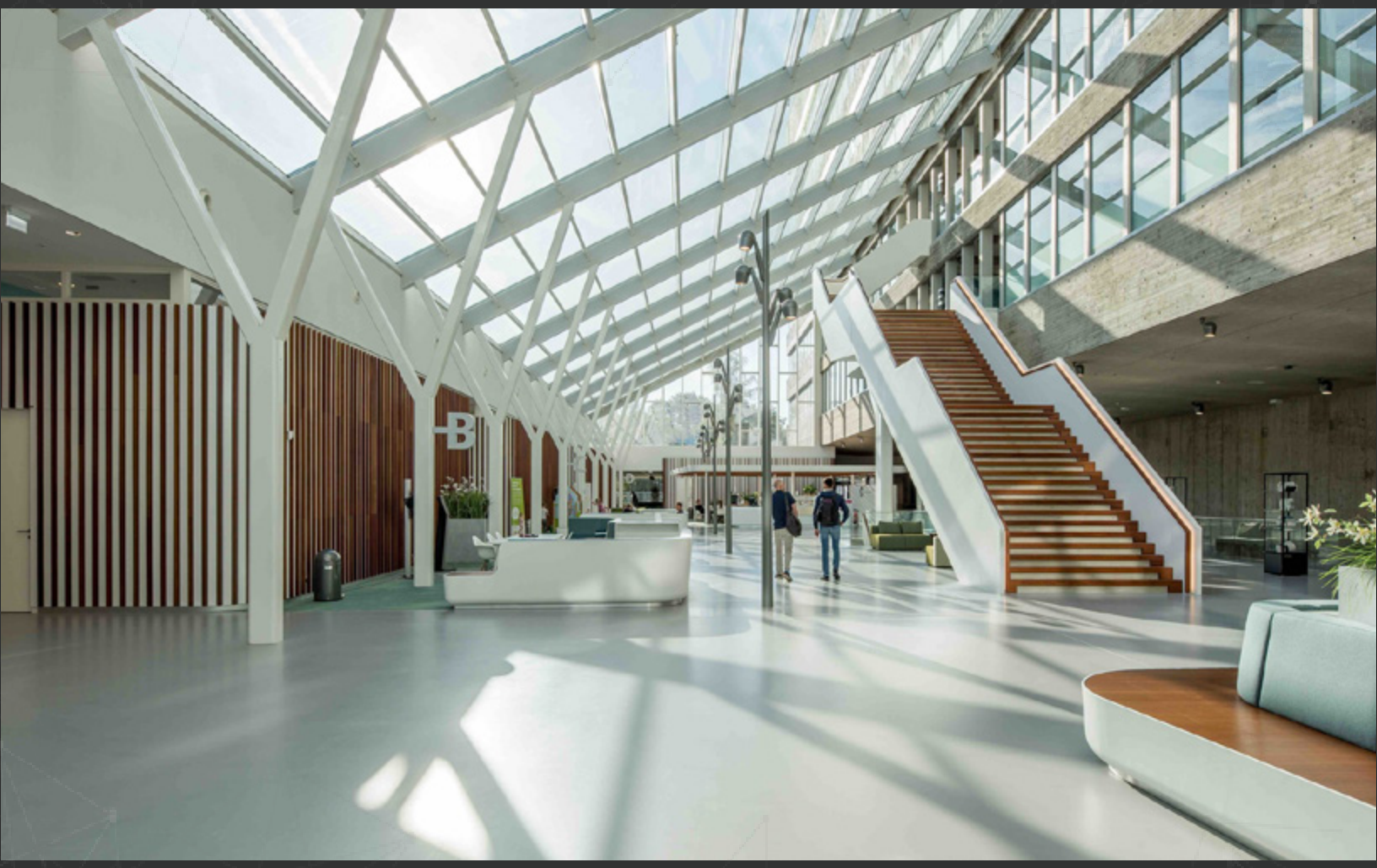
SWYCS



CASE STUDY

Radboud University offers access to the availability of study workplaces on campus with IoT

How to increase student satisfaction and distribute students across campus for optimal utilization of study workspaces.

Marloes Hermsen
Information Manager, Radboud University

Real-time **Insight into the number of people in a room**

Real-time **Insight in the available study workplaces**

Positive **Reactions from students**

Radboud University: Radboud University is a broad, classical university in Nijmegen, where top research and high-quality education come together. With 24,000 students and seven faculties, it is a leading, student-oriented university, active in almost all fields of science.

USE CASE: Obtaining real-time online insight into the availability of study workplaces in the central university library and use crowd control for the occupancy rate of a building within the COVID admission criteria.

CHALLENGE: There are more than enough study workplaces, but the available workspaces are not easy for students to find. Radboud University wants to show students where study workplaces are available and distribute students efficiently on campus.

SOLUTION: Providing insight into the locations and availability of the various study workplaces in the university library by using sensor data and the SWYCS Internet-of-Things platform.

RESULTS: There is now automated real-time insight into the number of people in a room and the available study workplaces. The initial reactions from students are positive. They can now easily find available study workplaces in the app on a map.

THE CHALLENGE | A higher rating and better findability for the available study workplaces

With 24,000 students and 7 faculties, Radboud University needs a wide range of workspaces to support studying on campus. The university wants its students to be satisfied and have an average satisfaction rating of eight as evidenced by the annual survey. Students had a lot to say. The survey highlighted a structural problem that needed attention: the poor allocation of study workplaces. Students complained about a shortage of space, despite there being more than enough study recesses and workplaces on campus. However, these turned out not to be easy for the students to find.

Improving easy access to workspace availability presented a great challenge for Information Manager Marloes Hermsen. “How can we provide insight into the locations of the various study workplaces across the campus?”, she wondered. “And how do we show the occupation and availability thereof?”

The survey highlighted a structural problem that needed attention: the poor allocation of study workplaces.

Other universities

Other universities were approached and were asked how they deal with this universal problem. Hermsen explains: “We looked for interest in exchanging ideas, to see what we could do.” Pending on the organization of the university, solutions were being considered. “It became clear that two universities were working on floor plans, whereas in Nijmegen at that time we were still thinking about working with lists with symbols behind them”, says Marloes Hermsen.

Input from students

Students were then asked for input: representatives of the students council, of faculties (assessors) and other students interested. We organized several sessions with students to discover what is most important to them. “We asked them what is important to them when looking for a workplace”, Hermsen explains. “We also wanted to use that classification. After all, it is key that our offering will be in line with students’ needs.”

Availability at map level

It seemed to be especially important for the students to see the location of the work space, and other spaces nearby, to eat something together and sport afterwards, for example. That is best captured on a map. Hermsen: “That gives them a good overview. They also indicated that they would like to see other peripheral information (like where to find the printer, or the coffee machine), and this must be done at map level. Students did not want to have to register. We have had these principles for study workplaces translated to a layout of sorts of spaces, which were then formally established by all faculties, across the board by the university.”

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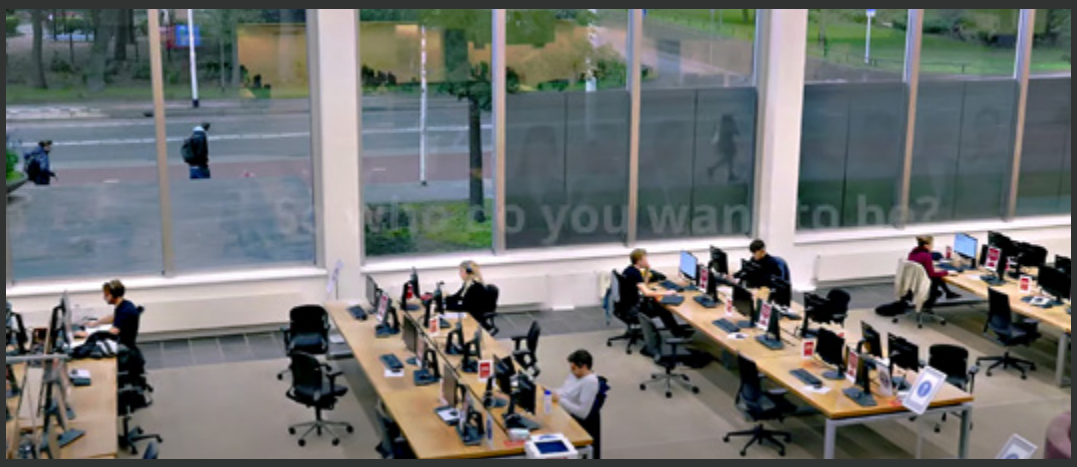
THE SOLUTION | Mazemap and IoT platform SWYCS linked to FMIS system Planon



Radboud University, therefore, needed an information system that would show students where the study workplaces are located and which places are available at that time. That solution had to make use of sensor data to fulfill the students' wishes. It was decided to start a pilot at one of the locations: the university Library.

Hermsen talked to information architects. "Because I have already implemented various information systems, we know very well what is important when introducing a new system. For the visualization of workplaces on floor plans, we soon came across Mazemap. For the sensor data we needed for occupancy and availability, we approached the Internet-of-Things platform SWYCS. Both systems fit well with our IWMS system Planon. We have found an integrated solution with that." Several things were important to request for the pilot including:

- Flexibility to be able to switch quickly and to be independent.
- One central source of information and data.
- High level of privacy protection and security of information.

"We needed an information system that would show students where the study workplaces are located and which places are available at that time. That solution had to make use of sensor data"

Flexibility and independence

The university wanted to quickly address the issue and switch its technology. Their technology was not set up correctly to address space allocation properly. For example, sensors under a seat were not practical to indicate on a map. The sensor data had to apply to rooms, to avoid intensive adaptation of maps. The technology needed to be flexible and have good connections to all protocols. Marloes: “We were explicitly looking for a company that can handle multiple solutions, can use multiple protocols, and can go along with the safety scenario.”

Central information source

It was therefore important to use one central source for all data and information. Hermsen explains: “One of the values in our architecture is the use of a central source, whereby all parties connect to that one source. That is how the puzzle pieces came together for us. SWYCS and Mazemap were able to establish a connection with Planon, which we have been using as the source system for our spaces and buildings since 2009.”

Pilot

It was decided to start with a pilot and to set up all connections first. This way it could be found out whether everything worked as intended. After all, the point was that everything would come together and function in one whole. All parties involved were brought together, together with the information architects and Mazemap. The pilot location was chosen for the university library: “It’s a central location on our campus and very popular amongst students. The campus covers one square kilometer, with all faculties and a sports center. The university library has three floors (basement, ground floor, and first floor), spread over various types of study workplaces.”

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Sensor data

To provide insight into which study workspaces are occupied or not, it was decided to work with sensors. These sensors do two things. In the larger study halls the crowd sensor counts how many people enter and leave a room and are currently in the room and there are sensors in the group workplaces. These indicate whether the workplace is occupied.

Search by type of study workplace and availability

Students can search the various types of study workplaces. With the help of colors on the map, they can see the availability of the workplaces, based on the data collected from the sensors. Those looking for a quiet workplace will see which workplace is available. Additional information can be added to this.

Then the links were built. The easiest part of this is connecting the IoT infrastructure with all sensors to Planon. The link to Mazemap, the app with all indoor maps, took a little longer. The application of this new technology on a large scale proved to be a challenge in making the right connections. The challenge has been the integration of the systems, not the technology itself.

With the use of a central data source, we prevent having to enter the same data in different systems. That always results in inconsistency in information provided. Now it is possible to quickly respond to renovations taking place, changes in opening hours or number of people allowed in the room. When a renovation takes place somewhere, the relevant wing can also be temporarily closed in the application. Students are then directed to other available spaces.

The crowd sensor counts how many people enter and leave a room and are currently in the room and there are sensors in the group workplaces.

THE RESULTS | The university now has real-time reliable insight into the desired data

Real-time Insight into the number of people in a room

Real-time Insight in the available study workplaces

Positive Reactions from students

The acceptance phase has been completed. Radboud University now has an automated real-time insight into the number of people in a room and the available study workplaces. The data was properly viewed and completed together with all professionals involved. Everything is working robustly and reliably.

The success of the pilot is mainly determined by the students. Based on their findings, an evaluation was made to assess the need to further scale up the entire campus, or at least a large part of the campus. Students participated in the acceptance test, which led to many positive responses. The students participating in the test can now easily find all types of available study workplaces on the app's map. This makes an important contribution to the main objective: improving student satisfaction. There are other important aspects. For example, a structure has been set up that can count the number of people in rooms, something that would otherwise require personnel.

Radboud University now has an automated real-time insight into the number of people in a room and the available study workplaces. Everything is working robustly and reliably.

The new way of working also promotes collaboration between faculties. The 24,000 students must be well distributed across campus. This system makes the data transparent so that it can be optimally organized.

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Collaboration partners

The university is very satisfied with its partner’s collaboration. Marloes Hermsen: “We have very short lines of communication with SWYCS. They have been very flexible. No standard product is implemented that cannot be integrated into our environment. We greatly appreciated this flexibility, being open to customization, in line with our security standard, and thinking along with each other.”

Would you like to see Internet-of-Things in action and learn how SWYCS could support your university needs? If so, book a free 30 or 60 minute demo of IoT-platform SWYCS.

BOOK A MEETING

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