

# Rationale of the Design Concept

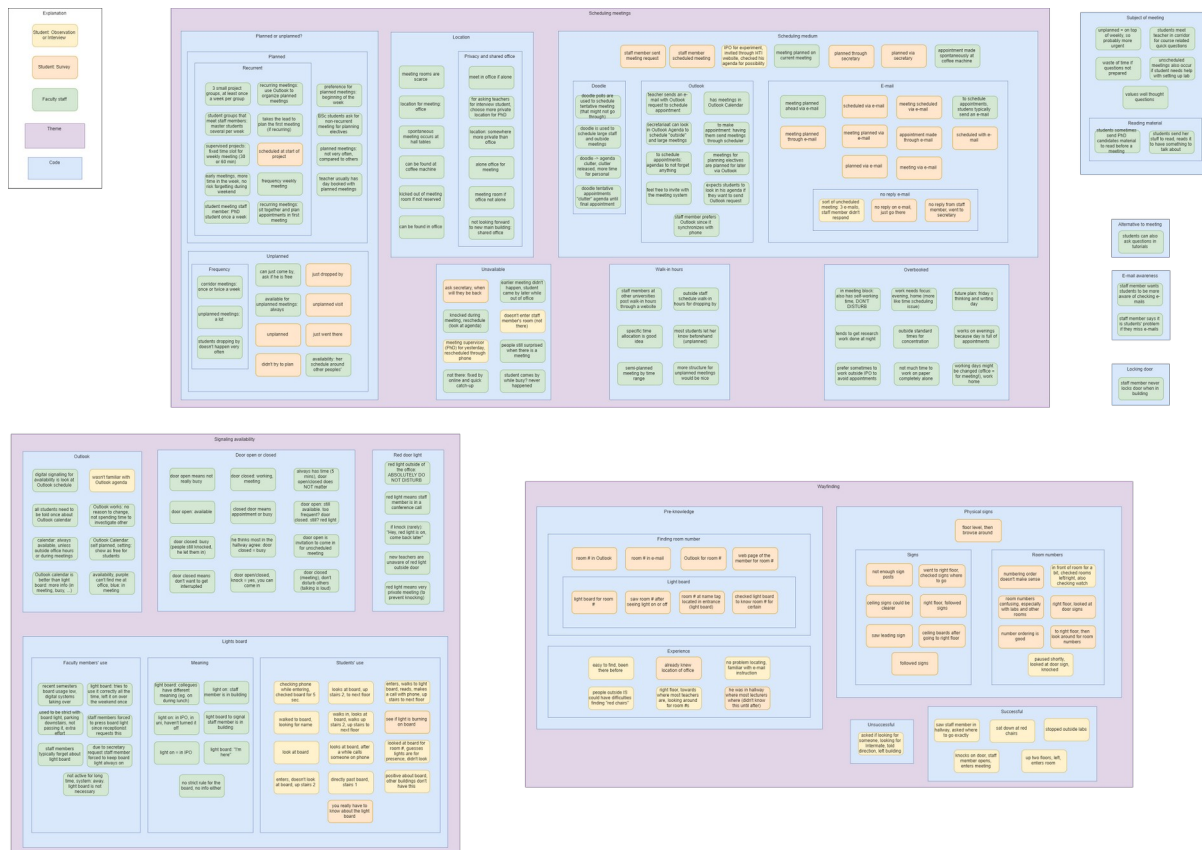
The focus of our user research was to study the experience of students locating faculty members at the IPO building, in order to suggest a design concept to improve such experience. To do this, we conducted observations, qualitative surveys and interviews on students; as well as interviews on faculty members (professors and PhD students). Both students and faculty members provided information that was key to our understanding of the dynamics of the 'before' aspect of student-faculty member meetings outside of class hours.

Firstly, we will explain the themes we found and the main findings per theme.

## Themes

There are three themes we found from organising our data: signaling availability, scheduling meetings, and wayfinding.

Due to the vast amount of data, we used a digital way to show the organization of our post-its instead of using photographs. The yellow 'post-its' indicate the results from observations of or interviews with students, orange indicates survey results, and data on green post-its are gathered from the interviews with faculty members. The post-its are grouped in blue codes, which sometimes contain subcodes. The purple fields show the themes, leaving five codes (containing one subcode) 'themeless'.

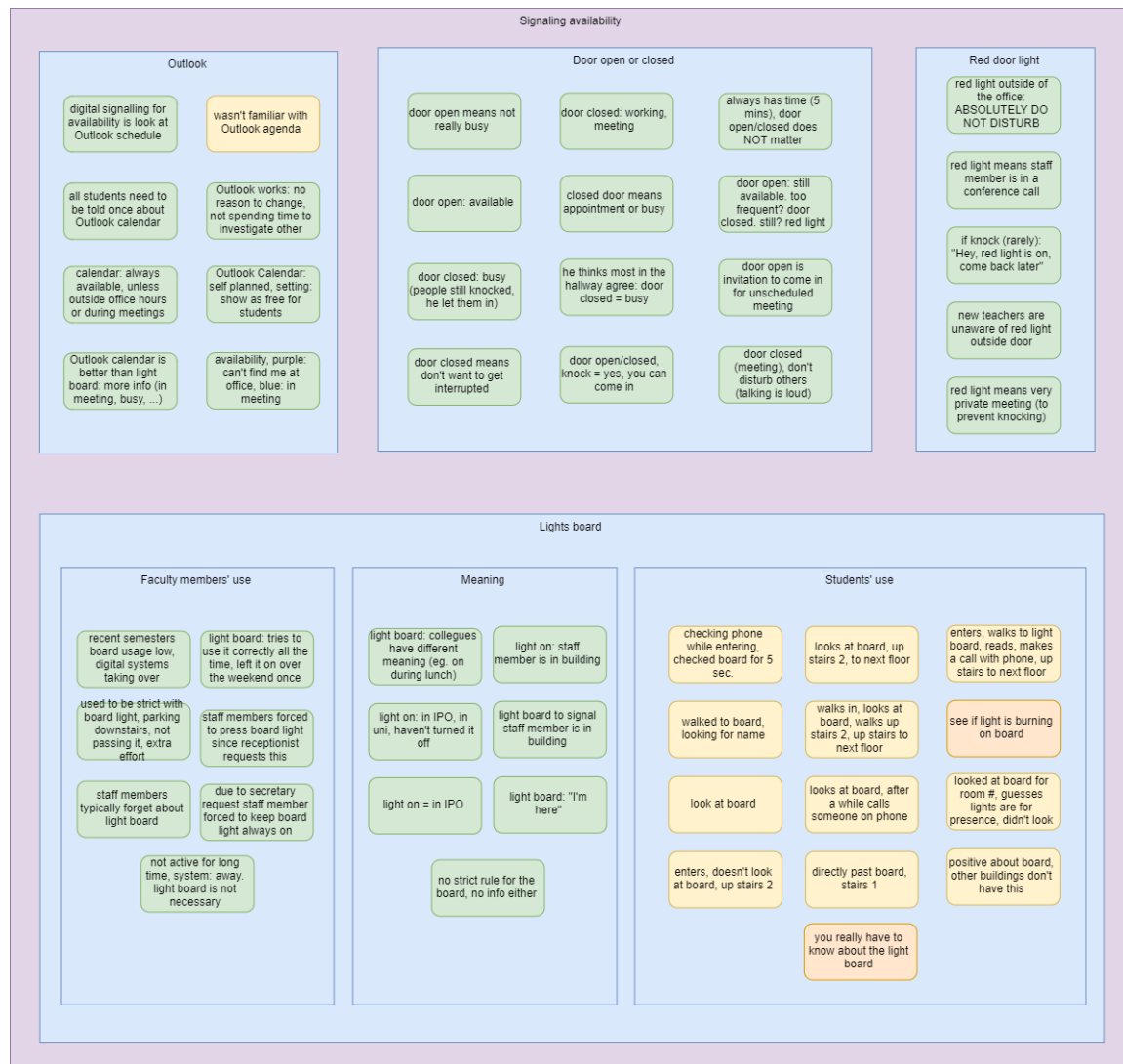


## Signaling availability

There are different methods staff members can use for signaling whether they are available for a meeting (ranging from an actual appointment or conference, to a quick question). The main methods we found are the use of the light board in the entrance hallway, switching the red lights by the office door on or off, leaving their door open or closed, or allocating time in the Outlook Calendar system.

Even though there are several ways for faculty members to signal they are busy, not all of them are clear for students, for instance: "all students need to be told once about Outlook Calendar". There are also other conflicts between faculty members and students, for example: students reported to use the light board's red light that indicates the presence of the faculty member; on the other hand, faculty members stated that they don't necessarily use the light board.

For signaling availability, having a standardized way to communicate this information could be crucial.



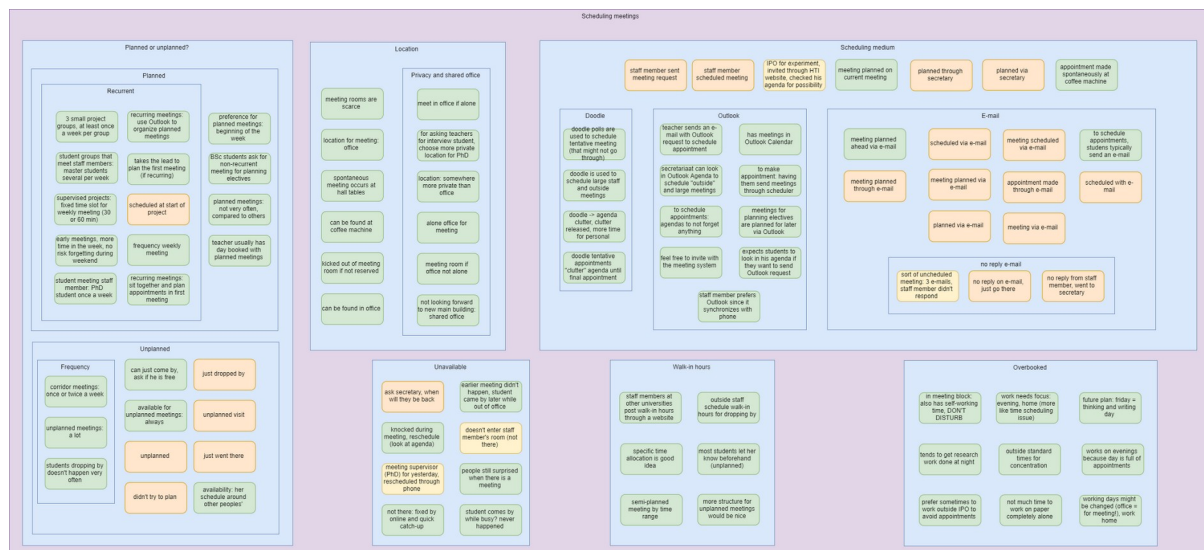
## Scheduling meetings

Some aspects of scheduling include whether an appointment is made at all (planned - which include recurrent - versus unplanned meetings), where the meeting takes place (due to the privacy issue of a shared office or the availability of meeting rooms), and which medium is used to schedule the appointment (secretary, face-to-face, email, Outlook Calendar, Doodle, or other ways). Other codes are the unavailability or absence of a faculty member, walk-in hours, or the problem of (dealing with) overbooked agendas.

There are not many problems with planned meetings or recurrent meetings. The problems lie in the planning itself or the availability of a teacher when showing up spontaneously. Faculty members are mostly positive about using Outlook or Doodle for scheduling a meeting, and to which extent they use email to plan, varies per staff member, creating uncertainty for students.

A lot of meetings are not planned at all, resulting in students walking by the office to see whether the person they want to meet is there. The problems described in *Signaling availability* result in unsuccessful attempts.

Because many offices are shared, staff members often look for other places to have their meeting. One faculty member stated that meeting rooms are scarce, another said that they sometimes get kicked out of a meeting room if they didn't reserve it. For some faculty members whose agenda is already overbooked, they have mentioned and felt positive about setting up a walk-in hour for unscheduled meetings. This finding might be useful for facilitating students to have a face-to-face conversation with a faculty member outside of lecture, hence answering our



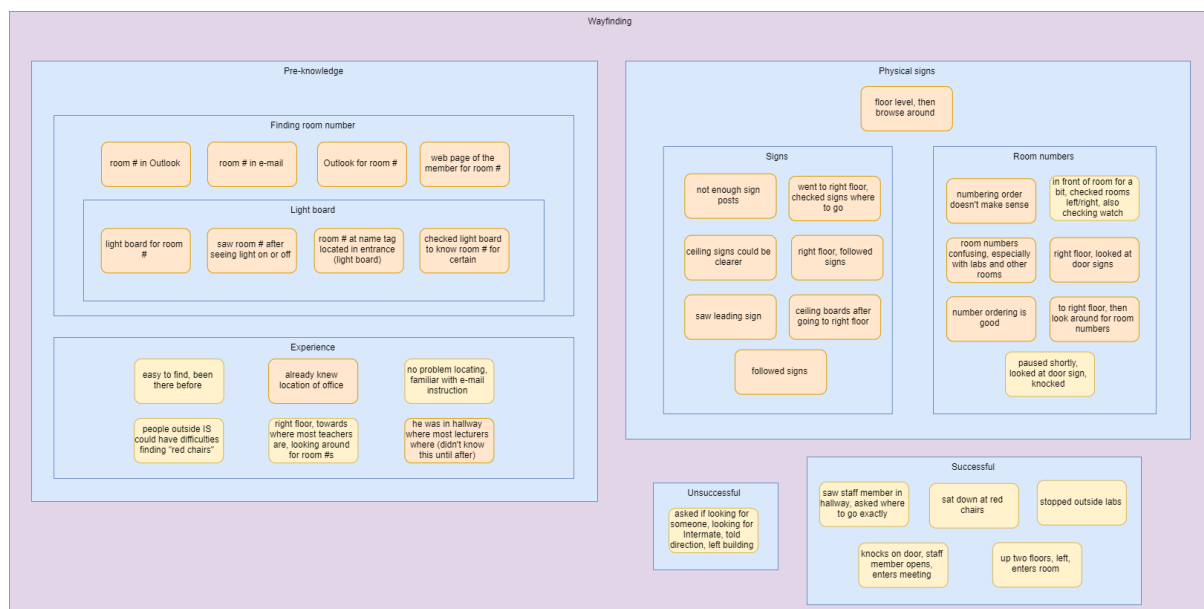
research question.

## Wayfinding

The third theme is wayfinding. To know where to go, some pre-knowledge is required about the location. This can be achieved by using past experience (understanding the layout of the building, having navigated in the IPO building before, or knowing where the specific room is located), or by simply looking up the room number beforehand (whether it's stated in the email conversation to arrange the meeting, by searching the staff member's name in Outlook or on the TU/e website, by looking them up on the light board, or some other way).

After gathering this knowledge, there are physical signs that can be used to find an office or room: the signs at the ceilings or sign posts, or, of course, the room numbers.

Without the pre-knowledge, it might be difficult to locate a certain room in the IPO-building, as reported from students. However, there were not many unsuccessful attempts to find a location in our observations or survey results.



## Problems

By making the affinity diagram we discovered that, to some extent, faculty members and students have opposing needs and priorities when it comes to allocating time for new meetings. Students, on one hand, sometimes require to talk to a teacher to get assistance with a specific subject. On the other hand, teachers usually have most of their day already booked with several meetings planned ahead of time, especially professors. Although the faculty members we interviewed expressed they were open to help students when they were in their offices, they also mentioned that they sometimes come to work outside office hours (ie., very early in the morning or in the evenings) in order to get to do the work they cannot complete during regular office hours.

We found out that, in general, teachers divide their meetings with students in two categories: recurring and non recurring. Recurring meetings are always scheduled in advance and we couldn't identify any major problems from the user data collected. On the other hand we have non-recurring meetings (scheduled and unscheduled), where we found several problem areas in the user experience.

For scheduled meetings (or attempts) we found several problems, the main ones being:

- At least a faculty member did not reply to a student's emails requesting a meeting, as reported by a student. [Related theme: *scheduling meetings*]
- Students usually don't know that they can use the Outlook calendar to check the faculty member's availability and schedule a meeting directly (reported by a faculty member and by a student). [Related themes: *scheduling meetings, signaling availability*]

Unscheduled meetings (or attempts) take place when students walk directly to the IPO building, without a meeting, look for a faculty member and find their way to their office. In the process of this kind of meetings we found several problems, the main ones being:

- Students sometimes don't follow or are not aware of the signals faculty members use to communicate that they are busy. When the door is closed, for example, they want to signal that they are busy and don't want to be disturbed. They, however, answer if there is a knock on the door. When the red light is on, they must not be disturbed at all; yet, sometimes it still happens. [Theme: *signaling availability*]
- Regarding the use of the light board on the entrance hallway. The frequency of use of the board varies between faculty members, with one of them reporting to assume that students do not consider the on/off status of a member's light in order to decide whether he/she is in the building or not. However, a student reported to conclude that a professor was in the building

because his light on the light board was on. [Theme: *signaling availability*]. Thus, we can see that in some cases students and faculty members have a slightly different interpretation of the use of the light board, which can lead to misunderstandings.

- Professors report having a busy schedule and several meetings, and they prefer scheduling all meetings beforehand. They report sometimes having to work at other places (like Metaforum or at home) either during or outside regular working hours. This doesn't occur with PhD candidates, who report being usually available to help students for quick questions during working hours, as long as the door is opened.

Although we acknowledge that wayfinding was not ideal in the IPO building, the existing tools (light board showing faculty members' office numbers and visual signs) allowed all of the students we observed and surveyed to find and arrive to the faculty member's office they were looking for. Thus, for our design concept we decided to focus on tackling issues related to two of our themes: '*signaling availability*' and '*scheduling meetings*'. It was challenging to come up with an idea for a concept that would improve the user experience of two completely different users (students and faculty members), who, as we mentioned before, sometimes have conflicting needs. Additionally, we acknowledged the fact that students already have several IT platforms (web and mobile apps) to interact with TU/e, so we decided not to add an additional one.

## Solutions

Our design concept is composed of three aspects.

1. Remote real time availability and meeting request: In each faculty member's TU/e website page we include, just next to the room number, their immediate availability status obtained from either Outlook or Lync existing platform. Additionally, students have the option to request a meeting with the faculty member directly from that interface. Both functionalities can also be accessed with a smartphone browser. Although the faculty member's office number can also be found via Outlook in the contact information, it requires students to either use the Outlook app on their smartphones or access Outlook via laptops. On the other hand, faculty members mentioned that most students don't know that they can check their availability to schedule a meeting directly through Outlook. Thus, by wiring this information and functionality directly to a platform that is already frequently used and easily accessed by students, we increase adoption, achieve a better use of existing IT resources, and achieve awareness on the functionality to improve both faculty members' and students' experiences. Students are able to plan meetings easier and spend less time on looking for faculty members, and faculty members receive less emails requesting meetings, decrease the

number of interruptions by students who couldn't get in touch with them, and thus can get more work done.

2. The implementation of office walk-in hours. Walk-in hours are specific time frames in which students can look for a faculty member at his/her office to ask whatever question they have. Currently, faculty members reported not having walk-in hours implemented at TU/e. One professor mentioned it as a system that he has seen implemented in other universities, but hasn't tried it personally. We suggest implementing walk-in hours and also including this information on the faculty member's web page, for several reasons:
  - a. Faculty members can minimize interruptions throughout the day by grouping most unscheduled student interactions in a specific time frame. Thus, they can be more focused on their work for the rest of the day and increase their productivity.
  - b. Students who have trouble getting in contact with very busy professors, or professors whose agenda is fully booked, will always have specific times of the week where students can go directly to their office to speak to them. These professors, on the other hand, will probably receive less emails from students requesting meetings which can saturate their inbox.
  - c. For faculty members who are not using Outlook Agenda, it requires a minimal effort from them by setting up regular walk-in hours once per quartile.
3. Automated light board: this is an extended concept from concept 1. The light board will be controlled by an external system that make use of the of the availability status obtained from Outlook, and we will be replacing the current red-light with RG-LED (green means available, red means busy, off means absent). As soon as the teacher logs in their Outlook account within the TU/e network, the corresponding color of light will be turned on. In this case, it doesn't require any faculty members to spend additional effort for the light board and we can provide a more understandable interface for students. This concept can be crucial because of the following conflict: some staff members had reported that they stopped using the board, but there are still some students using it (checking the light). Therefore, we think it is important to provide a clear and stable functionality of the light board for the students. Furthermore, several reasons for staff members not using the board anymore are:
  - a. Digitized system (Outlook Agenda) is easier to use.
  - b. Walking to the main entrance takes additional effort.
  - c. Sometimes just forget to turn on/off the light.By automating the process (connecting to Outlook), this should solve the usability problem from the staff members' perspective. For members who don't use the agenda system, they will adapt to concept 2 (walk-in hour). The

light board can still detect the office time (via logging into Outlook email in the TU/e network) and the pre-set walk-in hour.

We acknowledge that many types of student questions could be resolved via digital interaction (e.g., email, instant messaging). However, as Endo and Harpel (1982) found out, an increase in the frequency of interactions between faculty and students is associated with an increase in personal, intellectual and social outcomes. Thus, we decided to exclude design concepts that replaced physical interaction with digital interaction. Instead, we chose to focus on improving the experience of the planning before face-to-face meetings, with the objective of increasing the number of students who take advantage of these interactions.

## Design Concept

The video containing the design concept can be found here:

<https://www.powtoon.com/c/d9K9ufhjZTL/1/m>

## References

Endo, J. and Harpel, R. (1982). 'The effect of student-faculty interaction on students' educational outcomes', *Research in Higher Education* 16(2), 115-136.