

Leadership & Innovation

Weart Project



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# Project Report

# 2023

**The Bold Innovators**

x  
**weart**

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# Meet the Team: The Bold Innovators



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# 01. EXECUTIVE SUMMARY

In today's world, unforeseeable challenges are inevitable, and it is necessary for companies to adapt to overcome them. **Innovation** is one of the most important concerns of organizations as it enables growth, resiliency and creates competitive advantages.

E-Novia is a company whose value chain is geared towards innovation; this has given life to a range of highly innovative products. Particularly **Weart**, the focus of this report, offers the most innovative haptic technology in the market.

The aim of this initiative is to propose a new way of using Weart technology in other applications. A process of **innovation of meaning** was followed to craft a technological epiphany and to define a new meaning for an existing solution.

The start was with a **comprehensive understanding** of the product technology and use cases. Then, we performed an **analysis** of some trends and signals such as Multisensory Experiences, Virtual Reality Expansion and the awareness about environment and animal rights, which resulted in the decision to find a **new meaning** to the zoo.

After that, we investigated the **existing meaning and solution** of the zoo by highlighting some possible opportunities and threats and the reasons that make the zoo attractive to people. Then by introducing Weart technology, the resulting new meaning changed the zoo from being a place to conserve animals and putting them on display for people's entertainment, to a more immersive and interactive experience where they get to engage and interact with animals in unusual ways and many other exciting possibilities.

Consequently, we proposed our **new solution** MetAnimals and narrated how it was developed. Firstly, by identifying the possible final users and trying to empathize with them by creating **personas and journeys**. As a result, we designed the solution by choosing the appropriate modalities, equipment and elements of the experience. Also, we made several mock-ups to visualize the design such as an internal press release and magazine covers. Finally, the economic feasibility was assessed by listing the possible sources of revenue and costs incurred. The assessment presented a good return on investment and profitability.

Finally, the last part of the report discussed our team, the **Bold Innovators**, where models like Tuckman and Whole brain were used to describe how we managed and organized our team.

## 02. COMPREHENSIVE ANALYSIS





# Company Overview

Weart is an **Italian startup** founded at the end of 2018 by SIRSLab, a laboratory of the University of Siena specialized in robotics, in collaboration with E-Novia and the Italian Institute of Technology.

The aim was to develop cutting-edge tactile technology and a haptic interface for increasing **experiences related to virtual reality**.

The product can track space movement, generate forces up to five newtons in order to give the perception of contact with objects and mimic textures and temperatures in a range between 18° - 42°. It also has a great capacity to connect with virtual reality, thus making it possible to create a natural interaction with virtual objects and surfaces.

- Haptic Feedbacks
  - Forces
  - Vibrations
  - Thermal cues

## Attributes

Finger tracking

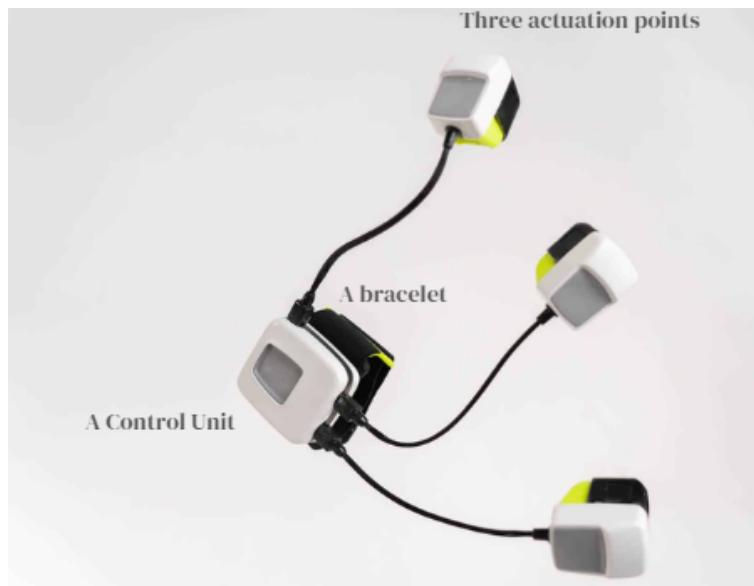
Hand's Back  
Mounting  
hand tracking

<200 g Weight

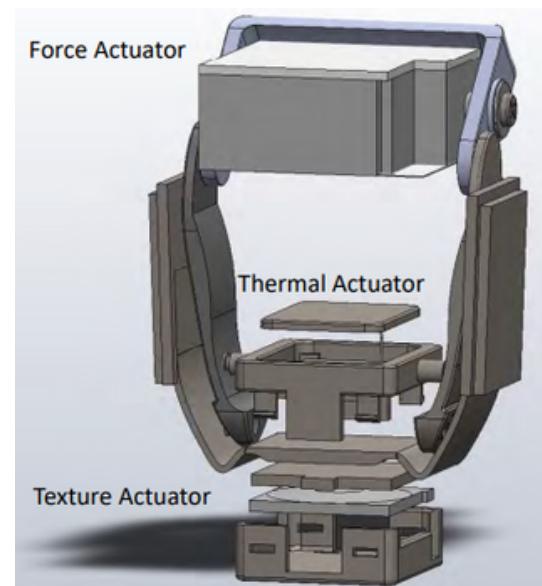
Intuitive Middleware:  
easier tasks  
management

# The Device

The product comes in the form of a wearable **touchDRIVER** that has three haptic cores, which mimic and transmit the sense of touch to the fingers when the people touch something in virtual reality. The device can only be useful if there is a tactile augmentation of digital experiences.



**TouchDriver**



**Haptic Core**

To achieve this aim, Weart provides a developer-friendly SDK in two different engines, Unity and Unreal, to align the experience with real life. It can easily augment virtual reality because it only requires the selection of the object and its properties in terms of **forces**, **temperature** and **material type**. It is also important to underline that Weart has a preinstalled library where it is possible to find different textures.

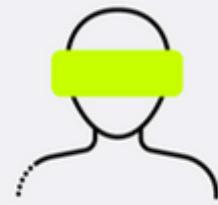
## Deploy in 3 steps



Get the Hardware  
with its SDK and  
Tactile Library to  
Easily Create your  
Materials



Integrate Tactile  
Sensations into your  
Experience



Provide the  
Experience to your  
Customer

# Current Usage

Nowadays Weart is used in many different fields such as training, marketing and entertainment.

Taking as example the training field, Weart is used in the industrial sector to increase learning curves and increase the care for details



It is also adopted in the **medical training** to increase the realism of the VR surgical training and make it possible to practice with complex operations through the interactions with virtual patients.

Additionally, it is also able to connect the customers deeply with the brand through the tactile touch that is linked with our emotions and perception of the product, so it is used to have unusual and incredible **marketing experiences**.



Moreover, nowadays there is an ever-increasing spread of **e-commerce** and **digital shopping** that is trying to make the interactions with virtual objects more realistic, which makes Weart the perfect choice.



Another field of application is in the **remote collaborative design** to have a higher level of realism before prototyping.



Finally, there is the field of **entertainment** in which Weart devices are able to increase emotional connection and engagement in gaming.

# Methodology

Developing an innovative project by following the **technology epiphany** is not an easy task and it creates a lot of questions that must be answered in order to find a new meaning for the existing technology. How should we start? Do we understand the technology? What are the existing use cases?

Once the main **features** and the basic attributes of the existing technology were understood, we individuated the drivers of change by asking ourselves two simple questions:

- If I have the opportunity to **touch** anything in the world, what would it be?
- What are currently the **weak signals** and the trends that can enable us to develop and exploit Weart technology in a new field?

Regarding the first question, we brainstormed our ideas.

The continuous exchange of views and concepts became a positive setting that boosted the team spirit and helped us develop collaborative thinking, the following ideas are the result of this process:

- The technology could be used with an educational purpose to create **interactive classes** that comprehend the feeling of touch in the learning methods adopted – later discarded due to the current high price of the technology (public schools do not have the finances to buy a batch of devices).
- Entering the **medical** sector to help people improve their mental health by providing them with PTSD therapy or reducing their anxiety levels caused by social distancing.
- The haptic core technology could be used in the **sex toys** industry to provide users with the feeling of human touch, it would enable Weart to be the first firm in the market with a next generation of product.
- Explore the entertainment industry and more specifically by creating multi-sensory experiences that increase the attractiveness of amusement **parks, museums or zoos**. The concept is to exploit the intrinsic innovativeness of the technology to attract people toward a new concept of experiences.



# Methodology

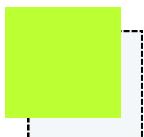
Understanding in which **fields** the sense of touch could be crucial in attracting customers' interest was only the first step; then **weak signals** and **current trends** had to be individuated and understood in order to enter an industry where we could truly make a change and do something that provides a new meaning to the technology and increase the value perceived by customers. Given the technological features and marketing materials of Weart, we have started to think about the possible undervalued signals of nowadays, which could be linked to the original thought of the company: being virtual. Starting from this statement, we did research about digitalization and the effects that it has on the human body, metaverse and how it can help with different therapies. After having analyzed all the ideas, we discussed together to find a solution that both exploited our technology and could be desirable for our customers.

In the end we decided to develop the **zoo idea**, due to multiple background researches and the general willingness of people to touch wild, exotic or extinct animals that are impossible to move close to in real life. We had to take into consideration also the price of the product, which seemed to be the bottleneck for other ideas, we needed industries where companies had a yearly turnover high enough to sustain an investment of multiple Weart devices. This solution also includes our original willingness to use the technology for educational purposes and gives the company a chance to take part in the fight against climate change, raising awareness of the human-nature connection.



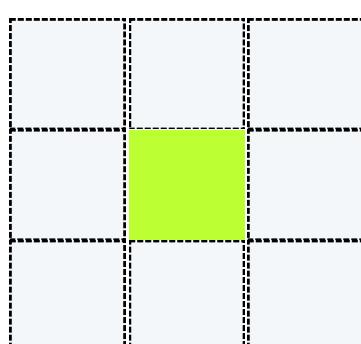
All things considered, this can be seen as an hermeneutic approach of the "**Reason Why**" people go to the zoo: the new vision originates from the interpretation of society and the weak signals coming from people while performing the activities, in which our key tool is the Weart technology itself.  
In the following chapters we will explain in detail our solution analysing different aspects.

1



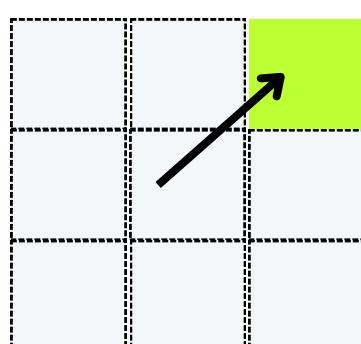
Understanding the  
technology

2



Identify the applications

3



Design the epiphany

# The Trends

## Multisensory Experiences

Over the last years, innovative companies drove customer engagement through the exploitation of the latest technologies that enable the creation of new experiences called “**Multisensory**”. These experiences that appeal to more senses tend to be effectively perceived and recalled since consumers act on the basis of the perceptions they evaluate and interpret, not always objective reality.

## Virtual Reality Expansion

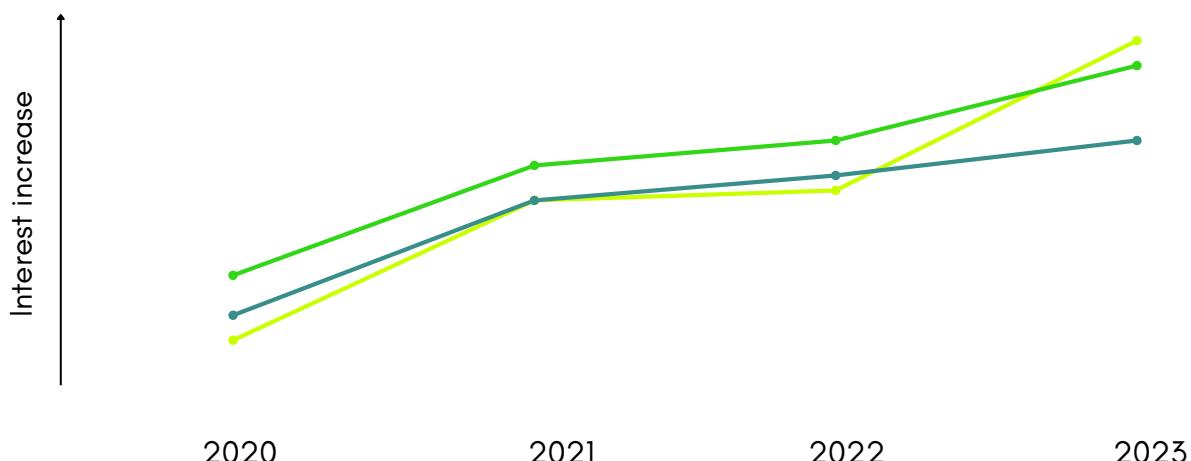
Even if **Virtual Reality** has been around for years now, it is one of the technologies with the highest projected potential for growth. This technology is the key to companies’ digital transformation plans and together with the latest 5G standard it will allow more devices and new experiences to be created. Moreover digital content-makers are embracing virtual production, which can enable them to shorten production times and bring real-time computer generated imagery and visual effects on the market at lower costs.

## Environmental and Animal Awareness

Rising **environmental concern** is a topic that unites people from all walks of life. The trend is visible in both advanced and upcoming economies, in all world regions and across the board in all age groups, among educational levels, genders and sociocultural values segments. Therefore companies must take into account this always-rising trend when designing their future activities, it is not a matter of customer segmentation anymore, but a “to-have” segment for each strategic business plan.

● Multisensory Experiences   ● Virtual Reality Expansion

● Environmental and animal awareness



# Existing Meaning & Existing Solution



Nearly two centuries after the first modern zoo opened in London's Regent's Park, the **very concept** of a place where families can visit and observe animals is being questioned like never before. All over the world zoos are struggling to balance the demand of entertainment, education and conservation; ethical concerns have risen among the public after different studies showed how many animal species are smarter and more conscious than previously understood. Zoos do not only provide visitors with the opportunity to learn about animals, but they also focus on **conservation efforts**, including breeding programs and research aimed at protecting endangered species and their habitats. Many facilities have put animal welfare at the center of their business strategies, providing larger and more naturalistic enclosures, reducing the number of animals on display, and focusing on conservation rather than amusement.

Nowadays zoos are seen as institutions that house a variety of different animals coming from different parts of the world and we can state that there are 2 main reasons **why people currently love** to visit them:

- They offer a **unique** opportunity to observe animals of various species up close. They are able to trigger curiosity and interest in people of all ages.
- They provide **entertainment** for all audiences. Zoos often hold shows and interactive activities to engage with users, so people love to visit zoos because it is a fun experience.

It is now clear how the present challenge for zoos is to find new forms of entertainment that go beyond the simple display of animals in fact, they have a strong emotional impact on people and this emotional connection can help in developing a sense of care for instance toward the conservation of animals and their habitats. The exploitation of the latest technologies can be the turning point to build digital experiences that are able to put the **customers' emotions** at the center providing close, non-harmful interaction with the animals.



# Zoo Analysis

The following part is a brief analysis of zoos, highlighting possible **opportunities** and **threats**.

## Opportunities

- The exploitation of technology can help to foster human-animal connections and sell more tickets while giving the animals more “room” to roam freely.
  - Virtual Reality technologies are more affordable than before, and they are capable of providing people with an up-close experience without having to disturb the peace of the animals.
  - People still enjoy a chance to see and get close to animals, up to 80 million people visited zoos in EU, 170 million in the US and it is estimated to be more than 700 million worldwide

## Threats

- Continuously increasing concerns among the population about animal rights.
- Ethical concerns regarding the life of animals are making it difficult to find a balance between the educational purpose and the entertaining role of these parks.
- Popular culture, documentaries and social medias are moving the public opinion against animals in captivity, for example the documentary Blackfish that showed the emotional damage wreaked upon orca whales at SeaWorld, forced the facility to shut down its shows.
- The public is always more aware that different animal species are feeling more than previously understood and that they may suffer from anxiety and depression when they are removed from nature.
- The cost of changing to design spacious enough dedicated areas for animals and to provide the best possible veterinarian care might be unsustainable for the smaller zoos.

## 03. CONCEPT OF THE SOLUTION



# New Meaning & New Solution

**AS-IS:**  
WATCHING



**TO-BE:**  
TOUCHING



## Zoo as an Immersive Experience:

The new meaning we want to give to zoos has its roots in the trends previously showed, in particular, given the always increasing interest in multisensory experiences and the deep connection between the senses and our emotions. **People would love** to go to the zoos to understand the animal kingdom by making an emotional connection with all the species through a new sense: the touch! Moreover emotions are able to increase empathy in people, creating an higher level of awareness toward the problems that are affecting the world as we know them; animals are in danger, together with their habitats, and we as humans are the only ones capable of resolving them before it is too late.

The implemented solution is meant to be part of a designed experience, a virtual reality in which human **feelings and sensations are the priority**. The main goal is to create an environment where the user is 'present' in the animals' habitat and has the ability to interact, touch, learn and get in contact with nature – such as petting a tiger in the tropical forest or playing with a polar bear on the ice! Having the ability to touch and be truly part of this kind of experience can have multiple benefits on each person's life, such as:

- Participating in decreasing environmental footprint
- Enhancing the connection between animals and humans
- Increased awareness
- Interactive education
- Therapeutic effect

# New Meaning & New Solution

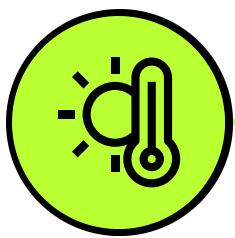
The new meaning of the zoos achievable with our proposal puts at the center of attention the value of enjoyment and makes the so far impossible things possible. With the help of Weart, the final users will be able to experience 2 different types of adventures later explained in the User Experience Design paragraph. This way the original scope of zoos is enriched by being able to touch and to have an interaction with existing or already extinct animals.

Climate change, endangered animal species and public indifference are threatening issues of today, therefore it is important to continuously find new solutions that can help the cause and tackle the issues. Our proposal gives us the possibility to **do something while having fun**, knowing the fact that sometimes people avoid problems because negativity is stressful, and our goal is to **educate** and **entertain** at the same time.

In order to create a positive change for people, it is fundamental to understand which factors are most affecting their emotions, which are inherently linked to and influence cognitive skills such as attention, memory, executive function, decision-making, critical thinking, all of which play a key role in learning. Therefore, our idea is to create an experience that puts users inside a virtual reality and exploit the sense of touch, the sense most connected to empathy and emotional bonding, to **bring animals closer to people when they are far away**. In this way visitors can discover the entire planet from their regional zoo, enjoying animals and learning about their habitats.

## Idea Concept: “*MetAnimals*”

The “MetAnimals” aims to **teleport the users into another world** by affecting their senses, so by creating a sensation. In order to make this possible, the environment, the sensors and the virtual reality have to be built around the experience. Factors such as human’s sensitivity to noise, change of temperature and light intensity need to be considered. More in detail, three different aspects can be taken into consideration to be able to make this experience possible:



STEP 1.



STEP 2.



STEP 3.

# New Meaning & New Solution

## 1. Setting the temperature according to the selected experience



This category is about what the users can feel about the chosen destination's climate. Here, thanks to Weart characteristics, the customer will feel different **temperatures** related to the natural environment visited, for example once arrived in Antarctica the haptic core will become colder.

## 2. The virtual environment



This category addresses what users see and hear. Both jobs are up to the software developer with whom Weart collaborates. Regarding the **lighting**, it is calibrated according to users' chosen destination. Concerning the **sound effects** instead, users will be able to hear different sounds depending on the environment and habitat they choose to see, and this will be possible using a VR that has built-in headphones. There are different audios associated with each environment and habitat to allow better immersion and realism to the experience. Additionally, the software provider must also develop the **graphics** and the general virtual environment in which the experience takes place. This will be made possible through a close communication relationship between both Weart and the customers and Weart and the provider. In fact, Weart will initially offer zoos "standard" proposals that can later be improved and updated with what customers themselves request. Finally, the software provider has also to consider the VR treadmill for the creation of the experience: the movement of the feet is tracked by sensors and transferred to virtual reality, this creates the illusion of physical movement through virtual worlds.

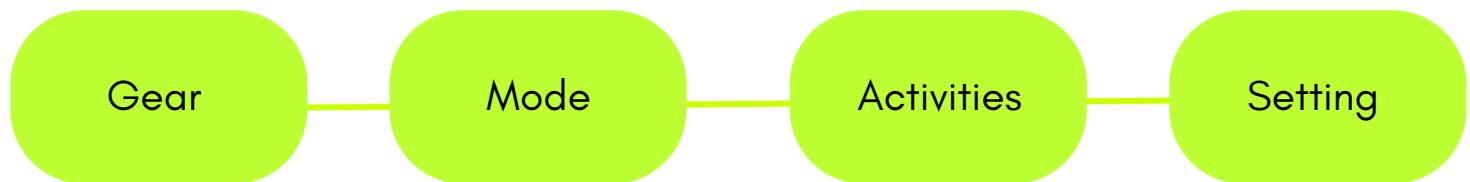
## 3. Touch - having the deeper connection



This category is addressing what the users are able to **touch**. The touch effects are directly connected to the animation. Preprogramming of the touch of the plants and all the animals' furs, feathers, scales are required and it is possible to make it lifelike due to the technical features of Weart. People will be breathless when they will touch with their hands wild animals, because the sensation will be so realistic that they will forget to be in a virtual world.

# User Experience Design

**MetAnimals** is created in an iterative storyline mode aided by Weart technology and VR means. The main elements to be considered in designing the experience include:



## Gear

The user will wear **Weart** gloves and a VR headset which will allow them to see and feel animals in their habitats. Also, the VR headset has built-in headphones. Once the user wear Weart gloves and the VR headset, he will get on 360-treadmill platform that will allow him to move in the VR environment.



Weart glove

+



VR headset + headphones

+



360 Treadmill platform

## Mode

First, we suggest and assume that our clients will invest in a **special room** in which to make the experience happen so that the technology is protected from damages such as the ones due to bad weather. The experience is designed to last 15 minutes and the user has the possibility to make different choices:

- The experience can be done individually or can be done together with other people in the room. For example, a family may decide to have the same experience at the same time.
- The user can choose different paths in the story mode which will encourage him to return to try new paths and possibilities.

# User experience design

## Activities

The core of the experience are some activities based on the haptic feedback provided by our product such as petting and playing with animals. The users get to interact with animals in **unusual** ways and have a closer look at them.

Also, the user can explore different **habitats** and examine their **uniqueness** such as tropical forests, amazon rainforests and polar zones.

Then, as we have already said, Weart at the beginning will propose some standard habitats and animals to the zoos, and subsequently, through a continuous relationship with them, it will be able to implement whatever requirements of the customer.

## Setting

**Two degrees** of customization are offered to the customers.

First, people can select different themes on which the experience could be done:

### 1. Conventional Zoo:

Users may simply decide they want to live the experience inside a **traditional** zoo such as the San Diego Zoo. This would allow them to touch the animals that can be observed inside it nowadays.



### 2. Into the wild:

Through this mode a real **simulation** of a certain habitat and the animals living within it is recreated. In this way, users have the opportunity to traverse the savannah, deserts, tropical forests...



# User experience design

## 3. Just imagine:

This option involves simulating an extinct or even imaginary historical habitat. This gives users the opportunity to interact with animals such as dinosaurs, Tarzan and the Lion King.



Then, a second distinction has been developed, in fact each theme can be experienced through two different "modalities".

### Modality A:

A kid-oriented experience will be offered for **entertaining** children up to 14 years old who will be transported to a colorful and fun world.

As soon as the child puts on the equipment and gets on the platform, he will be **teleported aboard** a magical train that will take him on a discovery of the wilderness.



The first stop will be in the **savannah**, where he will be welcomed by the lion king who will act as his faithful companion throughout the first stop. Of course, the child will be able to stroke his mane, and hear his powerful **roar**. In his discovery of the savannah, he will meet many animals with whom he will be able to interact, taking advantage especially of being able to touch them. He will see the zebras drinking from the pond, giraffes eating by gathering leaves from the tall trees, leopards running very fast and elephants baring.



# User Experience Design

After a few minutes the child will say goodbye to the lion and get back on the train that will take him into the **jungle** where, accompanied by a majestic tiger, he will be able to meet and touch many animals such as the panther, the snake and the cute little monkey. During the visit the kid will experience the difference between gorilla's and monkey's hair or feel the temperature of a reptile compared to a mammal. Touch the different kinds of texture between the ground in savannah, jungle, forest and Antarctica.



The next stop will be the **forest** where he will be able to pet bears, owls, jaguars and a very rare lynx.

Finally, the last stop of the train will be in **Antarctica** where penguins, whales and seals will entertain him.

At each stop the child will be immersed in nature thanks to the typical noises of the habitat, and the friendly behaviour of the animals who will lend themselves to being cuddled and running around with the child. The focus of the experience is that during the virtual visit the kid will be able to discover different natural environment through the sense of touch, for example differences in soils, trees, animals' furs and skin temperatures. Let's imagine a kid's **excitement** while feeling the roughness of an elephant's skin!



# User Experience Design

## Modality B:

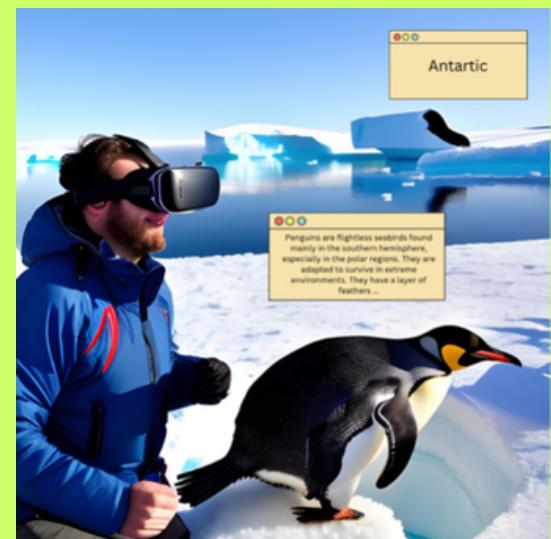
Supposing that the user selects to live the experience "into the wild", after wearing Weart's device and the VR headset and getting onto the **360-treadmill platform** the experience will start.

The path follows a **precise journey** around the globe, it begins from the savannah, where the user can closely observe the lions' hunting of their preys and understand, by touching with the hand, which muscles are more developed and what are the animal's facial hunting mimics. Then the route goes on in the jungle where it will be possible to feel different types of snakes, monkeys, bears and tigers. Meanwhile, the person will be fascinated by the surrounding **majestic** nature. Going on with the experience, there is the forest and the last step will be Antarctica, a magnificent environment enriched by the most beautiful animals.

The experience is designed to last 15 minutes during which the user is accompanied from one habitat to another via a **virtual guide** that provides detailed information about the animals and their surroundings. In addition, all the data explained along the journey are supported by the appearance of multiple pop-ups. Once the user arrives in each habitat, a window with their description appears and, as the user approaches and begins to interact with the animals, an additional pop-up with the precise name of the species, its diet and its conservation status appears nearby. The aim of this experience is to create an educational path that can catch the interest of adults, users do not touch the animals only to play with them, as for the children, but through the sense of touch, they are able to understand animals' peculiarities and discover interesting facts that will increase their fascination for the animal kingdom.

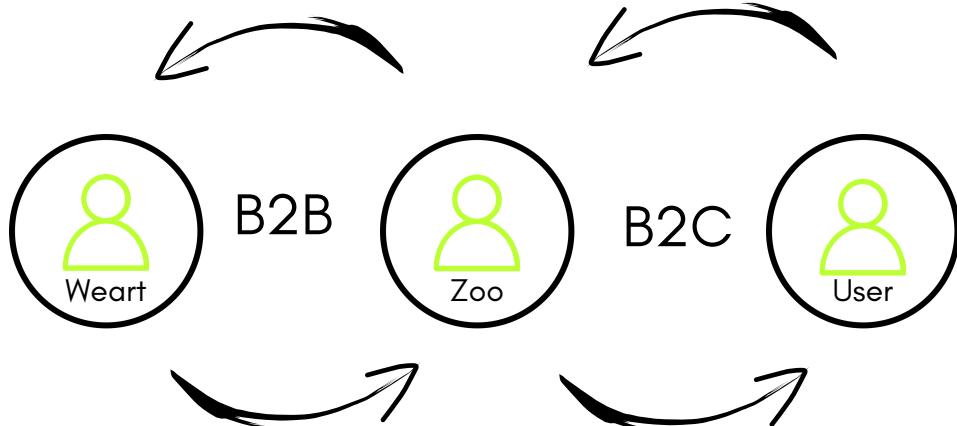
These **two modalities** are designed for two different types of users that we will show later in the "User Persona" paragraph. Moreover we have analyzed them according to "Into the Wild" theme, but in case the users choose to prove "Conventional Zoo" or "Just Imagine" experience, the basic idea remains the same: in both cases we have a real path through which the user is guided, in one case by a **virtual train**, in the other by a narrative voice acting as a guide.

We propose two different solutions, one with a more playful purpose and the other with an educational purpose thanks to the appearance of pop-ups during the experience. The common point, as explained sufficiently above, obviously remains being able to have closer contact with animals.



# Our Target

Weart operates in a **B2B2C market**, for this reason from now on we will do different reasonings for what concerns our customers and the final users. In our case, the customers are zoos, whereas the final users are those who will use the device in the zoos, therefore the customers of these.



## Customers:

The target customers are **zoos**, they will buy Weart and then sell the product experience to users. We bet on the want of zoos to innovate the experience inside the park and to offer a new experience to their customers for the reasons explained above, thus for the fact nowadays there is a major challenge for zoos to find new forms of entertainment.

The usual zoos' offer would be obviously available to all, but with the opportunity to offer added value. We will focus our attention more on the users because zoos will buy our product only if it is attractive to their customers.

## Users:

The product is designed to appeal to a **wide range of visitors**, and in general to all the visitors of zoos. In particular, as explained above, we developed two different solutions for two main categories of people: children and grown-up people.

On one hand, **adults** like parents might be interested in the product because it offers a balance of educational and entertainment activities. Interaction with animals can increase the feeling of happiness or relaxation and can also help to promote a sense of calm and well-being. The product can be the occasion to have a break from the daily routine and offer a chance to relax and have fun with the whole family.

On the other hand, the designed experience is appealing to **children** because it offers a fun and interactive environment. This includes opportunities to interact with animals and educational activities.

# User Personas

## **Group:** adult



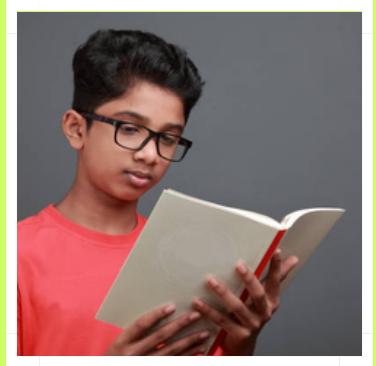
Barbara Mariani, 34 years old, teacher

Barbara is mother of two little children. She is a full-time worker at the local high school and for this reason some afternoons she is free to stay with her little ones. She always tries to offer them the best experiences possible in terms of fun, but given her "teaching nature", which are also educational and able to boost interests. Sometimes giving the children the best possible experiences while working can be stressful, therefore it would not be bad to find a place where they do some activities together in which everyone is autonomous and follow a journey on its own.

## **Group:** children

Paul Smith, 10 years old, student

Paul is a 10-year-old boy in his last year of primary school. He is an animal lover and his favourite cartoon is "The jungle book", Baloo the bear and Bagheera the panther are his idols! He is always attracted by all types of technologies because they make him feel part of the adults' world, his parents give him 30 minutes per day with an iPad. He does look forward to spend time with friends and animals and he would love to see his parents doing the same activity at the same time.



## Mental Health

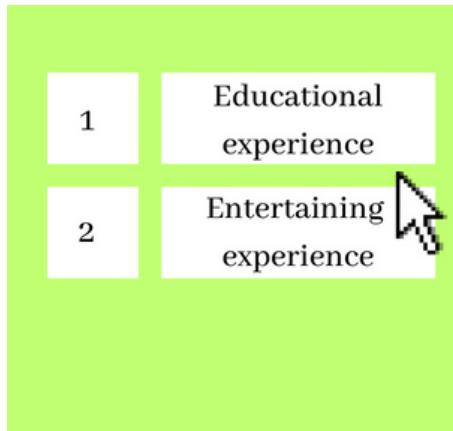
Considering the effect that our experience can have on the mental health of the final users, it is important to highlight in advance, that they are about to participate in a realistic adventure – but they are in a safe environment, the experience is completely virtual and they can not be hurt by the animals and the nature itself either. To minimize the undesirable negative effects on mental health, we highlight the path that each user can choose by themselves – this way having the possibility to avoid seeing a spider if someone has arachnophobia. This feature is extremely important in case of the "Children" user persona, due to the fact that this category can be more sensitive to a reality simulation thanks to not being able to separate the two different worlds: what is true and what is not.

## ADDITIONAL FACTOR

# Storyboard - Children



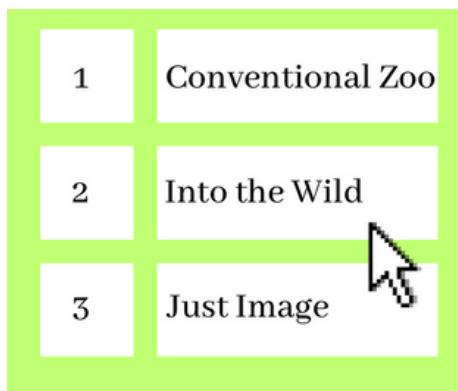
Room entrance: curtains



Choice of the mode



Putting the gear and get on the platform



Choice of the experience



Getting a feel, experience starts



Engage with animals

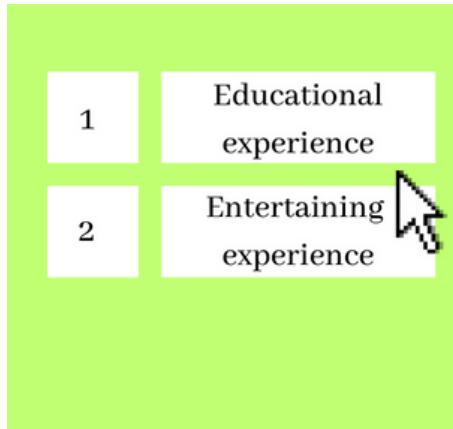


It is fun, again!

# Storyboard - Adults



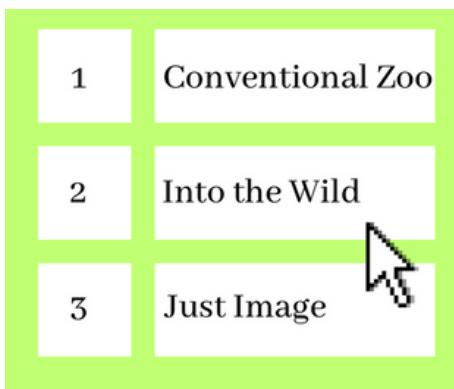
Room entrance: curtains



Choice of the mode



Putting the gear and get on the platform



Choice of the experience



Getting a feel, experience starts



Engage with animals



It is fun, again!

# User Journey

To better understand the entire process through which the user will live the experience, in the chart below is shown the user journey.

Our aim is to illustrate **how the user interacts** with our idea throughout its touchpoints. It is possible to find in sequence the user actions, a brief insight into how the action works and finally the emotions that he feels all along the process.

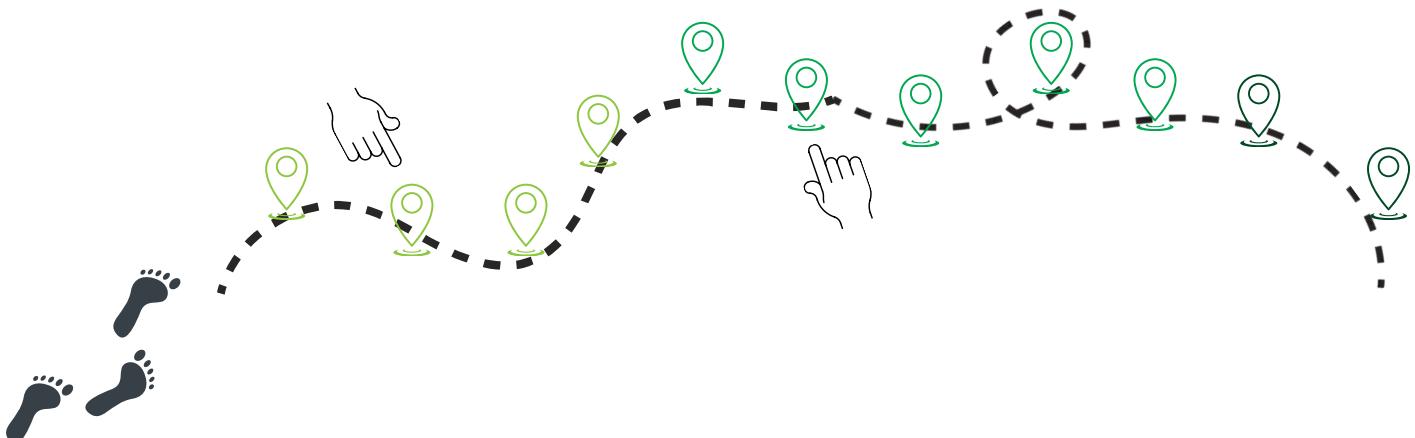
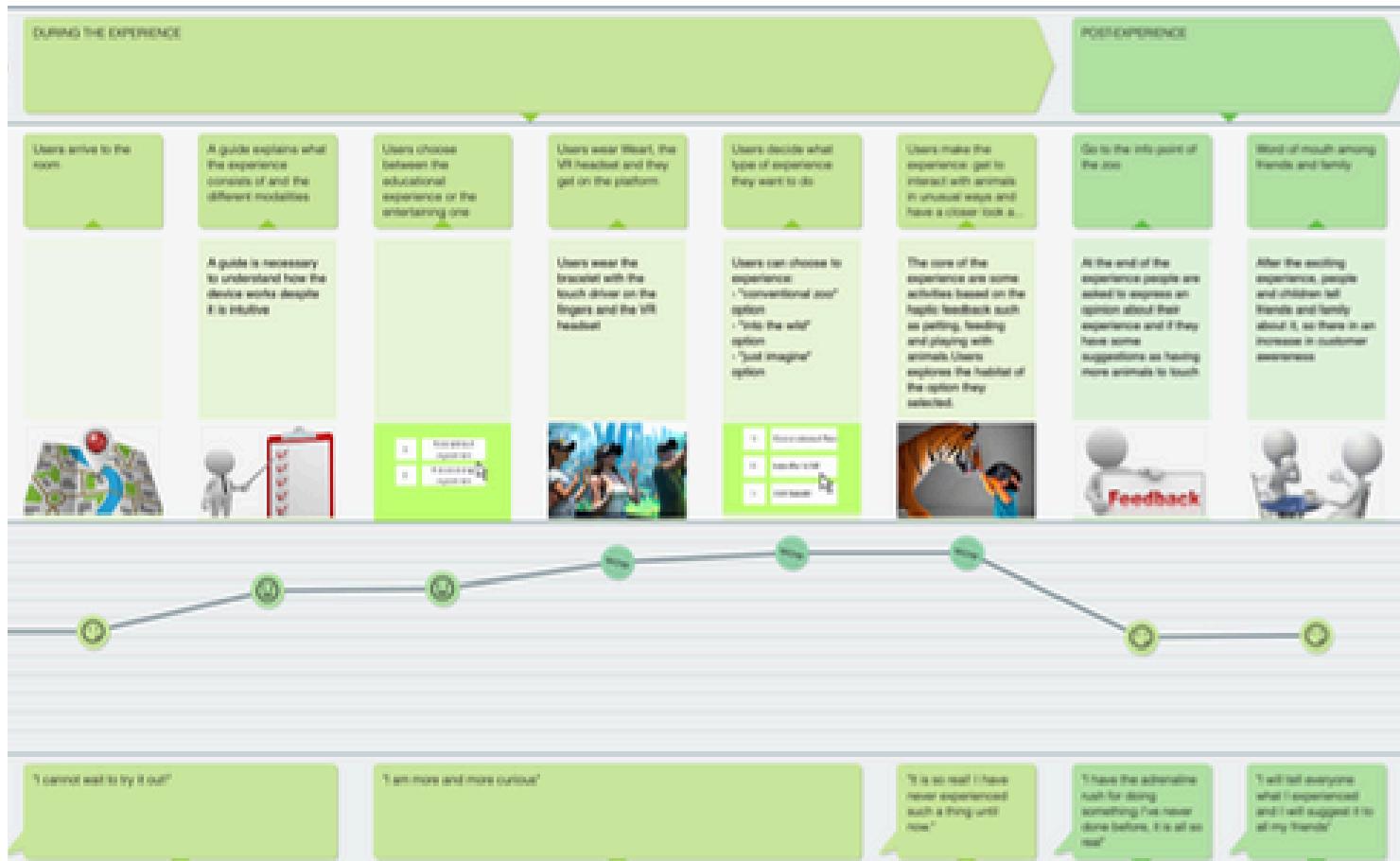
The phases of the process have been divided according to pre-, during and post experience. All these steps form part of what is called onboarding process, thus the start to finish process that enables final users to find, try and evaluate our product.

## Pre-Experience:



# User Journey

During and Post-Experience:



# Mock Ups



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# PRESS RELEASE

15 August 2024

## ENOVIA ANNOUNCES METANIMALS TO ENABLE ZOOS TO OFFER NEW EXPERIENCES TO THEIR CUSTOMERS

Milano, Lombardy, August 15, 2024: E-NOVIA and WEART today announced the launch of MetAnimals project, that is going to serve Zoos allowing them to offer more entertaining and engaging experiences based on haptic technology and VR means. The product is now available in Italy and will soon be available worldwide.

The zoo industry is facing a lack of demand, with other fields offering more entertaining experiences for the same price. Moreover, the rising concerns about animals' rights are attracting scrutiny from the public and activists. Thus, there will be a cost sustained to provide suitable areas and better treatment for animals.

MetAnimals allows Zoos to change their business model and rejuvenate their offer making it more appealing to the mass. The core of the project is to use WEART haptic technology to allow end users to engage and interact with animals, which is not possible normally. Zoos get to customize the digital experience from multiple options such as Zoos' replicas, simulations of real habitats and simulations of imaginary ones.

"Beyond every distance', this is our motto. In WEART we use our technology to replicate real touch in digital experience. MetAnimals project is perfectly aligned with our vision and values. It uses our technology to provide value to our customers and helps in respecting animal rights for a better and humane society." said Fabio Pizzati, Chief of entrepreneurs at E-NOVIA and Managing director at WEART.

Zoos and Aquariums are asked to buy the required gear which includes WEART haptic gloves and VR headsets and choose their digital experiences and pay its royalty. There will be scheduled updates and new additions to the experiences and a maintenance program for the gear. They also need to provide dedicated areas for the attraction.

" We noticed a sharp decline in the numbers of visitors and from our observations there seems to be a lack of interest from them. Also, the cost to maintain artificial habitats and provide the best treatment for the animals is not sustainable in the long run. MetAnimals allowed us to cut expenses and generate more profits while offering more interesting experience to our customers" said Safari Park, Via Larino 3, Pombia, Italy.

# Feasibility

To evaluate our idea from an economic point of view, we conducted an analysis of the expenses that zoos will incur and the associated revenues.

The main pro of our solution is that our clients will have to face almost only fixed costs, this means that once they reach the break-even point all the revenues coming from our product will be basically profits. For what concerns the software, Weart will buy it from a software provider (we are talking about a cost of 50.000 euros approximatively), and then resell it down in monthly payment to zoos. This will allow Weart to assure itself revenues both from the selling of the technology and the software.

Our idea is to sell 4 devices to each zoo because this allows users to share the experience with each other, hence it is more captivating. Obviously, it is possible to buy a different number of devices, this is just our advice to the zoos.

For simplicity's sake, below costs and revenues related to just one zoo are shown.

## Fixed costs:

Investment = Price of Weart ( $\text{€}4000$ )\*4 [YA1] + VR headset ( $\text{€}500$ )\*4 + treadmill VR ( $\text{€}900$ )\*4 + location setup ( $\text{€}4000$ ) + 2 computers ( $\text{€}2000$ ) =  $\text{€}27600$

## Variable costs:

Employee's salary ( $1300 \text{ €}/\text{month}$ )\*2 + Software fee ( $80 \text{ €}/\text{month}$ ) =  $2680 \text{ €}/\text{month}$

## Revenues:

Price for 15 minutes of experience =  $\text{€}5$

Experiences sold in 1 day: 10h opens, 9h available, 17 minutes each ( $15 + 2$  for setup) -> 3,5 experiences\*4 people per experience = 14 sold in 1 hour, 126 experiences sold in 1 day

Revenues per day =  $630 \text{ €}/\text{day}$

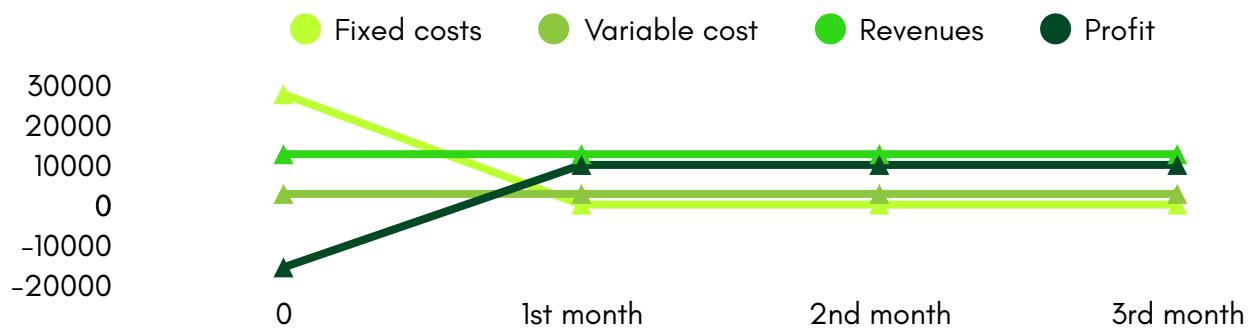
Revenues per month =  $630 \text{ €}/\text{day} * 20 = \text{€}12600$



Assumptions to support computations:

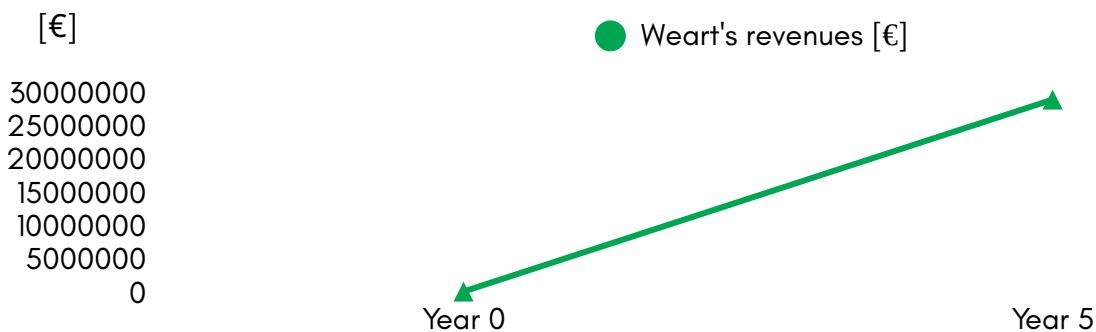
- we assumed that 2 operators are needed in the room
- Since weart has an autonomy of 2 hours, and since the use of the 4 devices at the same time has to be always guaranteed, a setup is needed every two hours to recharge the devices. Since a zoo is open an average of 10 hours per day, the total setups are 4. We considered the total time taken for setups to be about one hour, so the calculation was made considering 9 hours available.

NPV	0	First Month	Second Month	Third Month
Fixed costs	27600	0	0	0
Variable costs	2680	2680	2680	2680
Revenues	12600	12600	12600	12600
Profit	-15680	9920	9920	9920



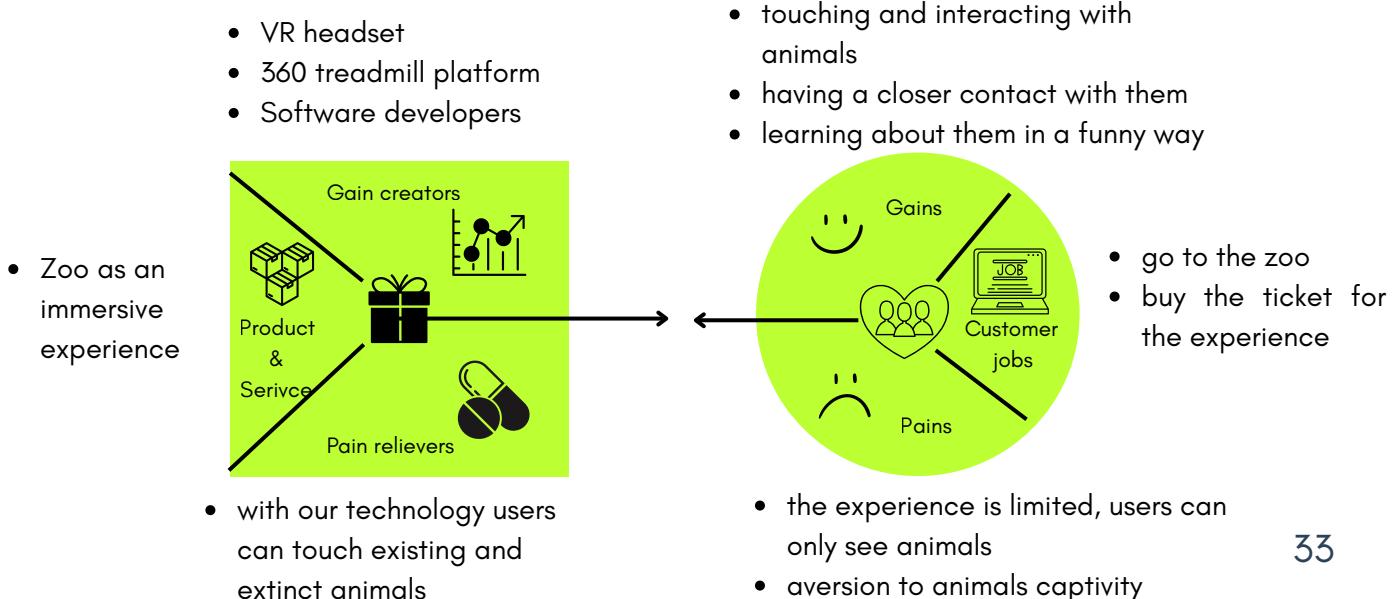
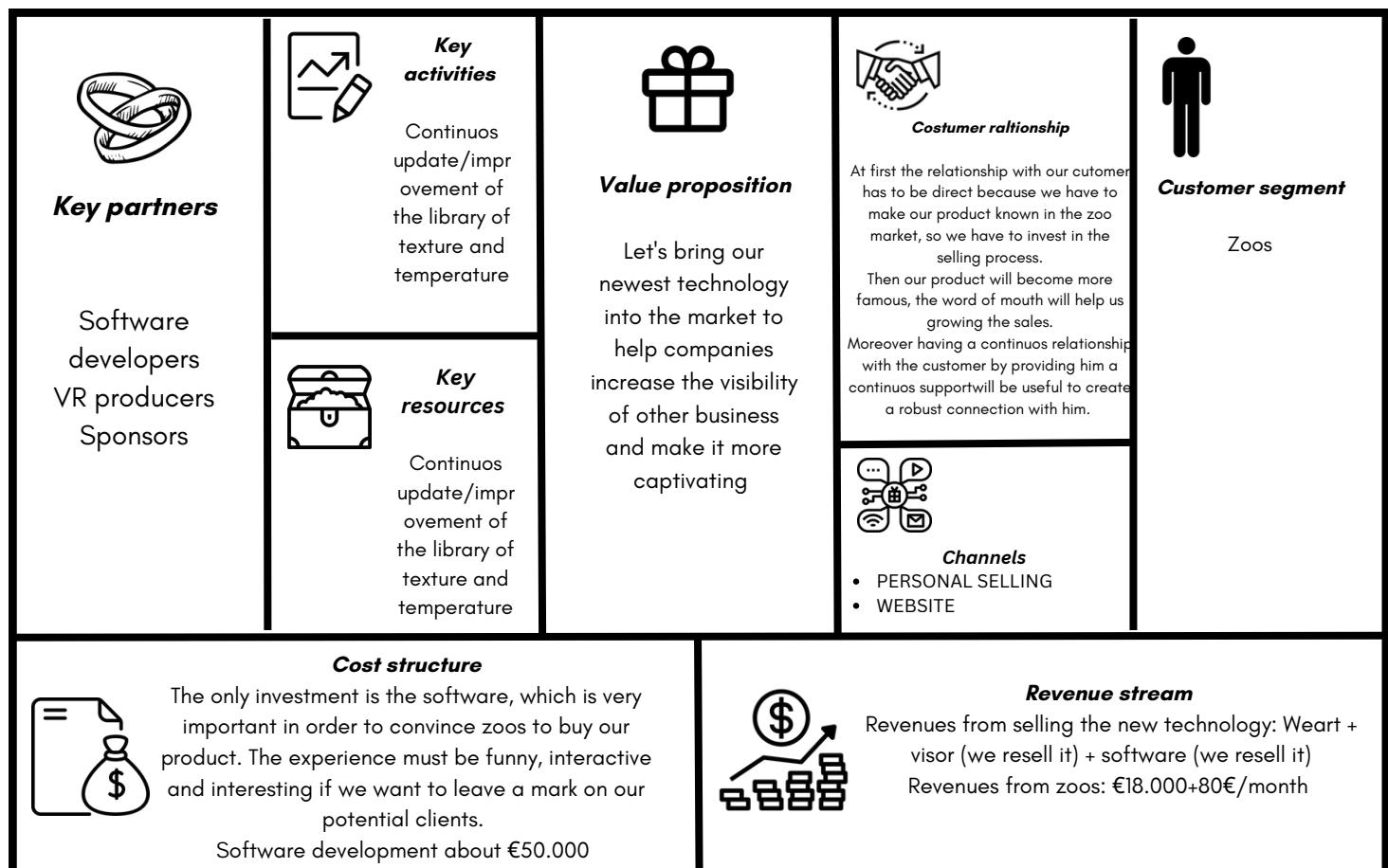
As we can see, if the zoo will be able to promote the experience well, significant profits will come immediately even if the investment is limited. Being the solution much profitable for one zoo, this could lead more zoos using our solution generating also more profit for Weart on the long term.

As said above, the revenues for Weart coming from the selling of 4 devices to one zoo is 16 000 € + 80 €/month. Considering that there are more than a thousand zoos in Europe we think it is reasonable to assume that in the next five years about the 60% of them will be adopting our solution, resulting in a total of 9 600 000 € of revenues for Weart plus the monthly fee for the adoption of the software, so 4800€. Moreover, we can assume that each of them will want to invest in more than 4 devices to offer a better and broader service. Therefore, considering that on average a zoo will purchase around 12 devices, the annual revenues of Weart will amount to 48 000€ plus 80 €/month. This means that in the next 5 years Weart will be able to generate **28 804 800€** of revenues.



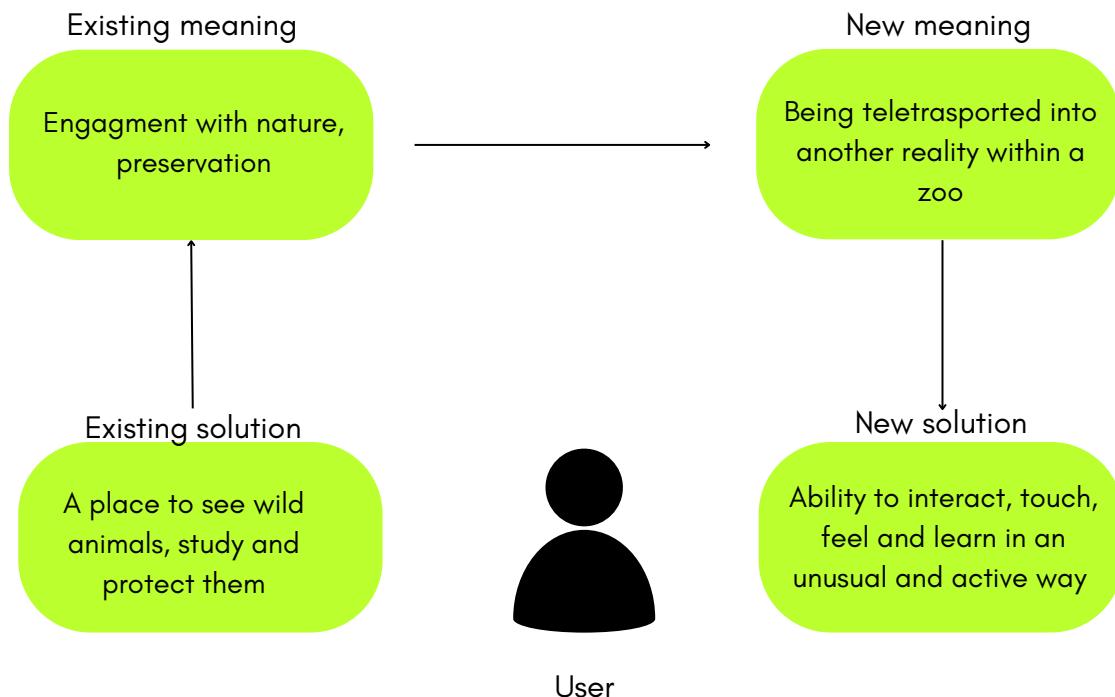
# Business Model Canvas

Business value canvas is a powerful tool where we can highlight our **value proposition** and link it with the most important parts of our solution. In this schematic representation we are able to summarize all the letters that enable us to achieve our goal through different areas.



# 04. CONCLUSION

Considering all the information written above, the innovation of meaning showed in the following scheme will happen.



In conclusion we, as a team, are very proud of our work because we managed to use a powerful technology in a field that is both entertaining and educational.

Working on such an innovative technology is at the same time stimulating and challenging, but since the beginning we saw the potentiality of Weart.

We see a rapid growth of virtual reality in the next future, and this product enables people to have an experience that is on another level compared to before, so the timing, the only matter is to use it in the right markets.

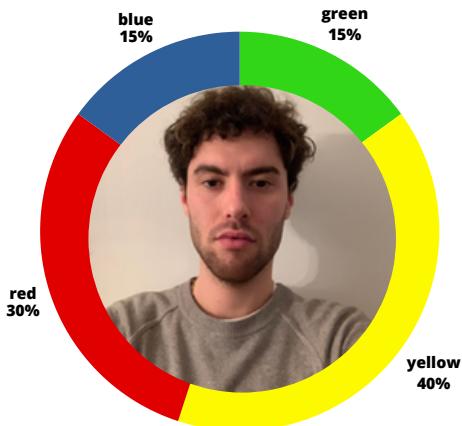
Having said that it is true that so far virtual reality is not very popular, but in the way we articulate our experience we firmly believe that people will find weart very attractive and they will be so curious about it.

# 05. TEAM ORGANISATION



# About Us - Whole Brain Model

During the drafting of the report we showed different behaviors and personalities. For better understand the behavioral features of each team member we used the Whole Brain Model.

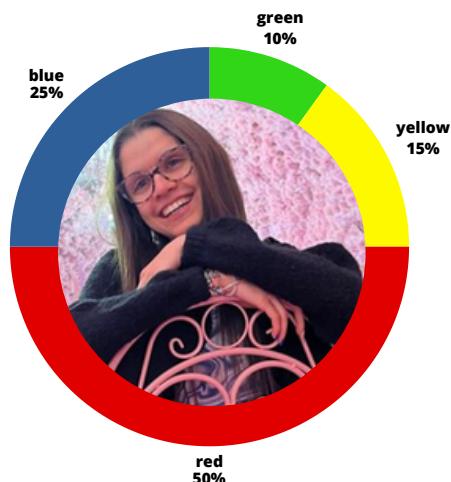


**Giacomo:** I see myself as a very vision oriented person therefore I always try to bring new ideas and possibilities to the table, I love to brainstorm and to hear what everyone thinks about my opinions. I think that when working in a team, group cohesion is a very important aspect and that is why it was fundamental to me that we could all find an agreement at each step of the work.

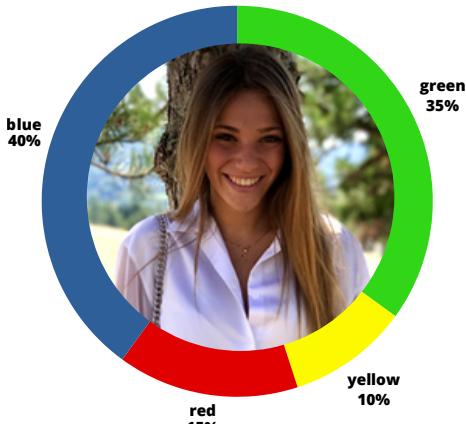
Before starting to work on the project I was not very excited and it seemed very difficult to create a collaborative and flexible environment with a group of 7 different people. Firstly, I was rooting for another idea but after listening to my colleagues' concerns, I decided to get on board with what is presented in this report. Thanks to our little disagreements and our common effort to be open-minded and cooperative, we were able to deliver a project in which each of us could recognize a part of personal work.

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**Giulia:** I consider myself a very sensible person that gives a lot of importance to others and tries to understand their feelings. I like working in a team and creating a nice environment in which everyone can express themselves in order to be motivated to achieve a goal. From the beginning I was very enthusiastic about participating in a project that was very different from the ones I used to do in my studies, the novelty charged me to give my all.



I was a little uncomfortable at first because I am a pretty shy girl. I was afraid of being excluded from the group as I was the only one attending a different course and I did not feel very good at expressing myself in English. In reality all the worries vanished over time because every member of the group was available and was able to involve me without judging.

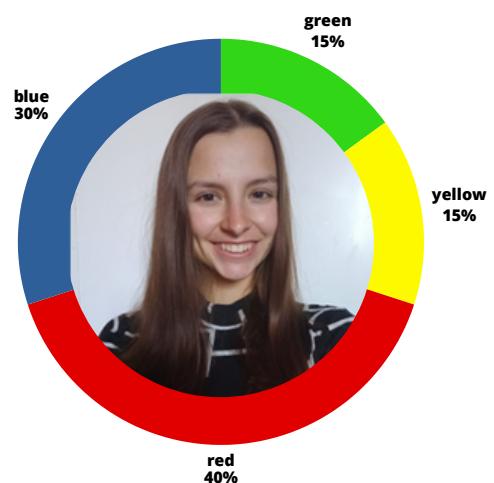


**Giorgia:** I have always thought of myself as a very determined person with clear ideas, if there is a goal to be achieved, I work hard to make sure that the result is great. I like to take care of every little aspect and detail of what I do because I believe that if things are to be done, they must be done well, otherwise it does not make sense. At the beginning I was very worried because of several factors: first because I am a very shy girl, then because I am used to work alone, and finally because I do not consider myself as a creative person, so I thought I would have trouble relating to 6 unknown people to deal with an innovation project.

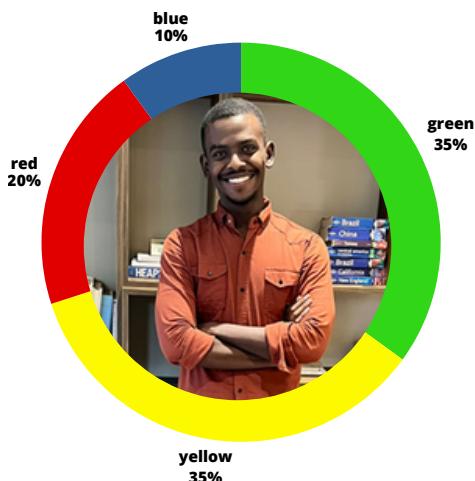
Despite this, in the end it turned out to be the opposite of what I feared. I was able to expose myself by always trying to be participatory and resourceful, and this was definitely thanks to the people in front of me. I found a group open to listening to others' ideas, willing to compromise, and able to leverage the strengths of each component.



**Zsófia:** Generally speaking, I am a very relation- and goal-oriented person, so for me it is very important to achieve the target and also to maintain a good relationship among the members. Therefore, I am always curious about my teammates' ideas as well as I like to share mine. To be able to get the best result, I like to step out of the workflow and do critical thinking.



For me working in a team of 7 people seemed a very challenging task, since we all had different ideas, background and time schedules. I was concerned about the possible disagreements and how each person will take part in the project, since for me having a supportive and collaborative environment is almost as important as the goal itself. In the end, this diversity and the general open-mindedness led to a lot of different points of view, so we could choose and improve our project together.



**Yousif:** I see myself more of a vision-oriented person. I usually don't have strong opinions regarding the details as long as the most important things are sorted out well. I always like to try new ideas, so I try to have the right attitude and to be helpful to my teammates. Also, I have come to appreciate structured thought processes through my experience, so I always approach my problem in such fashion. At first, I was not uncomfortable with the idea of working with a lot of people, even though I felt that it would be hard to contain our differences in one coherent idea.

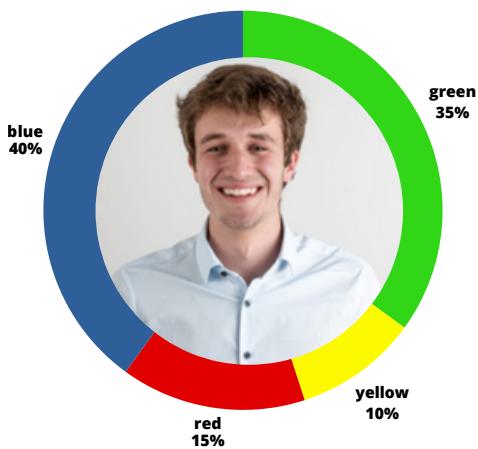
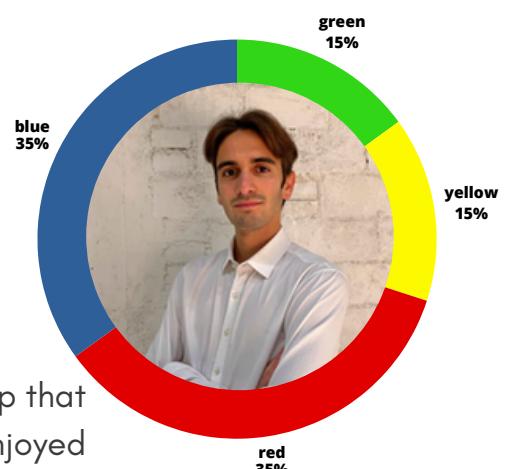
I believed that we will achieve if everyone contributed, but the team was very positive and attentive enough to exceed my expectations. Certainly, I was impacted positively by this experience and I learned a lot from it.

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**Tommaso:** I see myself as a person that is able both to be goal and relation-oriented, in fact I firmly believe that the two fields come together and are mutually indispensable. Creating an environment where everybody respects each other but at the same time no one is afraid to express himself, I think it is the best possible way to reach the goal.

I am an extrovert, so it was not hard for me to start a relationship that became a friendship with every member of the team. I really enjoyed the fact that we were all strangers, and I am very pleased to meet also people with different origins.

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**Danièle:** I think of myself as a person both goal-oriented and detail-oriented. For this reason, I wanted to keep the group focused on the final goal without being superficial about any decision to take. My contribution to the group was definitely not to give ideas, but to make them concrete and pay attention to details. Before starting the project, I was worried about the size of the team, because I thought that someone would surely be a free rider.

However, it turned out that diversity is the real key: all engaged in the project with their own peculiarities.

# Tuckman's Model

The Bold innovators is not a very diverse group in terms of nationality and academic backgrounds since only two members are not Italian, more specifically from Sudan and Hungary, and only one member has not taken a bachelor's degree in management engineering. The main source of diversity comes from our **personal interests**, this aspect became our main source of advantage since it boosted our curiosity in each other.

To analyze the evolution of our **group's dynamics** and the complex team interactions, **Tuckman's model** is going to be the best choice as we are a non-temporary team that worked together for an entire semester delivering various presentations.

For what regard our journey we were not able to define a clear separation between the different phases of the model but after a deeper analysis we highlighted some characteristics that belong to each stage.

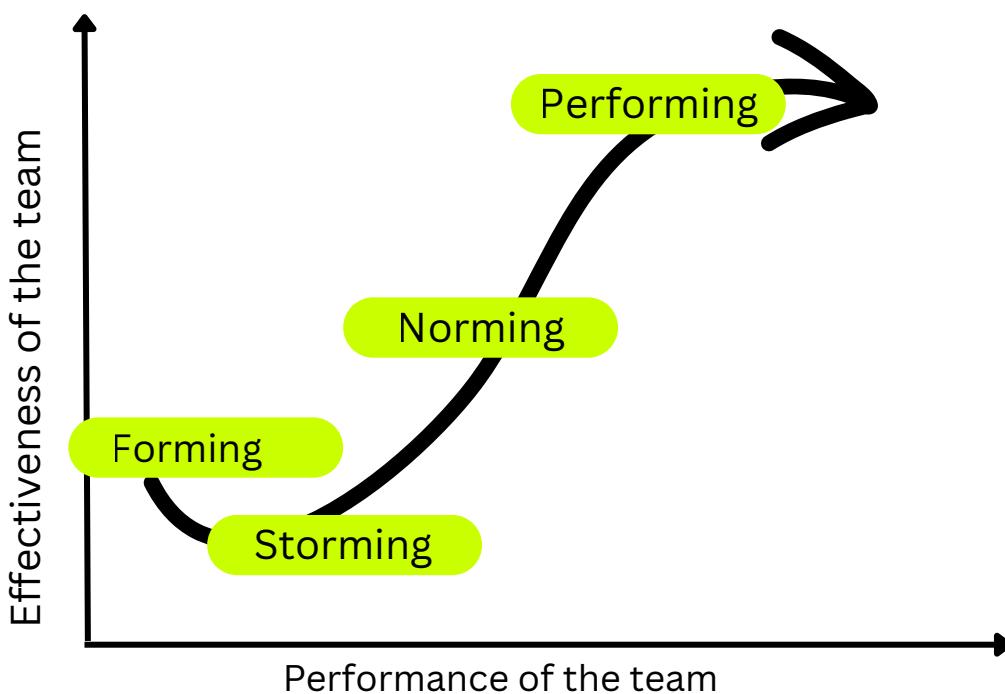


Right after the group was created, we all reached out to each other in class and started a very short introductory meeting. At the beginning there was a climate of general embarrassment as we did not know each other personally, which was immediately put aside thanks to the initiative of some team members and the common desire to start working to achieve the final goal. To avoid falling into abstract discussions, as can often happen during the forming phase, we started to introduce ourselves and we immediately decided the name for the team and created a shared OneDrive folder in which we agreed to upload all the documents and to leave comments about each other's work. **Tommaso** and **Giacomo** explained how in their opinion, it was important the **participation** of all the members at each meeting in order to always find a common ground to move forward.

# Tuckman's Model

We then obviously aligned ourselves on how to organize the meetings taking into consideration everyone's needs, schedules, capacity and interests. Finally, **Giulia** created a WhatsApp group to better communicate and plan future activities.

During the **forming phase**, insecurities in exposing oneself to others are common, but it did not occur as everyone proved to be respectful and willing to listen. Furthermore, we all like to joke and make fun of each other and it helped us to overcome moments of stress and difficulty, for example before the multiple reviews with the professors along the semester.



**No major conflicts occurred** over time. The only relevant one was choosing whether to focus on the development of a new concept of zoo or to create a sex toy using a single haptic core. We chose to present both ideas during the first scheduled review but since we did not receive a clear direction from the professor, the choice was in our hands. We started to brainstorm all together with the common willingness of not wanting to arrive to a conclusion by voting, therefore we put on the table the pros and cons of each solution and in the end we decided to opt for the zoo's solution. In this situation, more hidden traits of everyone's personality have emerged, for example who is more casual in explaining personal ideas, who is more reserved or who tends to be more critical.

In the end the moment was overcome thanks to the common rational and practical mentality, we had to achieve a goal! Another difficult task was to identify the New Meaning of our innovation because we had to meet multiple times and to collaborate before finally finding a shared solution.

# Tuckman's Model

During the course of the semester, the **figure of a leader did not emerge**. Given the fact that we were a self-managed team, we all had an opportunity to lead thanks to the sub-division in smaller groups that changed components and had to focus on completely different topics every time. As said, the roles have changed over time and the tasks to be performed have been decided accordingly to personal interests and inclinations; for example **Zsófi** was the most capable in creating Canva's presentations and she managed to always make them much more captivating, on the other hand **Giorgia**, being herself very attentive to details, summarized precisely everything we said during each meeting and she pointed out what was missing in the report's draft. We reached the performing phase quite quickly, as the climate within the team has always been democratic and when faced with a problem, we were able to overcome it by uniting. For example, during our interview with the former dean Ferruccio Resta, **Daniele** and **Yousif** worked together to frame the cell phone on a broken tripod in order to have the best recording angle; or when we could not identify a weak signal to start with, and we studied and read as many papers as possible and wrote down tons of ideas all together. No one has ever taken credit for the work of others since we **all wanted to get involved** and commit ourselves to try to come up with an innovative concept.

Our strength is that we spent many hours together without ever getting bored, we joked around during breaks, we had lunches together and to make studying more pleasant we would take an ice cream break up the Students' Hill in Bovisa: these were many opportunities to get to **know each other** more in depth.

The **adjourning phase** cannot be properly discussed since we are still in the working of our project but for sure we hope to have found **not only colleagues but friends** that will accompany each other until and after the Master's graduation!



# 06. REFERENCES

- admin (n.d.). Just a Touch Away - Weart - Haptic Feedback Technology. [online] Weart. Available at: <https://www.weart.it>.
- Noone, G. (2022). Is virtual reality bad for our mental health? [online] Tech Monitor. Available at: <https://techmonitor.ai/technology/emerging-technology/is-virtual-reality-bad-for-mental-health>.
- Worland, J. (2017). The Future of Zoos: Challenges Force Zoos to Change in Big Ways. [online] Time. Available at: <https://time.com/4672990/the-future-of-zoos/>.
- McKinsey Technology Trends Outlook 2022 Immersive-reality technologies. (2022). Available at: <https://www.mckinsey.com/spContent/bespoke/tech-trends/pdfs/mckinsey-tech-trends-outlook-2022-immersive-reality.pdf>.
- Duggal, R. (n.d.). Council Post: Are Multisensory Experiences The Next Frontier Of Building Brands In The Metaverse? [online] Forbes. Available at: <https://www.forbes.com/sites/forbescommunicationscouncil/2022/05/10/are-multisensory-experiences-the-next-frontier-of-building-brands-in-the-metaverse/>.
- Tasnic, C. (2019). Trend Report: Global Rise in Environmental Concern. [online] Glocalities. Available at: <https://glocalities.com/reports/environmental-concern>.



**Thank  
You**

**THE BOLD INNOVATORS**