



# USER EXPERIENCE DESIGN

## Flying Lab Factory Report

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## Project Summary

The Flying lab Factory is an innovative space equipped with flexible areas and high-quality technology for the purpose of holding workshops, training courses or presentations. It's part of Lufthansa's system and it's intended to be used by Lufthansa's internal customers primarily.

Our task was to create a multi media representation of the FlyingLab Factory that shows the products & services offered by the FlyingLab Factory in an easy-to-understand manner, inspiring potential users to try new ways of working and book a variety of services, not just rooms. The process of booking has to be streamlined and straightforward, allowing customers to quickly and efficiently access the products and services offered by FlyingLab Factory.

The project went through many stages, starting from defining the context of use and interviewing users to the final design, testing it, and then presenting the proposal in front of Lufthansa group.

## **Background**

FlyingLab Factory is a unique innovation, creativity, and project space offering professional support to individuals and teams from the initial idea stage through to the minimum viable product (MVP) stage. The Factory is designed to inspire, support and facilitate the development of innovative ideas into successful products or services. The concept of FlyingLab Factory is circular, with two inner and outer circles covering an area of 1000 square meters. The inner circle represents the entire passenger journey, while the outer circle represents the entire innovation journey.

### The inner circle: the passenger flight

The FlyingLab factory's inner circle is designed to replicate the entire passenger journey, from the living room to the airport, security check, model aircraft with real aircraft seats, and business and leisure destinations. Individuals can immerse themselves in the passenger experience for inspiration or recharge their batteries in between an innovation journey.

### The Outer Circle: The Innovation Journey

The outer circle of the FlyingLab Factory is designed to represent the entire innovation journey, from the initial idea to the MVP stage. The innovation journey begins with the project kick-off, where teams can get to know each other by cooking together in the event kitchen. The factory has two creativity rooms where teams can launch their first ideas through innovation workshops. Individuals can also conduct storytelling training or give presentations and record a video in the green screen mini video studio.

If the presentation is successful, individuals can use the creative rooms or the medium-sized curtain room for a week-long design tour, prototype development, and testing. If the prototype is successful, individuals can create a project team and reserve one of the 5 project rooms for up to 6 months and adjust according to their needs to develop their first MVP with the project team in an agile setup. Once the MVP is ready, individuals can present it to a large audience in the large event area or broadcast it to a larger audience in a professional broadcast studio.

All steps of the innovation journey can be supported and adapted to the needs of individuals or teams by an experienced team of innovation coaches (thinking and prototyping), agile coaches (agile development and project MVP), and event consultants (kick-off, conferencing, flow). The team of trainers is available to provide expert guidance and support at every stage of the innovation journey.

## **Challenges and motivations**

In today's world, digitization has become the cornerstone of the success of any business, especially in the service industry. As a provider of innovative training services and offering a wide variety of premises to its clients, Flying Lab Factory understands the importance of creating a digital ecosystem that supports booking, marketing, and overall customer experience. It is crucial for a company to adopt a user-centered design approach to achieve this goal.

In order to create an exceptional user experience, we have conducted several interviews with our customers, which include Flying Lab trainers and potential customers who may use the Flying Lab Factory premises. Through these interviews, we were able to determine the usage context, user requirements, and user needs. Based on this information, we have designed a comprehensive user experience, starting with the booking website and ending with the site navigation. Our focus has been on making sure that every aspect of the digital system is tailored to the needs of our customers.

Given that the digital system is intended for the Flying Lab Factory, which is part of the Lufthansa Group, a leader in the aerospace industry, we wanted to ensure that the theme of the system was in line with the aviation industry. So, we created a booking experience for Flying Lab Factory which simulates the overall experience of booking a flight. Booking packages are designed to be similar to those found on airline websites, providing customers with a seamless booking experience. In addition, we have implemented a navigation system, complete with arrows on site and signage on the premises, to help customers easily navigate their way around the Flying Lab Factory.

Flying Lab Factory understands the importance of digitization in today's business world, and we are committed to providing our customers with an exceptional digital experience. With our user-centered design approach, we have created a system that is tailored to our customer's needs and that simulates the seamless experience of booking a flight.

## **Goals and Tasks**

Our main goal was to produce design solutions that would improve the overall user journey for the flying lab factory's internal and external clients and solve booking, marketing, and user journey problems for the flying lab factory. To accomplish this task, we take the user-centered design as an approach to produce the final design solution, and this was by starting to understand the context of use and conducting several interviews with our main client which is the Lufthansa flying lab factory coaches team and the interviews with the internal and the external clients.

### **User-centered design process**

A user-centered design process has been adopted as our approach, which can be divided into four basic components as described below:

#### **Understand the context of use**

This was by creating an online meeting with the flying lab factory team to understand the place and our role as designers, and also having an excursion to the place itself and conducting interviews with the coaching team this helped us understand the situations in which the solution would be used, learn about the specific groups and tasks involved, and ultimately identify users' needs.

#### **specify user requirements**

This happened by conducting interviews with clients both internal and external visited who have visited the flying lab factory previously, gathering the data, and analyzing it to identify user

requirements to satisfy their needs in the specific context of use. This was a critical step in the user-centered design process and these requirements served as the foundation for developing the prototype and conducting an evaluation to determine whether the system met the identified

### **user needs.**

Producing design solutions

Based on the earlier defined needs and requirements, the design solution was a creative experience that simulates the passenger's journey, which satisfies the user's needs and fulfills them.

### **Evaluating the design**

We obtained feedback by testing the features to determine if the solution aligns with the identified needs and intended context of use.

## **Context of Use**

According to ISO 9241-11, which is the international standard for usability, the context of use refers to the "characteristics of the users, tasks, equipment (hardware, software, and materials), and the physical and social environments in which a product is used."

In general, the context of use has two aspects. The first is understanding the target "user," and the second is understanding the project "environment." The research should include the "current" situation of the user and the environment, as well as the features and services of the "expected" design product.

In our project, the users are separated into two groups: internal users of the flying lab factory and the external group. Each of them has its characteristics according to the context of use research that has been done.

### **The Current Situation:**

1- Understanding the **User** context of use: In the case of understanding the user, our team conducted several interviews with the target users and with the flying lab factory agile coaches. The data has been collected and analyzed to specify the common features of our target groups, such as expected goals, experiences, level of curiosity, etc.

2- Understanding the **Environment** context of use: In this case, our team had an online meeting with the flying lab factory team to understand the place and our role as designers. We also had a site visit to the flying lab factory to understand the physical and social environment of the place. We studied the architectural floor plan of the place and understood the inner loop (the passenger journey simulation) and the outer circle, which is the project phases premises.

## **The Expected Product:**

In this section, our team described the goal of our client (flying lab team), which is designing and improving the current flying lab factory booking process and experience. Our aim is also to improve the physical environment experience in the flying lab factory place itself. These goals have been specified according to the held meetings and visits.

## **Interviews**

### **Target Group**

Our team conducted the research to determine the project's context of use. The aim was to interview potential target groups to determine the needs and requirements of the users of the project.

Our project focuses on two groups of users: internal users, which are Lufthansa employees in different departments, and external users, which are customers who can book premises from outside the Lufthansa group.

Our team used interviews as the primary method for collecting data from target user groups. The interview questions are designed for each user group to ensure that we capture the specific needs and pain points of each group.

Overall, the research conducted by our team has provided valuable insights into the context of project use. The results will help us determine user needs and requirements later in the process. We recommend further research to validate our findings and ensure that the project meets the needs of all user groups.

Upon visiting the flying lab factory, every user group had specific objectives to fulfill and faced distinct challenges. Nevertheless, following our preliminary investigation and initial interviews, our team successfully compiled the essential information and organized it into a table. This allowed us to observe the interrelatedness of user pain points between the two groups.

### **Interview Flow**

To enhance the booking experience at the Flying Lab Factory, we conducted a series of online interviews with users. These interviews provided us with detailed feedback and comments on the booking process, including insights into participants' past experiences. Through this process, we were able to identify various pain points to address and improve.

## **Interviews findings and conclusion**

Based on the conducted interviews, we identified the following three points:

- 1- Clear and transparent information: Users expressed the need for clear and transparent information about the facilities, services, and pricing offered by the Flying Lab Factory. They highlighted the importance of having a clear understanding of what is included in each package and what additional services are available.
- 2- Flexible and customizable packages: Users emphasized the need for flexibility and customization in package offerings. They expressed a desire for packages that can be tailored to meet their specific needs, including the ability to select individual services and amenities.
- 3- Personalized support: Users highlighted the importance of personalized support throughout the booking process and during their stay at the Flying Lab Factory. They expressed a desire for dedicated support personnel who can provide assistance with various aspects of their stay, including logistics, technical support, and event planning.

## **User needs and requirements**

User needs and user requirements are critical components in the design and development process, as they help ensure that the final product meets the needs and expectations of the end-users. By focusing on the needs and requirements of the end-users, we can create user-centric design that prioritizes user experience and usability.

### **User needs**

During our user interviews, we were able to gain valuable insights into the needs and expectations of potential clients for the Flying Lab Factory. One of the most prominent needs expressed by users was for an easy and user-friendly booking system that would allow them to easily check availability and select rooms that are convenient for their project with different package rates. This booking system should be intuitive and accessible to non-technical users, so that clients can easily navigate and book the spaces they need without requiring assistance from staff.

In addition to the booking system, users also expressed concerns about ensuring that the necessary equipment and resources were available on site at the Flying Lab Factory. In order to address this concern, it will be important to create a system for clients to easily check what equipment is available and reserve it ahead of time. This will not only increase the convenience for clients, but also help to ensure that the necessary resources are available when needed, thus enhancing the overall experience and satisfaction of clients using the Flying Lab Factory.

Another key concern raised by users was transportation. Many users expressed a desire for an easy and quick way to arrive at the Flying Lab Factory's premises in order to avoid long walking distances. It will be important to explore options for transportation, such as providing shuttle

services or partnering with local transportation providers to make it easier for clients to access the premises. By addressing this concern, we can further enhance the overall experience for clients and make it more convenient for them to use the Flying Lab Factory for their projects. Overall, these insights gained from user interviews will be crucial in guiding the design process for the Flying Lab Factory. By taking into account the needs and concerns of potential clients, we can create a space that is not only visually appealing and functional, but also user-friendly and convenient. This will ultimately lead to increased satisfaction among clients and greater success for the Flying Lab Factory as a whole.

## User requirements

User requirements are a description based on the needs and expectations of the users of a product or service. User requirements are typically gathered during the requirements gathering phase of product design. They describe what the user wants the product to do, what features and functionality are required, and how the product should behave in different situations. User requirements can be documented in various formats, such as user stories, use cases, or functional requirements, and serve as the basis for designing and developing a product that meets the needs of its users. It is essential to have a clear understanding of user requirements to ensure that the product meets the expectations of its target audience and delivers the desired user experience.

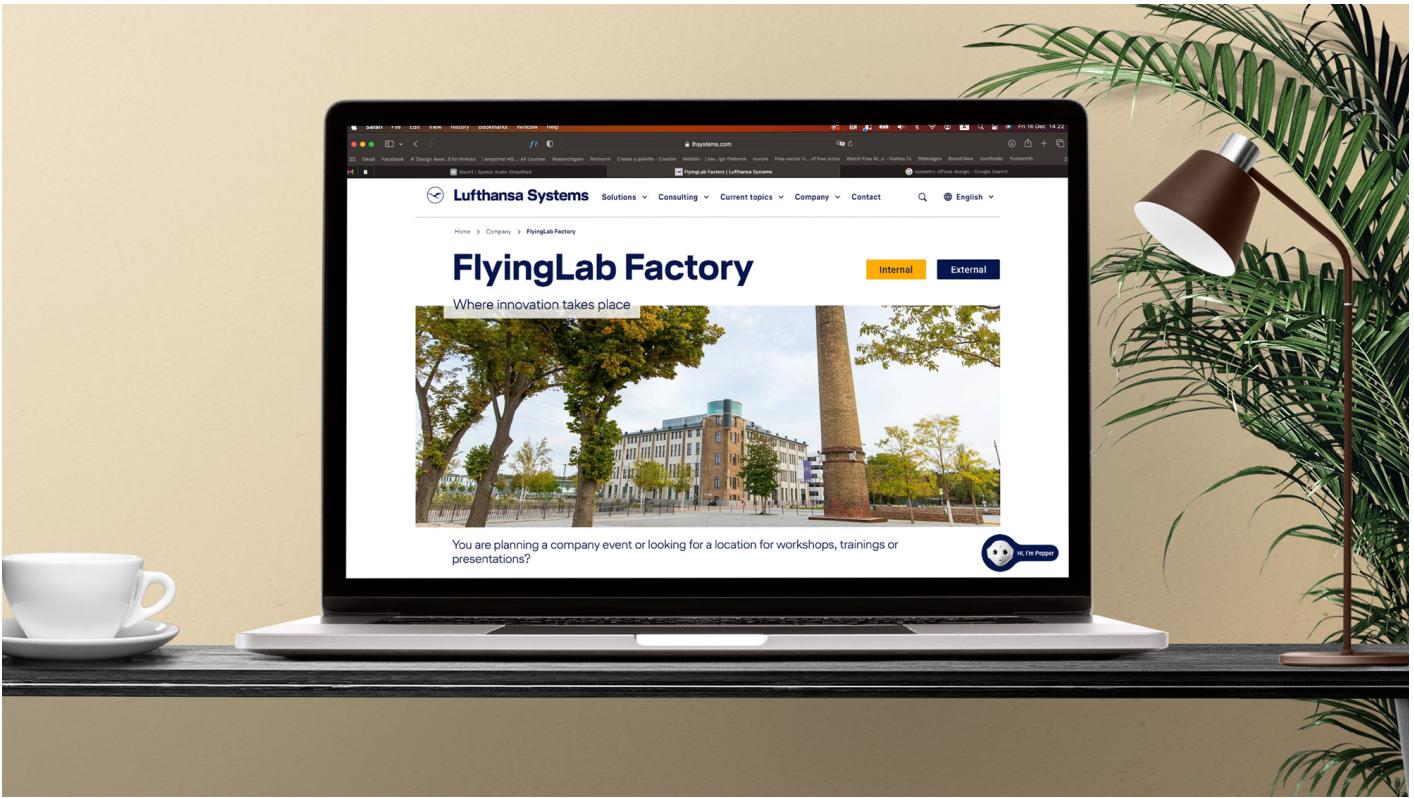
user requirements are specific features or functionalities that a product or service must have in order to meet the needs of the user. Requirements are usually more concrete than needs, and can be documented and measured more precisely.

The system shows services, spaces, rates and offers a clear experience by which the customer can easily manage and book services. The primary requirement of the system is to provide a clear and user-friendly interface for customers to manage and book services. The customer should be able to easily navigate the system to select the desired service and book it.

In addition, the system includes features that allow the user to specify the equipment and technologies needed for their usage. Customers may have specific equipment and technology requirements for their services. Therefore, the system should include features that allow the customer to specify their requirements. This will ensure that the Flying Lab factory can provide the necessary equipment and technology, making the service more efficient and effective for the customer.

The system shall suggest a mobility service to the flying lab factory for customers who are located far from the flying factory. Some customers may be located far from the flying lab factory and require mobility services to reach the facility. Therefore, the system should suggest a mobility service to the flying lab factory for such customers. This will enhance the customer experience and enable the flying lab factory to expand its customer base.

In conclusion, the system should provide a user-friendly interface, include features to specify equipment and technology requirements, and suggest mobility services for distant customers. These user requirements will enable the Flying Lab factory to provide efficient and effective services, enhancing the customer experience and expanding the customer base.



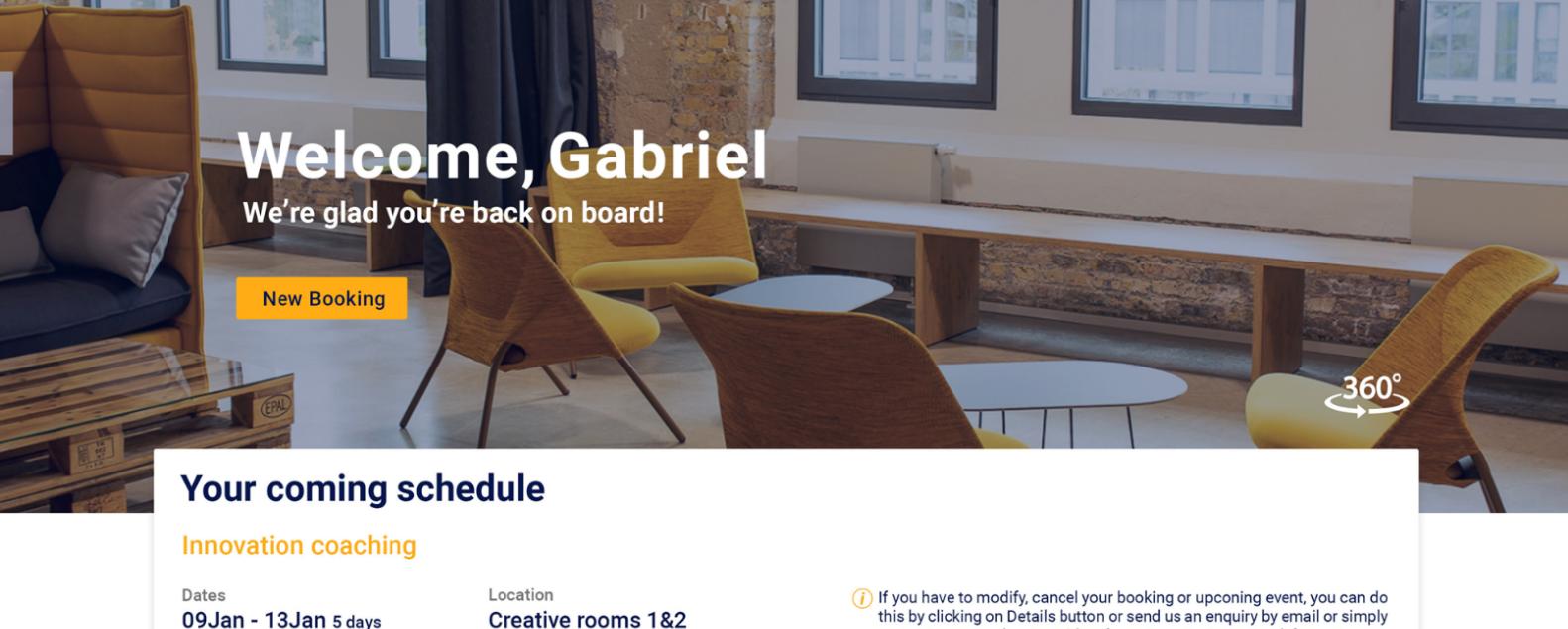
## Design Solution

The concept for the FlyingLab digital solution was developed after conducting interviews and identifying user needs and requirements. A booking process was implemented in the already-existing landing page of the FlyingLab factory. Additional features were added to push customers to use different services. Furthermore, suggestions for the premises were offered to enhance the aviation theme on the site.

### 1. Integration

An early design decision was made to implement the solution within the existing web page of the FlyingLab factory. That way, users can stay in one place whether they are learning about the FlyingLab factory or even when they want to take further actions and book a service. Users are mainly expected to be Lufthansa internal users with the consideration of external users. Accordingly, two buttons were added to help define the process each group will take while booking.

Users are required to create a profile to book rooms and services. Once the user creates a profile they will land on a visually appealing and easy to navigate Dashboard. Firstly, The dashboard prioritizes the most important information, displaying it prominently and allowing the user to drill down for more detail as needed. It provides clear information to the user, such as coming schedule. Secondly, the dashboard is responsive to user actions, allowing them to view details about the booking or even modify or cancel booking. Finally, Users will also be exposed to the FlyingLab services through subtle banners that have description of workshops they might be interested in. In addition, a 3D floor plan is provided to help visualise the different spaces and to give a sense of scale to the place. Special events and workshops will be visible on the dashboard as well to increase chances of engagement.



# Welcome, Gabriel

We're glad you're back on board!

[New Booking](#)


## Your coming schedule

### Innovation coaching

Dates  
09Jan - 13Jan 5 days

Location  
**Creative rooms 1&2**

 If you have to modify, cancel your booking or upcoming event, you can do this by clicking on Details button or send us an enquiry by email or simply contact us Monday to Friday from 9am to 12pm and from 1pm to 4:30pm.

Coach  
**Name Surname**

Duration  
**6h coaching + 1h30 lunch time**

Number of people  
**14 people**

Admin  
**Leader Name**

[Details](#)

## Your previous bookings



**Team management**  
03 Oct - 07 Oct, 12 people



**Agile coaching**  
03 Oct - 07 Oct, 12 people

## The FlyingLab Factory

### Innovation

Ideation & Prototyping

### Agile

Agile development & MVP Project

### Events

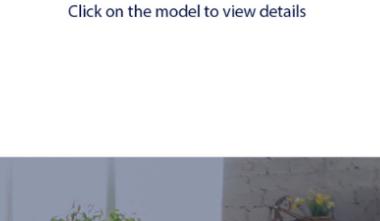
Kickoffs, Conferences, Streaming

We bring together unique spaces and professional support.  
To make the most out of these spaces and your ideas.

Circular concept with inner and outer circle on 1000 square meters with spaces of different size. Inner circle: Representing the whole Passenger journey.

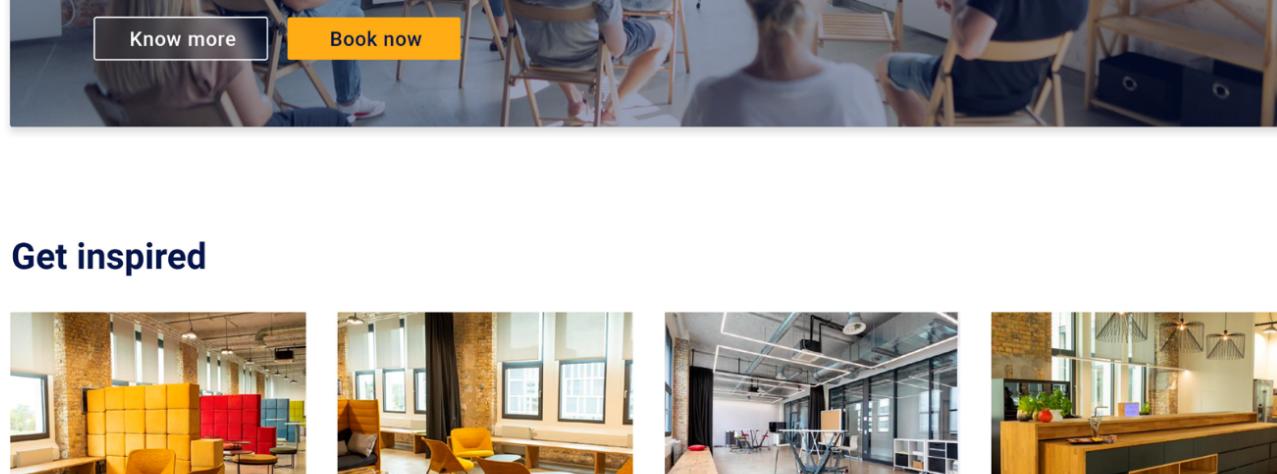
Outer circle: Representing the whole Innovation journey from first idea to MVP in several steps.

All steps can be supported tailored to the users need by our experienced team of Innovation coaches, Agile coaches and Event consultants

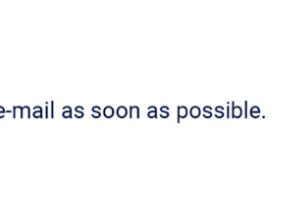
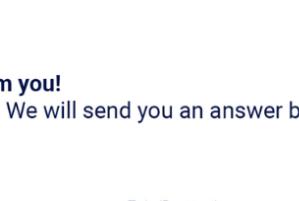
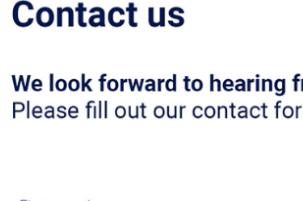


Click on the model to view details

## What's new?



## Get inspired



## Contact us

We look forward to hearing from you!

Please fill out our contact form. We will send you an answer by e-mail as soon as possible.

First name\*

Title/Position\*

Last name\*

Country\*

Company\*

Email\*

Your Request\*

Enter the characters you see  
New | Audio

Send

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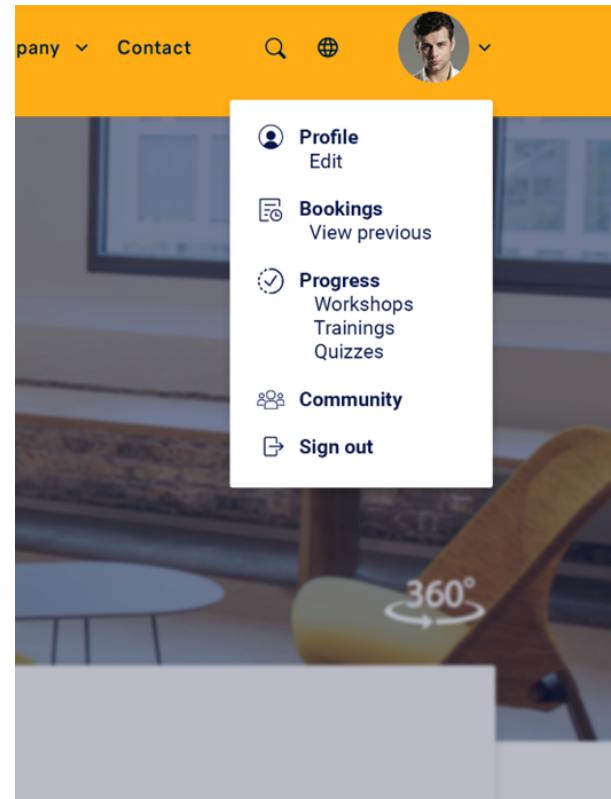
 Lufthansa Systems

## 2. Booking

The Booking process include several key features that make the booking process easy, efficient, and enjoyable.

We made sure that it is user-friendly, easy to navigate, intuitive and provide clear instructions to the user. It is also straightforward and easy to understand. Fields marked clearly and labeled appropriately ,with no confusing language.

First, users choose the purpose of booking to help pick the appropriate spaces and necessary tools and equipment, then they select the date and number of people involved. Under "select date" section, unavailable dates will also be marked. Once a booking is made, users can view bookings and track progress in their accounts.



New booking

Whether you're a team of one or an entire crew, we have flexible options for all your needs.

Select dates

Number of people

Proceed

Coaching  
Innovation  
Agile  
Event consultation  
Workshops  
Events  
Kitchen

Creative rooms  
The rooms are designed for maximum modularity and flexibility

Project rooms  
The rooms are designed for maximum modularity and flexibility

Hi, I'm Pepper

### 3. Packages Selection

To enhance the booking experience even more and to give it a flying-like atmosphere, users can choose from four packages that are tailored for different needs. Packages are worded to imitate Travel classes which refer to different levels of service and spaces provided. These classes vary in terms of price, tools and equipment, and amenities. For example, the economy package would be enough if customers are seeking basic space with fundamental equipment. As requirements grow, other packages are available to cover these needs.

In order to encourage customers to use event catering, services such as access to kitchen and food provision are offered on first class and first flex. Along the booking process, a small icon of the bot Pepper will be present to assist with any questions or challenges through booking.

To give a sense of how it feels like to be in the Flying Lab factory, we included a section that enables users to browse different facilities of the Flying Lab Factory. Each space is represented with a 3D section illustration to demonstrate the space visually, a small description and a number of how many peoples every space can accommodate.

We also took into consideration the nature of the coaching - innovation training and embedded an additional form so users can notify the Flying Lab factory staff of any prior equipment or information required for the session.

Overall, We focused on various factors while designing the packages including mainly the targeted groups ,and services offered by the Flying Lab factory.

## Your satisfaction is our top priority. Choose your package or select spaces separately.

Our experts are available for advice. You can leave a message with your questions and requirements and they will get back to you within 24 hours.

	<b>ECONOMY</b> Starting from <b>€500/day</b>	<b>BUSINESS</b> Starting from <b>€900/day</b>	<b>FIRST CLASS</b> Starting from <b>€1600/day</b>	<b>FIRST FLEX</b> Starting from <b>€2000/day</b>
Redeem points		✓	✓	✓
Room equipment	✓	✓	✓	✓
Design the space	✓	✓	✓	✓
Access to kitchen	✓	✓	✓	✓
All day access to kitchen		✓	✓	✓
Conference room		✓	✓	✓
Choose extra room		✓		
User journey area	✓	✓	✓	✓
Customized space design			✓	✓
Entire floor access		✓	✓	✓
Host attendant				✓
Catering			✓	✓
Discount on next booking			✓	✓



## Browse spaces



### Event areas

The rooms are designed for maximum modularity and flexibility

1-169



### Creative rooms

The rooms are designed for maximum modularity and flexibility

1-20



### Project rooms

The rooms are designed for maximum modularity and flexibility

8-20



### Kitchen

The rooms are designed for maximum modularity and flexibility

1-200

Once the user filled in all fields, they'll land on a "you're almost done" web page confirming the form per-entered details. The message assures the user that the booking process is running successfully using a friendly and welcoming language. At this stage, users can still go back and modify fields or go further to check out.

Users have also the options of requesting a shuttle or asking for special equipment that their session might demand. The shuttle concept is taken from airport operation and it picks up a group of customers from a specific gathering point to the Flying Lab factory. Users can also inform the Flying Lab staff of any special supplies or appliances needed for their meeting with an extra charge.

**You're almost done!**

Your selection

**First class**

Dates **13Feb- 16Feb 4 days**

Admin **Leader Name**

Booking **Workshop**

Location **Flying Lab Factory**

Number of people **22 people**

Do you need a shuttle?  Yes  No

Do you need special type of equipments?  Yes  No

If yes, please write the type of equipments

External equipments that need to be provided by the Flying Lab Factory will be charged separately.

**Check out**

Hi, I'm Pepper

## 4. App notifications

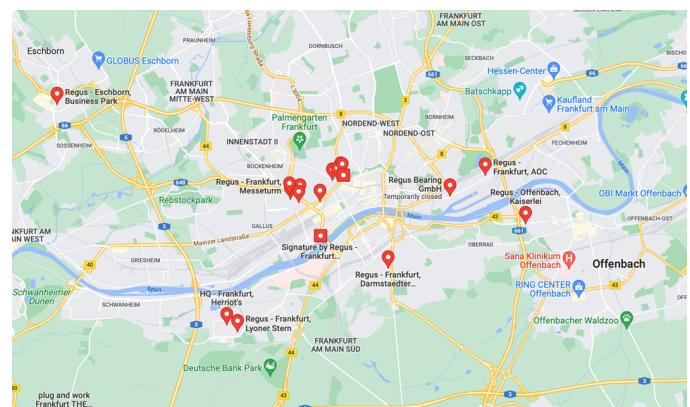
An app will be developed to complement the website in order to follow up on the schedule and benefit from several features. The app serves the users in a number of ways, for example:

1. Lunch time to consider last minute Lufthansa catering services
2. Break start and end
3. Orientation path to find the rented spaces etc.



## 5. The Shuttle

Considering the number of multiple competitor spaces in the region - even if not related to aviation, we thought about a special way to separate the Flying Lab factory from its competitors. Offering customers a shuttle that spares them the hassle of arranging their trips to the Flying Lab factory individually, and brings them a step forward towards focusing on business goals .



A map shows the different competitors in the region

## 6. Signage

The on-premises signage system eases visitors navigation through spaces and it simulates the wayfinding experience at the airport. There are two types of wayfinding signs: directional and informational. Directional signage helps people get to where they're going. Informational signage marks a particular area and gives people broad information they need while navigating.



Informational Signage

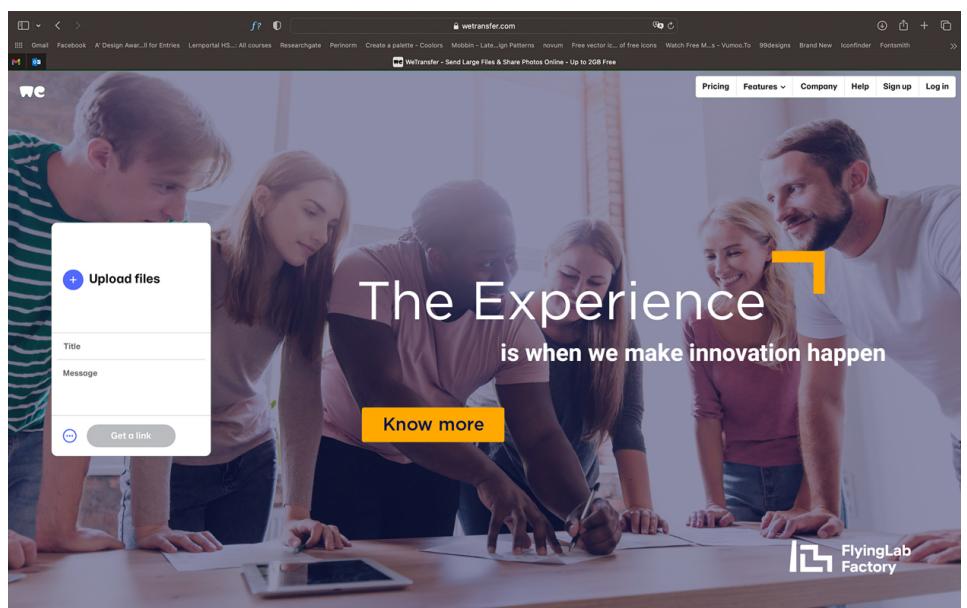


Directional Signage

## 7. Advertisement

We understand that advertising plays a crucial role in the success of any project and that's why we went ahead and thought of a few key marketing solutions tailored for the Flying Lab Factory that will help to create awareness and generate interest among the target audience.. Below are some suggestions :

1. We suggest to invite students by sending emails to aviation schools when there are available seats for any type of coaching.
2. Creating a community space on the website will allow colleagues to view others progress and interest.
3. RATING – SHARING – EMAILERS



# **Usability Testing**

To make sure that our design meets the needs of Lufthansa Group, we conducted some usability tests with a group of users to identify any problems or issues with the website's design, layout, and functionality. Tests were held in the purpose of understanding how users interact with the design, what they like, what they find confusing, and what frustrates them. The results helped us make improvements to the design and functionality, making it more user-friendly and enjoyable to use.

## **Prototype**

We created a high-fidelity clickable prototype to allow users to experience the design by simulating the interaction flow of the booking process. The prototype performs as the real production environment enabling us to collect feedback about the design and how we might improve it in the future.

[https://www.figma.com/file/T9gBrCZROCYcssSHjxIHRp/FlyingLab-Factory?  
node-id=0%3A1&t=uPiWD0UGHtBjiFV5-0](https://www.figma.com/file/T9gBrCZROCYcssSHjxIHRp/FlyingLab-Factory?node-id=0%3A1&t=uPiWD0UGHtBjiFV5-0)

## **Testing**

We went for the unmoderated usability testing method since we wanted to collect data on how users interact with the prototype spontaneously and naturally. Participants were given a set of instructions and tasks to perform on the prototype and then left to complete the tasks on their own. They are then asked to write down their actions and feedback. Tasks were created to allow users to use the app in a realistic context. These tasks tested a set of predefined usability principles such as:

1. Navigation: Test whether users can navigate the design easily and intuitively. Can they find the features they are looking for? Can they move between screens easily?
2. User interface: Test whether the design has an appealing and intuitive user interface. Are the buttons and icons clear and understandable? Is the layout easy to navigate?
3. Functionality: Test whether the app works as intended. Does it serve the purpose that it was created for?

By testing these aspects, we can identify areas for improvement in the design and functionality, ultimately leading to a better user experience.

## Results

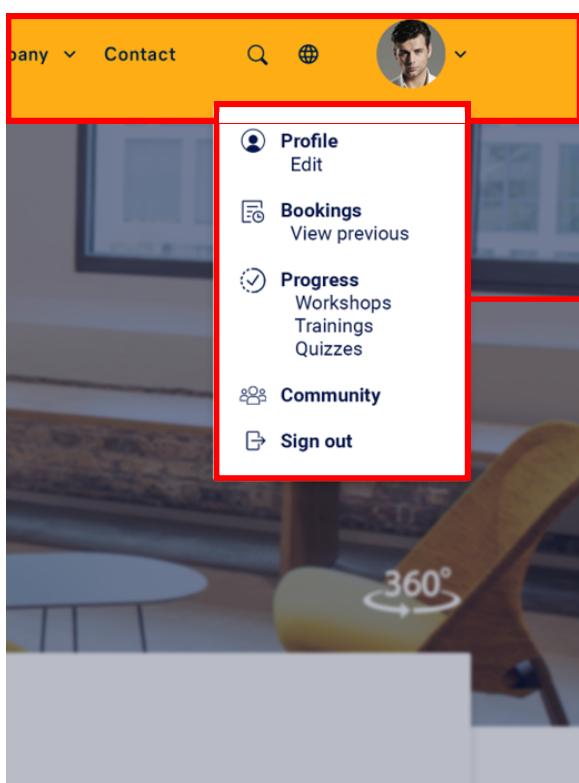
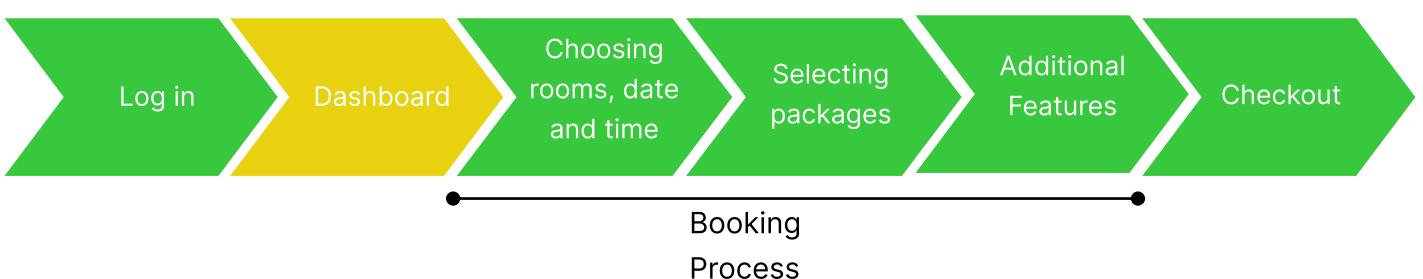
After the testing is completed, we analyzed the data to identify patterns and insights, looked for common pain points and areas where the design needs improvement and we projected the findings on a customer Journey map using colors with green indicating positive and yellow to negative.

Most of the feedback were positive including:

1. Intuitive and easy-to-use interface.
2. Real-Time Availability: The website displays real-time availability of the desired space.
3. The ability to view spaces, equipment and capacity of different spaces.
4. Interactive 3D model that displays spaces.
5. Community section
6. Consistency: The design is consistent throughout the booking experience.

Negative feedback can be summed up in:

1. Profile drop down menu looks busy
2. Using the yellow color feels like an error



The yellow color gives the impression that something is wrong

Profile drop down menu needs some polishing

# **Annex**

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## **Annex A. Competitive Audit**

Direct Competitors:

1. Emirates Innovation Lab - Offers a range of spaces for collaboration and experimentation, including a prototyping lab, a design studio, and a test bed for new technologies. The unique service offered by Emirates Innovation Lab is its partnership program, which allows startups and other innovators to collaborate with Emirates on new projects.
2. Delta Flight Products - Focuses on developing new products and services to improve the airline experience for passengers. It offers a range of spaces for research and development, including a prototyping lab and a materials testing lab. The unique service offered by Delta Flight Products is its partnership program, which allows startups and other innovators to collaborate with Delta on new projects.
3. Airbus Cabin Experience - Focuses on designing and developing innovative cabin interiors for commercial aircraft. It offers a range of spaces for research and development, including a virtual reality lab and a mockup center. The unique service offered by Airbus Cabin Experience is its collaboration program, which allows airlines and other industry partners to work with Airbus on new cabin designs and technologies.
4. Boeing HorizonX - Focuses on developing new technologies and business models for the aerospace industry. It offers a range of spaces for research and development, including a prototyping lab and a venture studio. The unique service offered by Boeing HorizonX is its investment program, which provides funding and support for startups and other innovators working on new aerospace technologies.

Indirect Competitors:

1. WeWork - Offers trendy, modern office designs and a focus on creating a sense of community and collaboration among its members. Provides a more general-purpose flexible office space solution that can be used by businesses of all types.
2. Regus and IWG - Offers a wide range of office types and sizes catering to both small and large businesses. Provides more traditional office environments and caters more to established businesses rather than startups.
3. Knotel - Offers custom-designed office spaces tailored to the specific needs of each client. Provides more flexible and customizable solutions for businesses of all types.
4. Convène - Specializes in meeting and event spaces, offering a wide range of spaces for businesses of all sizes. Provides more general-purpose meeting and event spaces for businesses.
5. Industrious - Offers a more upscale and professional office environment, with a focus on creating a productive and comfortable workspace for its members. Provides a more traditional office environment with a range of amenities and services.

Overall, Lufthansa's FlyingLab factory has direct competitors that offer similar services, such as collaboration spaces, prototyping labs, and development programs. However, Lufthansa's expertise and resources in the aviation industry may provide unique benefits that its competitors cannot offer.

Indirect competitors for the FlyingLab Factory are flexible office space providers, which offer different services and amenities compared to the FlyingLab factory. However, these providers could still be used by businesses of all types.

## **Annex B. Context of Use Report (ISO/IEC 25063:2014)**

### **Initial outline of the context of use**

The users of the FlyingLab Factory include corporate clients, entrepreneurs, and individuals interested in events, workshops, or innovation sessions. The document describes the tasks that users perform in the facility, such as booking the space, setting up equipment, conducting events, and cleaning up after them. It also explains the different environments and equipment that users can use and emphasizes the need for high-quality, easy-to-use facilities that meet user needs.

The document also describes the characteristics of FlyingLab Factory users, such as their level of technical expertise and their goals for using the facility. It highlights the importance of staff members who are knowledgeable, supportive, and flexible and can provide appropriate support and guidance for users. The document also notes that users may face constraints such as limited budgets or accessibility issues, and emphasizes the need for the facility to accommodate these constraints. By following the guidelines of ISO 25063, this context of use document helps to ensure that the FlyingLab Factory meets the needs and expectations of its users and provides a unique and innovative experience.

**Table 1-A high level description of the context of use**

<b>Context of use Element</b>	<b>Group 1: Internal clients</b>	<b>Group 2: External clients</b>
<b>System, product or service</b>	<p>System: The website provides a login system for internal clients, as well as a guest login. Each internal client has their own profile that includes job title, department, job starting date, number of courses taken, progress, booking history, completed courses/tasks, ratings, and reviews. The website allows anyone to book a room, either for a seminar or workshop, coaching sessions, or special events</p>	<p>System: The website provides a login system for a guest/ external client login. They have to create their profile and the website allows them to book a room, either for a seminar or workshop, coaching sessions, or special events</p>
<b>User group</b>	<ol style="list-style-type: none"> <li>1. Internal Clients: All staff, workers, and anyone who is working with the Lufthansa group, the group contains many firms divided into two main groups:             <ol style="list-style-type: none"> <li>a. Aviation airlines: Austrian, Lufthansa, Brussels, Swiss, Airdolomiti, Discover, Cityline and Edelweiss.</li> <li>b. Aviation Services: many firms in the sectors of Catering, Logistics, Technik und Service &amp; Finanzgesellschaften</li> </ol> </li>   <li>2. Experts who provide the service of coaching and consulting. FlyingLab Factory has in-house</li> </ol>	<ol style="list-style-type: none"> <li>1. External Clients: This can be any person or group that wants to book the Flying Factory area for presentations, events, meetings ...etc</li>   <li>2. Experts who provide the service of coaching and consulting.</li> </ol>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>User group</b>	<p>experts as well, currently they have 3 Agile coaches, 3 Innovation coaches, 2 Event consultants, 1 Team Lead</p>	
<b>Demographic data</b>	<ul style="list-style-type: none"> <li>• All staff, workers, and anyone who is working with the Lufthansa group</li> <li>• German and on-site employees working for Lufthansa group</li> </ul> <p>Characteristics</p> <ul style="list-style-type: none"> <li>• Zeal to learn more through coaching or workshops</li> <li>• Discuss and announce ideas to execute</li> <li>• Conduct and/or attend seminars</li> </ul> <p>Wishes and goals</p> <ul style="list-style-type: none"> <li>• Wishes to learn more about the spaces and resources at their disposal.</li> <li>• to book spaces or use services smoothly.</li> <li>• To book a space or use services and get acknowledgement for the booking without having to</li> </ul>	<p>Anyone, irrespective of whether they belong to the aviation field or not, is a potential client. They could be software engineers, managers, designers, from human resources..etc.</p> <p>Additionally, venture capital firms, investors, and entrepreneurs may also partner with FlyingLab Factory.</p> <p>Characteristics</p> <ul style="list-style-type: none"> <li>• Zeal to learn more through coaching or workshops</li> <li>• Discuss and announce ideas to execute</li> <li>• Conduct and/or attend seminars</li> </ul> <p>Wishes and goals </p> <ul style="list-style-type: none"> <li>• Wishes to learn more about the spaces and resources at their disposal.</li> <li>• to book spaces or use services</li> </ul>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>Demographic data</b>	<p>invest a lot of time in it</p> <ul style="list-style-type: none"> <li>To know the availability or unavailability of services or spaces for any requested date and time.</li> </ul>	<p>smoothly.</p> <ul style="list-style-type: none"> <li>To book a space or use services and get acknowledgement for the booking without having to invest a lot of time in it</li> <li>To know the availability or unavailability of services or spaces for any requested date and time.</li> </ul>
<b>Goal</b>	Wants a well-equipped space that could incubate their ideas, promote productivity and inspire new ideas.	Wants a well-equipped space that could incubate their ideas, promote productivity and inspire new ideas.
<b>Experiences or user groups</b>	<ul style="list-style-type: none"> <li>Experience of using the FlyingLab factory, but not necessarily knowing what the place offers.</li> <li>Experiences from innovation hubs, workshops and coaching sessions; All of them separately</li> </ul>	Experiences from innovation hubs, workshops and coaching sessions; All of them separately
<b>Assumed tasks to be supported and assumed task</b>	<ul style="list-style-type: none"> <li><b>Generate curiosity:</b> Know about FlyingLab Factory from a co-worker or an internal email, use the</li> </ul>	<ol style="list-style-type: none"> <li><b>Need for marketing:</b> FlyingLab factory doesn't have a marketing plan for external clients. They</li> </ol>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>Assumed tasks to be supported and assumed task competence</b>	<p>website or contact FlyingLab Factory team via phone or email to understand what it offers.</p> <ul style="list-style-type: none"> <li>● <b>Map:</b> How effectively an internal client can make use of what's on offer to achieve their goals. It may be a plan to work on an idea or learn something new or share something important with seminars. It could also be used by a team to organize team building activities.</li> <li>● <b>Booking process:</b> The ease of booking process can attract or repel clients based on their needs and expectations. Currently, this seems to be a pain-point as the process of booking is done manually through calls and emails. Knowing the availability of spaces or services is unknown till the response from the team. Acknowledgement of the booking process has a long turn-around time.</li> <li>● <b>On-site visit:</b> Some clients have found navigating to the FlyingLab Factory to be challenging, especially when parking is concerned.</li> <li>● <b>The experience:</b> The reception is where the users get acquainted with FlyingLab Factory employees, where they are informed about the space they are designated to and the <u>equipments</u> they can have access to. They are given instructions to set up</li> </ul>	<p>therefore need one.</p> <ol style="list-style-type: none"> <li>a. <b>Advertise experience:</b> FlyingLab Factory is built with a deep understanding of what an innovation hub needs, especially for aviation businesses. This needs to be shown in order to differentiate themselves from other innovation hubs or coworking spaces.</li> <li>2. <b>Map:</b> How effectively an external client can make use of what's on offer to achieve their goals. It may be a plan to work on an idea or learn something new or share something important with seminars. It could also be used by a team to organize team building activities.</li> <li>3. <b>Booking process:</b> The ease of booking process can attract or repel clients based on their needs and expectations. Currently, this seems to be a pain-point as the process of booking is done manually through calls and emails. Knowing the availability of spaces or services is unknown till the response from the team. Acknowledgement of the booking process has a long turn-around time.</li> <li>4. <b>On-site visit:</b> Some clients have found navigating to the FlyingLab Factory to be</li> </ol>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>Assumed tasks to be supported and assumed task competence</b>	<p>those equipment as and when necessary.</p> <ul style="list-style-type: none"> <li>● <b>Decision to revisit:</b> At the end of the day, the client can decide how the experience was and whether it was useful for their intended application.</li> <li>● <b>Marketing:</b> FlyingLab Factory primarily depends on word-of-mouth marketing. The experience of clients will directly impact it.</li> </ul>	<p>challenging, especially when parking is concerned.</p> <p>5. <b>The experience:</b> The reception is where the users get acquainted with FlyingLab Factory employees, where they are informed about the space they are designated to and the equipment they can have access to. They are given instructions to set up those equipment as and when necessary.</p> <p>6. <b>Decision to revisit:</b> At the end of the day, the client can decide how the experience was and whether it was useful for their intended application.</p>
<b>Assumed organizational/social environment</b>	<p>Organizational environment:</p> <ul style="list-style-type: none"> <li>● Dynamic and adaptable culture</li> <li>● Highly innovative and fast-paced</li> <li>● Emphasis on creativity and knowledge sharing</li> <li>● Rapid idea generation, testing, and implementation</li> <li>● Flexible and open physical space to promote interaction and co-creation</li> </ul> <p>Social environment:</p> <ul style="list-style-type: none"> <li>● Diverse and inclusive community</li> <li>● Highly connected network of individuals from different backgrounds, cultures, and industries</li> <li>● Strong emphasis on the</li> </ul>	<p>Organizational environment:</p> <ul style="list-style-type: none"> <li>● Dynamic and adaptable culture</li> <li>● Highly innovative and fast-paced</li> <li>● Emphasis on creativity and knowledge sharing</li> <li>● Rapid idea generation, testing, and implementation</li> <li>● Flexible and open physical space to promote interaction and co-creation</li> </ul> <p>Social environment:</p> <ul style="list-style-type: none"> <li>● Diverse and inclusive community</li> <li>● Highly connected network of individuals from different backgrounds, cultures, and industries</li> <li>● Strong emphasis on the</li> </ul>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>Assumed organizational/social environment</b>	<p>exchange of ideas and the creation of networks</p> <ul style="list-style-type: none"> <li>● Fosters a sense of community among members</li> <li>● Promotes collaboration and mutual support</li> </ul>	<p>exchange of ideas and the creation of networks</p> <ul style="list-style-type: none"> <li>● Fosters a sense of community among members</li> <li>● Promotes collaboration and mutual support</li> </ul>
<b>Assumed physical environment</b>	<ul style="list-style-type: none"> <li>● Elevator to accommodate individuals with disabilities</li> <li>● Open and flexible workspace with plenty of natural light, comfortable and movable furniture</li> <li>● Various types of workspaces, including the curtain room, creative rooms, small project rooms and big project rooms.</li> <li>● High-speed internet access and aviation specific technological tools and a model aircraft interior.</li> <li>● Space for events and workshops, including a stage and seating area</li> <li>● Kitchen area for food and beverage preparation</li> <li>● Video conferencing/ live-streaming studio</li> </ul>	<ul style="list-style-type: none"> <li>● Elevator to accommodate individuals with disabilities</li> <li>● Open and flexible workspace with plenty of natural light, comfortable and movable furniture</li> <li>● Various types of workspaces, including the curtain room, creative rooms, small project rooms and big project rooms.</li> <li>● High-speed internet access and aviation specific technological tools and a model aircraft interior.</li> <li>● Space for events and workshops, including a stage and seating area</li> <li>● Kitchen area for food and beverage preparation</li> <li>● Video conferencing/ live-streaming studio</li> </ul>
<b>Assumed equipment used for task completion</b>	<ul style="list-style-type: none"> <li>● Smartphone / laptop to research about the place and make a booking.</li> <li>● <b>Navigation:</b> Includes travel, parking and visiting the 3rd floor</li> <li>● Specific tools for a particular project like Smart devices,</li> </ul>	<ul style="list-style-type: none"> <li>● Smartphone / laptop to research about the place and make a booking.</li> <li>● <b>Navigation:</b> Includes travel, parking and visiting the 3rd floor</li> <li>● Specific tools for a particular project like Smart devices,</li> </ul>

Context of use Element	Group 1: Internal clients	Group 2: External clients
<b>Assumed equipment used for task completion</b>	<p>specific softwares, communication and collaboration tools, Augmented Reality (AR) and Virtual Reality (VR) headsets, testing equipment ..etc.</p> <ul style="list-style-type: none"> <li>• Aircraft cabin mockups</li> </ul>	<p>specific softwares, communication and collaboration tools, Augmented Reality (AR) and Virtual Reality (VR) headsets, testing equipment ..etc.</p> <ul style="list-style-type: none"> <li>• Aircraft cabin mockups</li> </ul>

### Annex C. Interview materials

The following were the questions chosen for the user interview with Nelson Mejia.

- Would you please tell us about your role in the company?
- How useful is FlyingLab Factory to you?
- Can you tell us about your team? Ignore the next question if it's been answered here.
- What is your team size? (1-5) (5-20) (20-100)
- How often do you use or intend to use FlyingLab Factory?
- What tasks do you frequently do while using the FlyingLab Factory?
- Could you tell us about the most memorable experience you had using the FlyingLab Factory?
- What are some spaces or services you are interested in? (Type of rooms/ technology/ support/ coaching)
- Do you think your team collaborated well?
- How does your team manage traveling to the FlyingLab Factory
- Did you ever make use of the catering service offered?

If yes: How convenient was it? ( I feel they would appreciate pushing catering service as it was an example in what needs to be done)

The following were the questions chosen for the expert interview with Jörg Leibe.

### TEAM <H> 15 min

- I believe you expect a tangible outcome from this collaboration, could you please elaborate on your expectations?
- Design sprint sessions being one of the most popular services you offer, do you think you have adequate coaches/mentors to meet the demand?
- How often do you re-strategize? Opinion
- How often do you think you would have used the FlyingLab factory if it existed in 2003?
- Do you think the customers would like their workspaces more than the FlyingLab factory if they replicate your setup?
- As a successful team-builder, could you go through a strategic call that improved the efficiency in the team?
- Do you feel there is a room for improvement in how the teams function?

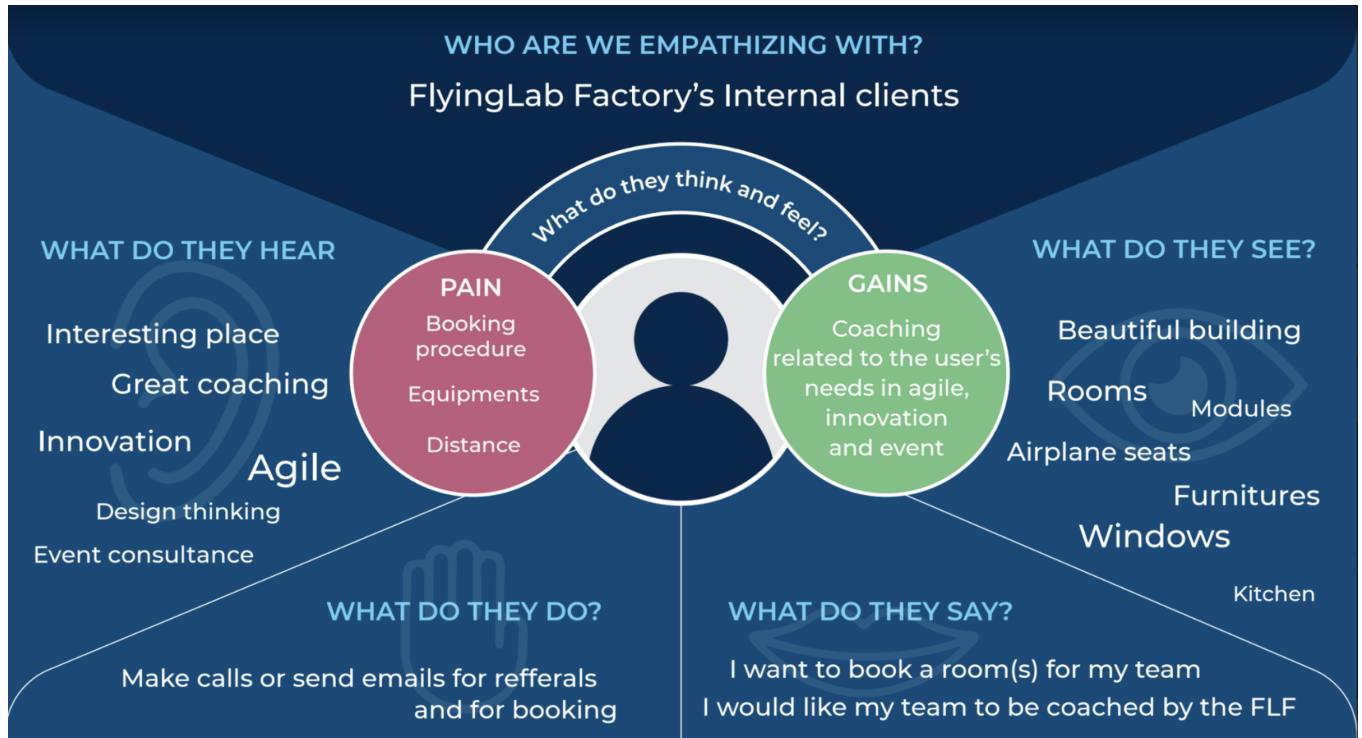
11:45

### Additional Questions both Teams 8 min

#### TEAM H 4 min

What do you feel about FlyingLab Factory as a business model?

### Annex D. Empathy Maps



## Annex E. User Persona



## Annex F. Problem Statements

- How might we create a personalized and inspiring user experience on FlyingLab Factory's website that encourages exploration of new ways of working and unleashing creative potential?
- How might we design a virtual tour of the FlyingLab Factory's Innovation and Customer Journey that not only showcases best practices, but also drives bookings of various services and coaching sessions?
- How might we provide an efficient building navigation system for the FlyingLab Factory that guides clients to their destination in a manner similar to an airport's international icons and directions?
- How might we design a booking system for the FlyingLab Factory that enables users to easily specify required equipment and technologies, and suggest mobility services for customers located far from the facility?
- The FlyingLab Factory wants to increase revenue by targeting different types of customers with different needs, but their current website only offers a standard booking option. How can they create multiple packages that offer different levels of service and equipment, and make it easy for customers to understand the differences between them and choose the one that suits their needs?
- The FlyingLab Factory wants to make it easy for customers to book the right room and equipment for their coaching or workshop session, but they're finding that some customers are not understanding the options available. How can they redesign their booking process to make it more intuitive and user-friendly, and ensure that customers always book the right package for their needs?

## **Annex G : User Needs Report (ISO/IEC 25064)**

### **Introduction:**

We have prepared a User Needs report in accordance with the ISO/IEC 25064 standard, which outlines the challenges faced by internal clients who use or want to use FlyingLab Factory's services. To address these challenges, we propose a digital solution that enables clients to interact with FlyingLab Factory in an efficient and easy-to-understand manner. Our proposed solution is divided into three parts, each of which addresses a specific pain point.

The first part of our solution involves revamping FlyingLab Factory's website. Our proposed website will provide a holistic view of the available spaces and services through a 3D map of the facility. Clients will be offered four packages that will help them make informed decisions without having to manage minute details. Additionally, clients can request equipment they need, which will either be arranged by the team or the clients will be informed about their unavailability. This will help clients understand what to expect and enable them to book the services and spaces they require.

The second part of our solution includes a login system for both internal and guest clients. Each internal client will have their own profile that includes their job title, department, job start date, number of courses taken, progress, booking history, completed courses/tasks, ratings, and reviews. The website will allow anyone to book a room for various purposes such as seminars, workshops, coaching sessions, or special events. The vacant places in coaching sessions can be offered to aviation students at a discounted price.

Lastly, we discovered a potential risk of navigation mistakes. To mitigate this risk, FlyingLab Factory's building navigation will be designed to be similar to an airport's international icons and directions. Efficient signage will be installed to guide clients to their destination. The website will offer a shuttle service for clients who require it, and those with private transportation will be informed about parking slots and how to enter the building.

This report was prepared by Team H (Ali, Clément, Qussai, Rahul, Sameer) under the guidance of Professor Karsten Nebe at Rhein-Waal University of Applied Sciences for their coursework on User Experience Design, with FlyingLab Factory as the project study.

### **Executive summary:**

This User Needs Report defines the needs of a user group: Internal client interested in knowing and requesting FlyingLab Factory's spaces or services. To generate this report, the user group was identified and surveyed. User group could potentially have an internal client and an external client. Online Interviews and In-Person Meetings were the methods used to get insights into an internal client's needs. The following are the major needs that were identified during the research: Lack of information about FlyingLab Factory to make use of it in its full potential, unsure about equipment availability, navigation errors, time consuming booking process, long travel time and parking issues.

User Group	Needs
<b>User: Internal and external clients</b>	<ul style="list-style-type: none"> <li>• Information about FlyingLab Factory's spaces and services and how it could be tailored for their needs.</li> <li>• List of available equipment and ability to request for additional equipment.</li> <li>• Easier and reliable booking process.</li> <li>• A shuttle service to arrive at FlyingLab Factory with energy to work.</li> <li>• Simpler parking facility.</li> <li>• Clear signs and directions in and around FlyingLab Factory.</li> </ul>

#### **Initial indicators of the need for a system:**

Initial indicators of the need for a system based on the given context and scope of the product or system are as follows:

- Booking System: The need for an easy and accessible booking system that allows clients to check the availability of rooms and select the ones that are convenient for their project. The system should also offer different package rates and allow for quick and secure payment options.
- Equipment Availability: The need to ensure the availability of the right equipment at the FlyingLab Factory. Clients should be able to reserve equipment in advance to ensure availability, and the equipment list should be comprehensive and up-to-date.
- Transportation: The need for an easy and quick way to arrive at the FlyingLab Factory's premises, without having to walk long distances. This could include providing transportation services, such as shuttle buses or taxis, or providing detailed directions and maps for clients who are traveling on their own.
- Necessary Equipment on Request: The need for clients to be able to access any equipment or technology that is required for their workshops or presentations.

These indicators suggest the need for a system that provides a user-friendly, secure, and reliable booking system, an up-to-date equipment reservation system, and transportation options that are easy to understand and access. Additionally, the system should provide a collaborative environment that encourages creativity and allows clients to customize their spaces based on their needs. Finally, the system should enable clients to request and access any necessary equipment or technology to support their workshops or presentations.

## **Methods and procedures:**

The identified User Group was interviewed in order to gather information and analyze the user needs. Furthermore, we went on-site to the FlyingLab factory to have our own hands-on experience.

Information about FlyingLab Factory's spaces and services and how it could be tailored for their needs.

List of available equipment and ability to request for additional equipment.

Easier and reliable booking process.

A shuttle service to arrive at FlyingLab Factory with energy to work

Simpler parking facility.

## **Identified user needs:**

**Table 2-A high level description of the user needs report**

User Needs	
Information about FlyingLab Factory's spaces and services and how it could be tailored for their needs.	<ul style="list-style-type: none"><li>• The User we interviewed wasn't aware of a host of things FlyingLab Factory offered</li><li>• Users seem to be open to a system of packages as paying for individual services could seem like a huge task</li></ul>
List of available equipment and ability to request for additional equipment.	<ul style="list-style-type: none"><li>• Users felt there was a need to carry equipment they needed for the workshops they conducted.</li><li>• Users would feel comfortable knowing the list of equipment available in FlyingLab Factory with the ability to request equipment not available with them.</li><li>• Depending on the frequency of these specific requests, FlyingLab Factory could either procure equipment temporarily or permanently depending on business demands.</li></ul>
Easier and reliable booking process.	<ul style="list-style-type: none"><li>• The current process of booking is a time intensive procedure where a user has to either send an email requesting their services or call them.</li><li>• In case of email exchanges, confirmation of the booking takes a lot of time.</li></ul>
A shuttle service to arrive at FlyingLab Factory with energy to work	<ul style="list-style-type: none"><li>• Clients who don't reside near Raunheim would have to travel for a long time to arrive at the FlyingLab Factory.</li><li>• Providing a shuttle service could improve users' productivity in FlyingLab Factory and hence their experience.</li></ul>
Simpler parking facility.	<ul style="list-style-type: none"><li>• Uncertain parking availability, users had to walk ~10 mins from their car. This is not favorable to the users.</li></ul>

## **Identified problems:**

To improve the customer's experience, FLF can provide more comprehensive and proactive support and maintenance for the spaces and services offered. Additionally, FLF can introduce new and innovative technologies and tools to stay relevant and competitive in the industry. By focusing on the ongoing needs and pains of the customer during the maintenance phase, FLF can create a positive and supportive experience that encourages continued use and recommendation to others.

## **Annex H : User Requirements Report (ISO/IEC 25065)**

### **Introduction:**

Lufthansa FlyingLab Factory is an innovation hub that provides a platform for Lufthansa's internal clients to ideate, create and develop their projects from the initial idea to MVP. In this report, we will outline the user needs and requirements of Lufthansa's internal clients as gathered from our interviews with them. This report is in compliance with the ISO / IEC 25065 standard for software engineering and systems engineering documentation.

### **Identification of the interactive system:**

This report defines the requirements of different user groups eager to learn and make use of all the services offered by Lufthansa's FlyingLab Factory. Hence, an interactive system has been envisioned in order to provide a digital solution along with suggesting a few physical elements that aid in an overall better user experience.

### **Reference to the overall context of use:**

The user requirements document for the FlyingLab Factory outlines the tasks that users perform, such as booking space, setting up equipment, and conducting events, and emphasizes the need for high-quality, user-friendly facilities. It also describes user characteristics, including technical expertise and goals, and notes potential constraints such as budget or accessibility issues. The document highlights the importance of knowledgeable and supportive staff and aims to ensure that the facility meets user needs and expectations while providing a unique and innovative experience.

## User Requirements:

**Table 3-A high level description of User requirements**

<b>Goal</b>	<ul style="list-style-type: none"> <li>Provide users with information about FlyingLab Factory's spaces and services, and allow for customization based on their specific needs.</li> <li>Display a comprehensive list of available equipment, and enable users to request additional equipment as needed.</li> <li>Streamline the booking process to make it easier and more reliable for users.</li> <li>Offer a shuttle service for users to arrive at FlyingLab Factory with ease and energy to work.</li> <li>Simplify the parking facility to provide a hassle-free experience for users.</li> </ul>
<b>Task</b>	<ul style="list-style-type: none"> <li>Assist users by informing them about the spaces and service FlyingLab Factory offers through a redesigned website with interactive maps and navigation in and around FlyingLab Factory.</li> <li>Give users the ability to request for additional equipment that they desire</li> <li>Improve and automate the booking process through the redesigned webpage.</li> </ul>
<b>User Groups</b>	<ul style="list-style-type: none"> <li>Internal clients/External clients</li> </ul>
<b>Pre-Conditions</b>	<ul style="list-style-type: none"> <li>Lack of awareness</li> <li>Tedious Process</li> <li>Esoteric website</li> <li>Difficulty to rely on booking process</li> </ul>
<b>Sub-Goals / Sub-Tasks</b>	<ul style="list-style-type: none"> <li>Provide support for planning</li> <li>Provide details about the spaces and services</li> <li>Provide better navigation in and around FlyingLab Factory</li> </ul>
<b>Requirements</b>	<ul style="list-style-type: none"> <li>System features: Show services, spaces, rates, and offers; specify equipment and technologies needed; suggest mobility service for customers far from the FlyingLab factory.</li> <li>Usability requirements: User-friendly and intuitive interface; clear navigation and quick response time; accessible to users with disabilities.</li> </ul>

<b>Requirements</b>	<ul style="list-style-type: none"> <li>• Security requirements: Secure and protect user data; prevent unauthorized access, data breaches, and malware attacks; comply with data protection regulations.</li> <li>• Performance requirements: Reliable, responsive, and scalable; high uptime and fast response time; handle large number of users and data.</li> <li>• Compatibility requirements: Compatible with different devices and operating systems; accessible through desktop, mobile, and tablet devices; work with different web browsers.</li> </ul>
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## Annex I. User Evaluation Report (ISO/IEC 25066)

### Introduction

This is the ISO/IEC 25066 User Requirement Report for FlyingLab Factory. The evaluation was right after the creation of the Lo-Fi prototype. It was done using a moderated formative usability test, where users were supposed to perform 2 tasks. While performing these tasks users were asked to think aloud so that this data could be used for further evaluation. During the test either a notetaker was taking the notes or the session was recorded with the consent of users to get insights afterward.

### Evaluation Study:

**Scenario:** Imagine you are an internal client of Lufthansa, responsible to manage a team of software developers. You have been sitting on an idea that would improve the user experience of the customers at Lufthansa. Your co-worker told you about FlyingLab Factory and how it could help you realize your ideas with your team.

You have 22 members in your team and you wish to involve them in getting your idea to a most viable product. You are looking for coaching on innovation for your team before starting to work on the idea.

Use the website to know what FlyingLab Factory can offer your team and book innovation coaching for your team.

**Tasks:**

1. Login as an internal client to FlyingLab Factory's website and check out the map to find the spaces it offers. You are especially looking for the kitchen to conduct team-building activities.

Q: How was the layout of the website?

Q: How apt was the 3D map mapping to pictures of the room ? What are your thoughts on the interactivity of the map?

2. Book a coaching service for your team for 4 days from 13th february to 16th february.

2.1. Check 'Browse spaces'

2.2. Select Innovation-coaching

2.3. Select dates from the drop-down calendar

2.4. Select number of people in your team

Q: Were you able to find everything you needed? How difficult was the process?

**System Usability Scale**

Five responses range from "Strongly Disagree"(1) to "Strongly Agree"(5) for the following statements as shown in Table 4.

1. I find the website unnecessarily complex.
2. I think the website is easy to use.
3. I need the support of a technical person to be able to use this website.
4. I find the website easy to navigate.
5. There is inconsistency within the website.
6. I imagine that most people would learn to use this website quickly.
7. I feel confident using the website.
8. I need to learn a lot of things before I can start using this website.
9. The main user flow is clear.

**Table 4 : System Usability Scale Score for Lo-Fi Usability Test**

Statement	Participant K	Participant A	Participant F	Average
1	1	1	1	1
2	4	3	5	4
3	1	1	1	1
4	5	4	5	4.6
5	1	2	1	1.3
6	5	5	5	5
7	5	4	5	4.6
8	1	1	1	1
9	4	4	5	4.3

## Data to be collected:

1. Task completion rate;
2. User errors and frequency of occurrence;
3. Click path;
4. User-reported qualitative data ("think aloud" quotes and answers to the questions).

The following tables 5, 6 and 7 describes tasks performed by 3 participants individually.

**Table 5: Usability findings of Participant K**

Participant K	Click Path	Use errors	Think aloud quotes	Follow-up answers
<b>1. Login, Click on the map and interact with it</b>	<ul style="list-style-type: none"> <li>- Internal</li> <li>- 360</li> <li>- Map</li> <li>- Kitchen</li> </ul>	Yes	<p>It looks professional, well laid out</p> <p>I think 360 shows 360 degrees of the space, let me check if there is a map below</p> <p>3D map looks fancy, I like how it shows images of the rooms here</p>	Overall professional,, I liked the map layout
<b>2.1. Check 'Browse spaces'</b> <b>2.2. Select Innovation-coaching</b> <b>2.3. Select dates from the drop-down calendar</b> <b>2.4. Select number of people in your team</b>	<ul style="list-style-type: none"> <li>- New booking</li> <li>- Browse spaces</li> <li>- Coachin g/Events drop-do wn menu</li> <li>- Select dates</li> <li>- Number of people</li> <li>- Proceed</li> </ul>	No	<p>Straightforward , Fair enough, Would've been better if it actually worked</p>	Fairly easy, didn't need more context

**Table 6: Usability findings of Participant A**

Participant A	Click Path	Use errors	Think aloud quotes	Follow-up answers
<b>1. Login, Click on the map and interact with it</b>	<ul style="list-style-type: none"> <li>- Internal</li> <li>- Map</li> <li>- Kitchen</li> </ul>	No	<p>Not a fan of header color, looks like an error banner</p> <p>Map looks really good, even though it isn't performing as you might have expected</p>	Overall standard, typical of the websites, nothing new or shocking. Maybe that's what you were going for
<b>2.1. Check 'Browse spaces'</b> <b>2.2. Select Innovation-coaching</b> <b>2.3. Select dates from the drop-down calendar</b> <b>2.4. Select number of people in your team</b>	<ul style="list-style-type: none"> <li>- New booking</li> <li>- Browse spaces</li> <li>- Coachin g/Events drop-down menu</li> <li>- Select dates</li> <li>- Number of people</li> <li>- Proceed</li> </ul>	No	<p>Capability of providing Information seems abundant, more than enough</p> <p>Liked that you have an option of advising as well</p> <p>But most of them are not working</p>	Direct, Lots of information and well chunked

**Table 7: Usability findings of Participant F**

Participant F	Click Path	Use errors	Think aloud quotes	Follow-up answers
<b>1. Login, Click on the map and interact with it</b>	- Internal - Map - Kitchen	No	The website looks great for what its purpose is  3D map could be improved with more pictures and with more interaction possibilities	Neat.
<b>2.1. Check 'Browse spaces'</b> <b>2.2. Select Innovation-coaching</b> <b>2.3. Select dates from the drop-down calendar</b> <b>2.4. Select number of people in your team</b>	- New booking - Browse spaces - Coachin g/Events drop-do wn menu - Select dates - Number of people - Proceed	No	Decent, direct	Nothing to complain about, it's exactly how it should be.

### Positive usability findings

- Users really liked the 3D map and the idea of its interactivity, rather than how it functions in the prototype right now.
- Professional, safe, direct and easy to understand with a decent layout.

The following table has overall impressions of the users based on our findings from the usability tests

**Table 8: Overall impressions based on usability tests**

<b>Overall impression, final questions</b>	<ul style="list-style-type: none"> <li>• Re-evaluate color decisions.</li> <li>• There is an immediate need to convert the lo-fi prototype to hi-fi unlocking all the capabilities, that seems to be a barrier for our usability tests; And conduct usability tests with more participants, especially from Lufthansa's employees- internal clients.</li> <li>• There seems to be not many insights we could draw from the usability tests for now.</li> </ul>
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