Session 6B: Hybrid Working 1

The hybrid-work office: Exploring the changing knowledge-work office in a living lab

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ABSTRACT

Post-corona hybrid working in many knowledge-based organizations resulted in hyper-flexibility for individuals in their work situation decisions. This caused organizations to consider the facilities offered in the traditional office in a new light. The Dutch government set up a living lab to explore how hybrid working changes the physical and social needs that should be facilitated in the workplace. Living labs can be considered 'real-life' experiments, where monitoring, evaluation and interventions in the work environment are cyclically implemented, in close collaboration with the end-users of the office and the professionals who manage the work environment. However, moving beyond actionable micro-level learnings toward strategic input remains a challenge in living labs.

Design/Methodology/Approach: During 2023, researchers cyclically monitored and evaluated office users' experiences in a new hybrid work environment in a living lab in Amsterdam. Lessons from end-

users were placed into a framework in collaboration with facility managers and strategic managers of hybrid working.

Findings: We present a framework developed by facility and strategic managers, the micro-learnings from the end-users in the living lab, and the value of the outcomes of the living lab. Findings highlight the impact of hybrid working on social behaviour and agreements in the workplace and the changing needs in both the facilities and services in the building. The factors that enable flexibility in a hybrid work environment in organizations are discussed.

Limitations: There are numerous methodological challenges of a living lab monitoring and evaluation approach because of the constantly changing environment. However, the internal validity of the findings is very high, for precisely the same reason. Findings inform policy recommendations for the social and physical implementation of hybrid office environments; ultimately enriching the discussion on the factors impacting the balance between user' experience of hybrid workplaces and organizational support for healthy workplaces.

Keywords

living labs, hybrid working, office, micro-level learnings, outcomes.

INTRODUCTION

Hybrid working has quickly become an accepted way of working in the past two years, with adoption of this practices soaring worldwide (Marzban et al., 2023). Hybrid working emerged as a direct result of mandatory working from home during the COVID-19 pandemic. The pandemic served as a learning experience for workers and organisations, demonstrating that many tasks can be effectively carried out from the home office. It represents the newest iteration of teleworking, enabling workers to conduct a portion of their work outside the traditional office setting and collaborate with others through digital tooling, and activity-based working (Allen et al., 2015).

Two key aspects characterize hybrid working. First, an emphasis on individual choice and flexibility in work decisions of office workers, especially knowledge workers (Nenonen & Sankari, 2022). Second, there is a notable increase in the number of office workers who prefer to work at home and not in the office. This has also become generally more acceptable in society (Babapour Chafi et al., 2020)

Hybrid working presents a potential economic benefit for organisations in that it may lead to a more efficient use of office space (Mosteiro-Romero et al., 2023). The societal acceptance of hybrid working and the personal flexibility in decisions about when and where to work, may lead to different activities in the office. This shift in behavioural patterns raises new questions in organisations. Organisations need to reconsider the flex-work policies, the facilities provided and social agreements in the workplace. For instance, reconsidering the balance between quiet workspaces for concentrated work and spaces for collaboration and socialization (Colenberg et al., 2022), or identifying patterns in behavioural choices of knowledge workers to estimate the facilities needed in the office (Appel-Meulenbroek et al., 2022).

To explore hybrid office-workers' behaviour, and the implications thereof for facility- and strategic managers of hybrid working, a living lab was set up in Amsterdam by the Dutch Government. In this paper we will discuss the user-experiences, the manager's interpretation thereof and the value of the outcomes from the living lab in Amsterdam (LLA). The research questions are:

a) *What are the end-user experiences in a new work environment designed to support hybrid working?*

b) *How can end-user experiences be translated into a framework to adequately support hybrid working?*

What are living labs?

Living labs refer to a cyclical process of information collection and feedback focused on the development of innovative solutions over a period of time in a real life context. The aim is to support learning, innovation and growth in an organisation, as the organisation deals with the problems encountered by the participants in the organisation (Schuurman & Tõnurist, 2016). Living labs have two main characteristics, a) they are "real-life test and experimentation environments" and b) users of the environment are "co-involved in the innovation process" (Dell'Era & Landoni, 2014, p. 139).

'Users' in the LLA are the employees making use of this new hybrid office environment. These end-users are considered the main information sources for unique insights into the work environment. These insights can be uncovered by research leading to a deeper understanding of users' needs and behaviour (Dell'Era & Landoni, 2014, p. 137). The value of end-users' unique insights help tailor design solutions

and lead to better adoption of the proposed solutions (Chayutsahakij & Poggenpohl, 2002; Veryzer & de Mozota, 2005). In the hybrid work context, this means that the employee (end-user) working in a specifically designed hybrid-work office (living lab) may have unique insights in the use of products and services implemented to support his or her work.

However, living labs tend to be practice-driven, wherein the "theoretical underpinnings and foundations are mostly established 'post-hoc'" (Schuurman & Tõnurist, 2016, p. 78). Dekker et al., (2021) note that living lab experimentation tends to be generative, which produces actionable learning; however, they recommend that evaluation should be explicit and aim to stimulate democratic and robust academic learning. 'Results' from living labs are an elusive concept and in some cases "implementing an open innovation perspective is considered more important than obtaining specific innovation results" (Gascó, 2017, p. 90). Because of the focus on end-user experience in a real-life environment, the outcomes from the living lab are rich and diverse, but also very often fiercely individual. Fuglsang et al. (2021, p. 13) call them "micro-level" learnings. It is a known challenge, and also experienced in this project, to translate micro-level learnings from living labs into valuable general outcomes for of the larger organisation and eventually become of value in society. Moore (1995) terms these beneficial outcomes public values. In the following section, we explore the value of living lab outcomes.

The value of living lab outcomes

Haug and Mergel (2021) indicate outcomes from living labs as either tangible or intangible. However, Fuglsang et al. (2021) provide a more elaborate description through a thorough systematic literature review of research outcomes from living labs. They identify four types of public value outcomes from living labs: a) administrative value, b) citizen value, c) societal value and d) economic value (Fuglsang et al., 2021, p. 11). First, outcomes from living labs enhance administrative processes and drive organizational change by providing a safe environment for experimentation. Second, living labs prioritize citizen-(or in our case user)-centric approaches, fostering partnerships between government and citizens while promoting inclusiveness. Third, they facilitate public sector innovation and collaborative problem-solving, contributing to societal advancement and the democratization of innovation. Finally, while not often documented, living labs have the potential to create economic value through the development of new products, process improvements, and addressing complex societal issues via open innovation strategies.

Research context and goal

In this paper, we have three goals: 1) to indicate the micro-level learnings from end-users in the hybrid work environment, 2) to indicate the practical framework developed in collaboration with facility managers (FM) and hybrid working strategic managers (SM) to categorise the micro-level learnings in the living lab and 3) to illustrate the contribution of living labs to innovation in the hybrid work environments using the designation of public value of living labs identified by Fuglsang et al. (2021).

By doing so, we provide an example of how micro-level learnings from living labs can effectively contribute to the development of guidelines from hybrid work environments that are responsive to the needs of end-users and helpful for managers of the hybrid work environment. In the next section, we describe the research approach.

Method

Two researchers were involved in assessing this new LLA hybrid work environment and collected data between February and December 2023.

Two types of participants were involved in the LLA. The first type was office workers (end-users) using the new hybrid work environment as their main place of work. The second types of participants consisted of facility managers and hybrid working strategic managers who were responsible for setting up and managing the office. It is important to note that input from the two types of participants occurred iteratively. This means that micro-level learnings were collected from end-users, and a draft framework was developed by facility and strategic managers, followed by more micro-level learnings collected from end-users etc. The data collection processes are described separately in the following section.

To collect insights from end-users about their experiences in the hybrid work environment, four data collection methods were used: (1) observations; (2) semi-structured interviews; (3) survey data and (4) focus groups. Using triangulation of methods enhanced the validity and credibility of the findings by utilizing these multiple data sources for the outcome of the experiments (Creswell & Plano Clark, 2011). Data collected from end-users resulted in micro-level learnings about the satisfaction and preferences of office workers in this hybrid work environment.

To develop a practical framework for categorization of the identified micro-level learnings, workshops were organised with facility managers and hybrid working strategic managers. In the living lab, the role of facility managers were to address the concerns voiced by end users, while the strategic managers helped to develop the framework needed to interpret the lessons learned from end-users and to communicate the lessons outside the organisation. Workshops were held with both facility and strategic managers at three moments during the year: a workshop was held in May 2023, an intermediate feedback and discussion session in July 2023 and a final evaluation session in November 2023. During these sessions, the micro-level learnings gathered in the hybrid offices from end-users were discussed.

In the results section, we first present the framework developed and thereafter the micro-level learnings from the living labs in the newly developed framework. In the discussion section, we indicate the value of the living lab outcomes using the four public value elements identified by Fuglsang et al. (2021).

Results

First, we present the practical framework developed in collaboration with facility and strategic managers of the hybrid work environment. Even though micro-learnings were used to develop the framework, it is necessary to present the framework first and the organised micro-level learnings thereafter. Through collaborative categorization and sense-making during the workshops, micro-level learnings were grouped into five perspectives. These perspectives centre around organisational aspects, social aspects, facilities and services, building related aspects and aspects dealing with the monitoring and evaluation of the living labs itself. This co-created framework helped facility and strategic managers to structure feedback from end-users, enabling strategic response to the micro-level learnings from end-users. The framework is presented below, showing the five perspectives and a description of the impact of this perspective on the hybrid work environment.

Table 10 Framework for categorising outcomes from living lab experiments into five perspectives

Perspectives	**Description of the perspective**
Social	Behavioural norms and agreements about the use of the work environment. For example, at team level, assigning team zones in a flex work environment or agreements about noise management through quiet zones.
Facilities, facility management and services	Physical elements, furniture, and equipment in the work environment, and serviceand service packages impacting the use of the work environment. For example, security services, building opening times, and cleaning services.
Building related aspects	Construction and infrastructure of a building. For instance, climate installations, temperature management, way finding and parking facilities.
Organizational	Policy and guiding principles for the use of the work environment. For example, implementation of clean-desk policies, flex-work policies or implementing a living lab with co-creation in a work environment.
Monitoring and evaluation	Procedures, methods, and communication associated with the research process in the living lab. For example, ensuring end-user participation through timeous and adequate communication.

Subsequently, we plot the micro-level learnings collected from end-users into these five perspectives in the framework above. These are presented in the following section.

Hybrid work micro-level learnings from the LLA in the framework

We use the framework to present the micro-level learnings about end-users' hybrid work environment requirements. In the left column is the perspective, then the micro learning from the LLA and on the right, the implication of the micro-level learnings for the facilitation and development of the hybrid work strategy.

Table 11 Implications of micro-level learnings on the hybrid work strategy and facilities

Perspective	**Mico-learnings from the LLA**	**Implications for hybrid work strategy and facilities**
Social	The primary purpose of coming to the office is the work.	The primary activities necessary to complete work, i.e. the work process, has not changed due to hybrid working and all work related activities should still be facilitated in the office.
	The secondary purpose for coming to the office is to *work near colleagues* and *to meet informally*.	Facilities to support collegiality and team work are preferable.
	"Informal meeting" occurs in a diverse range of physical workspaces. At the coffee station In the corridors At the desks while working	Facilities and collective agreements on behavioural norms to support informal meetings are preferable.
	When meeting informally at desks, teams areas emerge.	Hybrid working accentuates the need for team areas.
	Teams tend to use the same workspaces every day.	Team areas to some extent constrain the flexible use of the office environment.
	Social agreements (with the help of team leaders) are made about: 'claiming' behaviour 'informally meeting' at desks (due to the distraction it creates)	Collective agreements on behavioural norms should be developed and supported by leadership.
	End-users prefer not to verbally communicate social agreements (i.e. reprimanding colleagues) to address behavioural problems in the work environment.	Communicating social norms for addressing problematic behaviour in the work environment should be communicated visually or in writing.
Facilities, facility management and services	Diverse facilities in the office are used during a normal workday (desks, phone booths, formal meeting rooms and informal areas).	The primary work process has not changed due to hybrid working, and all work related activities should still be facilitated.
	Activities like "concentrated work" and "informal meeting at the desk" cause friction when near each other.	Hybrid work accentuates the difference between concentrated work (in a quiet area) and interaction with others (also online).
	Phone booths are frequently used for online meetings	Facilities to support hybrid work are often used in the workplace.
	Phone booths are not soundproof	For safety reasons, phone booths should still allow the occupant to hear a fire alarm.
	Phone booths are not soundproof	Phone booths should therefore not be placed in 'concentration zones' but rather bordering zones where noise and interaction is encouraged.
	Phone booth designs are cramped, without 'desk space' and too transparent	Improvements to phone booths designs were advised (larger desk space, opaque glass and clever placement in the office environment).
	Meeting room for stand-up meetings are not used because it is not reflected in the work process.	Facilities to support hybrid work should match the work process.

	Custom options on some desks (such as in-desk wireless chargers / docking stations / screens) create preference patterns in desk-selection.	Diverse desk configurations with custom options constrain flexible use of the office environment.
	Small lockers and lack of coat racks result in occupied workplaces, even when not in use.	Limited personal storage space (such as small lockers or absence of coat racks) increase 'claiming' behaviour in the office environment.
	Limited view on others' desks is pleasant.	Visual privacy in the work environment is preferable.
	View on plants/greenery in the office is pleasant.	Visual view on plants/greenery is preferable.
Building aspects	Users have limited knowledge of facilities available for their use in the building (beyond their floor).	Lack of awareness of available spaces constrains flexible use of the office building.
	Strict building opening hours (7:00 a.m. — 6:00 p.m.) prevent an early start or working late.	Strict opening and closing times constrain flexible use of the building.
	Colleagues from different departments (of the same organisation) have limited access to the building.	Limited (or ad hoc) access hinders interdepartmental colleagues to meet.
	Lack of parking facilities impact the decision to come to the office.	Limited (or ad hoc) access hinder office attendance.
Organizational	When a large proportion of the work floor is dedicated to a specific work activity (for instance informal meeting) which does not align with the work process, it leads to end-user dissatisfaction.	Hybrid working may lead to lower occupancy, enabling a lower flex factor. Be aware, that the flex-factor is not something users comment on. However, all work related activities should be facilitated in appropriate proportions.
	Setting up a living lab for safe experimentation helps FM to better empathize with the end-user.	Hybrid working requires some adjustments to facilities, services and social agreements in the office. Living lab is an appropriate method to identify and develop these adjustments
Monitoring and evaluation	Co-creation contributes to an engaged end-users.	The method can help to develop support for the behaviour changes in hybrid working.
	Interactive and more visible forms of data collection yield more rich results than passive research.	Development with end-users also requires active participation and regular feedback.

Discussion and conclusion

The aim of the LLA was to learn about hybrid working and to grow as an organisation in facilitating hybrid working effectively (Dell'Era & Landoni, 2014). From the micro-level learnings and framework, the following lessons can be formulated. First, the exploration of hybrid working using a living lab promoted participation, conversation, and trust between the end-users and the facility and strategic managers team in the LLA. Small adjustments in the workplace made by FM as a result of the input from end-users earned their trust and created a better work environment with minimal effort.

Second, the work activities completed in the workplace (i.e. the work processes) did not significantly change as a result of hybrid working. End-users still expect to be able to complete all work-related

activities at work, not only social activities (Colenberg et al., 2022). Although the activities did not change, the difference between concentrated work (in silence) and working together (not in silence) is more accentuated in the hybrid work office. Therefore, additional areas /facilities or additional behavioural agreements are needed to support effective work in the hybrid office.

Third, in terms of efficiency, a hybrid work environment should support flexible use of the provided facilities because of the lower occupancy rates (Mosteiro-Romero et al., 2023). From the micro-level learnings, it is clear that the following measures could encourage flexible use of the work environment:

- Offer standardized workspaces (including standard desks, screens, docking stations, chairs, and access to a view on greenery).
- Offer diverse typologies of facilities that support hybrid working (phone booths, discussion nooks, desks (for concentrated work in quiet areas and for discussion while working in noisy areas).
- Offer personal storage space to prevent 'claiming' a specific workplace.
- Broaden access and knowledge of the available spaces to ensure optimal use of the building (awareness of possible workplaces, building opening times and authorisation to enter the building).
- Offer support to facilitate the discussion about behavioural agreements about the use of the office environment.

It is important to note two conflicting impacts of hybrid working. Hybrid working causes lower occupancy in the office and therefore require more flexibility to ensure offices are optimally used. At the same time, hybrid working cause end-users to primarily come to the office to work near their colleagues, resulting in a need for team areas which is in opposition with the idea of flexible use of the office, in which anyone can sit anywhere at any time.

We have highlighted the micro-level learnings from end-users in the hybrid work environment and placed them in the framework developed in collaboration with facility and strategic managers. The outcomes of the living lab can broadly be categorized as tangible outcomes and intangible outcomes, as described by Haug and Mergel (2021). Organisational norms for hybrid working, facility managers' co-creation practices with end-users and social agreements in the hybrid workplace are examples of intangible outcomes of this living lab. Tangible outcomes deal with the suggestions for improvement of products and office furniture and layout that could enable a more pleasant hybrid work environment.

The values of the LLA can also be described using the classification of living lab outcomes by Fuglsang et al., (2021). The LLA process improved the administrative processes within the organization and contributed to a safe environment for experimentation in which both types of participants (end-users, facility and strategic managers) in this study felt taken seriously in their different perspectives. This is an example of the administrative value of a living lab. By setting up a living lab in the organisation, the employees of the organisation were included in the decision-making process, leading to a user-centric

hybrid work environment. An environment with which both end-users, facility and strategic managers were satisfied with, which can be classified as a citizen value. By spreading the lessons learned, this paper highlights the societal value of the LLA.

Through collaborative problem-solving, the lessons learned in the living labs are not only beneficial to the host organisation and their employees, but are communicated to other organisations contributing to a societal advancement of solutions for hybrid working – another societal value. The economic value of the LLA, lies in first identifying and then solving the unique challenges of office workers in a new hybrid work environment created. Improvements in terms of the necessary social agreements, facilities, and services to support flexible and hybrid working, and the policies for the vision of the future of work were improved. While, in the process, learning and growing as an organisation (Schuurman & Tõnurist, 2016)

Living labs, of which the LLA is an example, often have difficulties translating the micro-level learnings to a broader strategy or academic knowledge. The LLA illustrates how the researchers approached the conceptualisation of the micro-learnings by including FM and SM in the development of a framework. Future research could include a somewhat broader range of decision-makers and professionals in the process. Testing this framework, or developing a framework in collaboration with decision-makers, may be a valuable approach in other living labs. This may assist in moving beyond generative experimentation (Dekker et al., 2021) toward formulation of strategy, explicit evaluation of outcomes and development of academic knowledge.

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