Connecting Physical Activity with Office Work through Integrated Systems

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Physical activity as a part of work

Based on a scoping review of tools and technologies that aim to reduce sedentary behavior or increase physical activity in the office environment [2], we found two gaps in current practice. First, we saw that digital tools and interventions make limited use of existing office tools and infrastructure. Second, we found that within these tools and interventions, physical activity is most often considered a break from work.

Making physical activity a part of work, not as an end goal but as a means to an end is challenging. The office environment is a complex adaptive system which can be studied from many perspectives. As a researcher at the faculty of industrial design, I try to balance data and intuition, thinking and making and planning and acting to explore, create and evaluate healthy office work. My research aim is to "Improve the integration of physical activity into work in order to increase the vitality of office workers". Walking meetings offer a promising solution to this problem as they facilitate a physically active way of working.

Figure 1. We reviewed current tools and technologies aimed to reduce sedentary behavior or increase physical activity in the office environment

This pictorial, a research article illustrated by pictures, shows the exploration of 'The WorkWalk', a service design to stimulate and facilitate walking meetings. This idea arose by merging a traditional health research approach with an iterative design process [1]. With this method, it was possible to integrate behavior change techniques effectively into an interaction design process.

In the development of the WorkWalk [1] we had several iterations, ranging from a duct tape route on campus (Figure 2), to additional features along the walking meeting route that can be used to facilitate work related tasks during a walking meeting.

The WorkWalk consists of three elements; 1) a visible dotted line that serves as a walking meeting guide, 2) signs to mark meeting points and additional information of the Workwalk and 3) the integration of a Workwalk

within the room booking system of the university. The route was created with the help of the app 'blokje om', field explorations and route tracking. The 'blokje om' application generates routes based on a pre-set time. Using this app several options for approximately 30-minute walks were explored. After several explorations and based on the requirements listed a first route of 25 minutes was mapped out. For the first test, the route was set-up as a minimal viable product with the use of a 1.8 km dotted line of blue tape.

Figure 2. Exploring the WorkWalk concept with a WorkWalk prototype by duct taping a 1.8 km long route on the Eindhoven University of Technology campus

Figure 3. The three elements of the current WorkWalk installation. The room booking system, the meeting point sign, the dotted line along the path

In addition to the line, two types of signs were made to inform and persuade potential users: meeting point signs and information signs. The meeting point signs explained the 'use' of the Workwalk and are placed at the entrance of a faculty building. The information signs, placed along the route, showed information about Workwalk such as the duration, explanation on how to book a Workwalk. In the current WorkWalk design, the two signs were merged into one meeting point sign placed outside at all faculty buildings (Figure 3).

The third element of the Workwalk consists of the integration of the Workwalk in the planning system of the university. In the initial testing phase a functional mailbox was set up in order to 'book' the Workwalk. By adding the Workwalk email address to the meeting users were able to book the Workwalk. The mailbox was set up so that all invitations from users were automatically accepted. The researchers managed this mailbox and were able to see the number of bookings and the users that booked the Workwalk.

Studying Walking Meetings by means of the WorkWalk

To inform future development of technologies supporting walking meetings, in-depth qualitative insights into people's experiences of walking meetings were needed. We conducted semi-structured walking interviews (N=16) to identify key barriers and drivers for walking meetings [4]. By using the Workwalk, we provided insights into how walking meetings affect the set-up and social dynamics of meetings. We also proposed three design considerations for improving walking meetings in HCI by technology: Design for user sensitivity, enhance work culture and close the gap between walking meetings and regular meetings. Detailed descriptions of these design considerations can be found in Damen et al. (2020) [4].

With this previous work [4], we have set the stage for future HCI research explorations and the development of supporting technologies for walking meetings and other active ways of working.

Further Interaction Design Explorations

Several obstacles that limit the social acceptance and wider adoption of walking meeting practice have been highlighted in previous research. Amongst these, the difficulty to take notes or present files is a recurring concern for office workers. To address these barriers, we designed the Hub (Figure 4), a network of stand-up meeting stations that accommodate different work-related tasks during walking meetings [3]. Several Hubs are placed in series and form a network of landmarks that guide the meetings. A hub is equipped with one to four integrated touchscreen-controlled laptops with RFID scanners that connect to the employee card to a custom-made web environment.
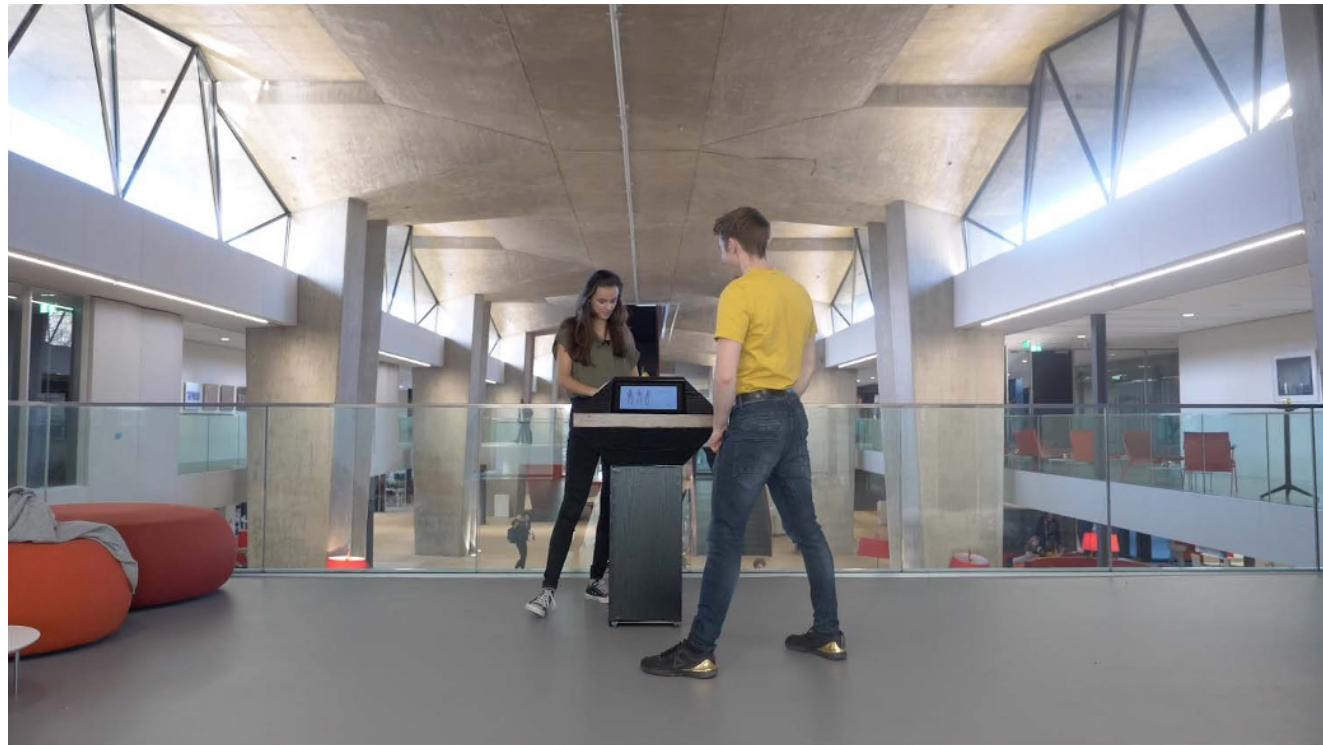

Figure 4. The Hub, a network of stand-up meeting stations that accommodate different work-related tasks during walking meetings.

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