HYBRID 3D FASHION DESIGN

documentation sprint 3

1. design process
2. fashion presentation forecasting
3. technological possibilities
4. pro's & con's
5. demo concept
6. fashion collection
7. impact on fashion industry
8. technical supplies for the concept

CONTENTS

1. design process

DESIGN PROCESS

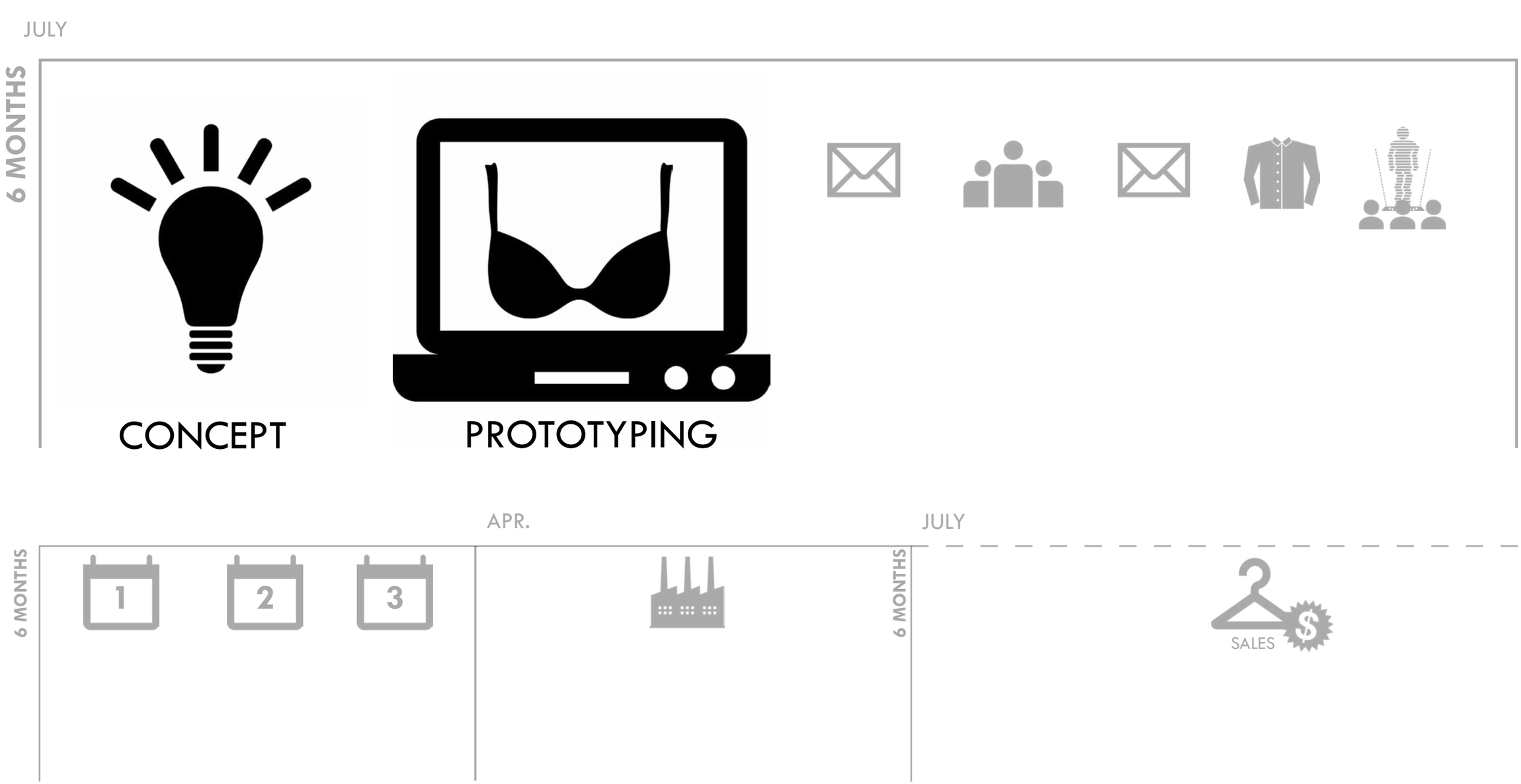


Figure 1: Design Process Workflow Improved by using Software and Virtual Media and new technologies, In consulting with Jose C. Olcina

Fashion design processes can be shorter by using virtual fashion design. Fabric simulation and their libraries can help fashion companies to produce in an earlier stage. In this sprint the 3D fashion group continued the user story of fabric simulation and experimented with Maya nCloth plug-in were already conducted in the last sprint. Based on our final concept for presentation and our concern for improving fashion design processes through virtual fashion, this user story has been accomplished by simulating some fabric (lace) samples using the Maya nCloth.
[3D Fashion Group]

Van der Velde send seven fabric (lace) samples, along with mechanic properties of the samples, to test with. Considering the fact that the nCloth system focuses more on animation-purpose simulation, it is a difficult task to find a way to translate the actual measurements into nCloth parameters (some parameters are not defined for simulating real fabrics, also the value range of one parameter can vary from 0.001 to 10000), or write a script in Maya for the same purpose. Therefore firstly a video has been made of the real fabric behaviors, and simulates the real fabric behavior based on video frames instead of real measurement values.

FABRIC SIMULATION

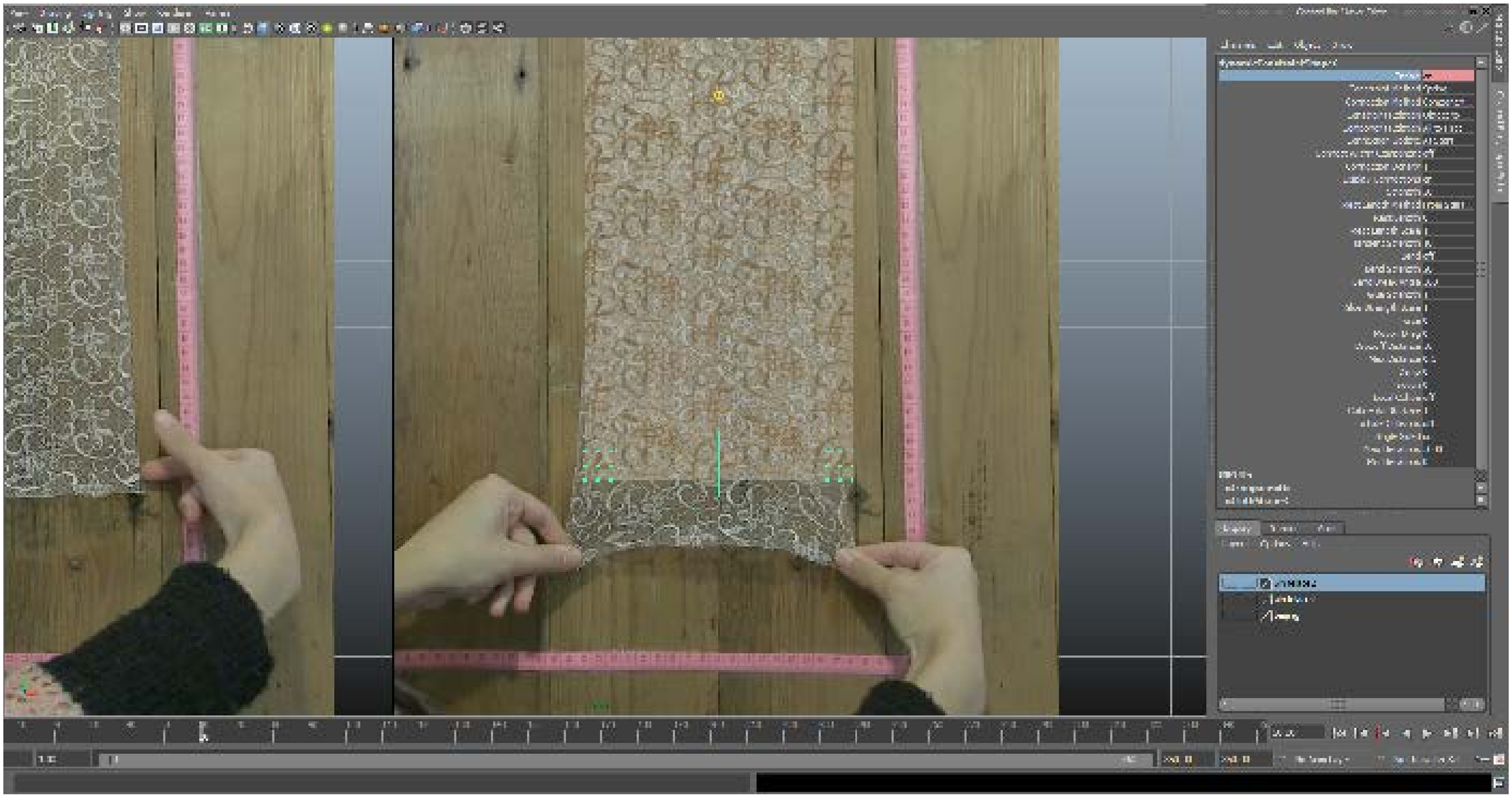


Figure 2: Fabric simulation in Maya by Yang Chen

4 items have been tested of all the fabric samples (stretching, dropping, collision, and air dynamics). A video has been made for each item and each sample. Next planes were built in Maya with textures of the samples (from scanning), thereafter nCloth was applied to these planes. By adjusting the parameters in the system different properties of the fabrics can be simulated.
Each of the item aims to simulate some specific properties of one sample. For instance elasticity has been simulated in the stretching test, mass and bending in the dropping test, friction in col lision test etc. A visualization of a comparison between real fabrics and simulated fabrics was created. Also an experimented with Unity was conducted. It was possible to successfully import the fabric simulation cache file into Unity. This can be very helpful for creating fabric animation for a virtual presentation.
[https://www.youtube.com/watch?v=3IcAOAalnlM]

2. fashion presentation forecasting

FASHION PRESENTATION

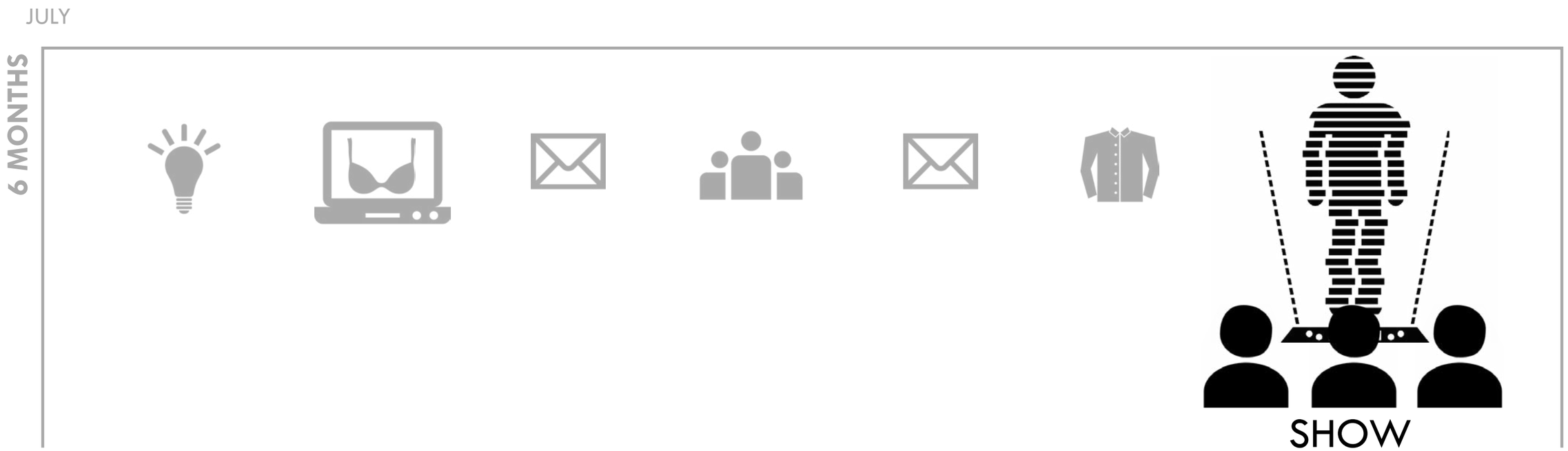


Figure 3: Presentation in fashion industry Improved by using Software and Virtual Media and new technologies, In consulting with Jose C. Olcina

It's fascinating how fashion is presented. Since 1885 the catwalk is the platform how we present fashion collections. A runway with a new collection on moving bodies.

"People in the fashion industry know there is a structure to it. It's a bit like going to church in the 19th century. You've got to be very impassive; you can't make a bad face if you don't like something and you've got to stay awake and watch it."
[Caroline Evans]

Catwalk since 1885

THE EXPERIENCE & EXCLUSIVITY

Figure 4: Gareth Pugh, S / S 2015

Nowadays the experience economy where we live in influence the presentation forms of fashion.
The collection story or philosophy is the most important to visualize, instead of the actual garments.

Tell me I forget, show me I remember, involve me I understand.
[Pine II en Gilmore, 1999]

the next fashion presentation

INTIMATE & EXCLUSIVE

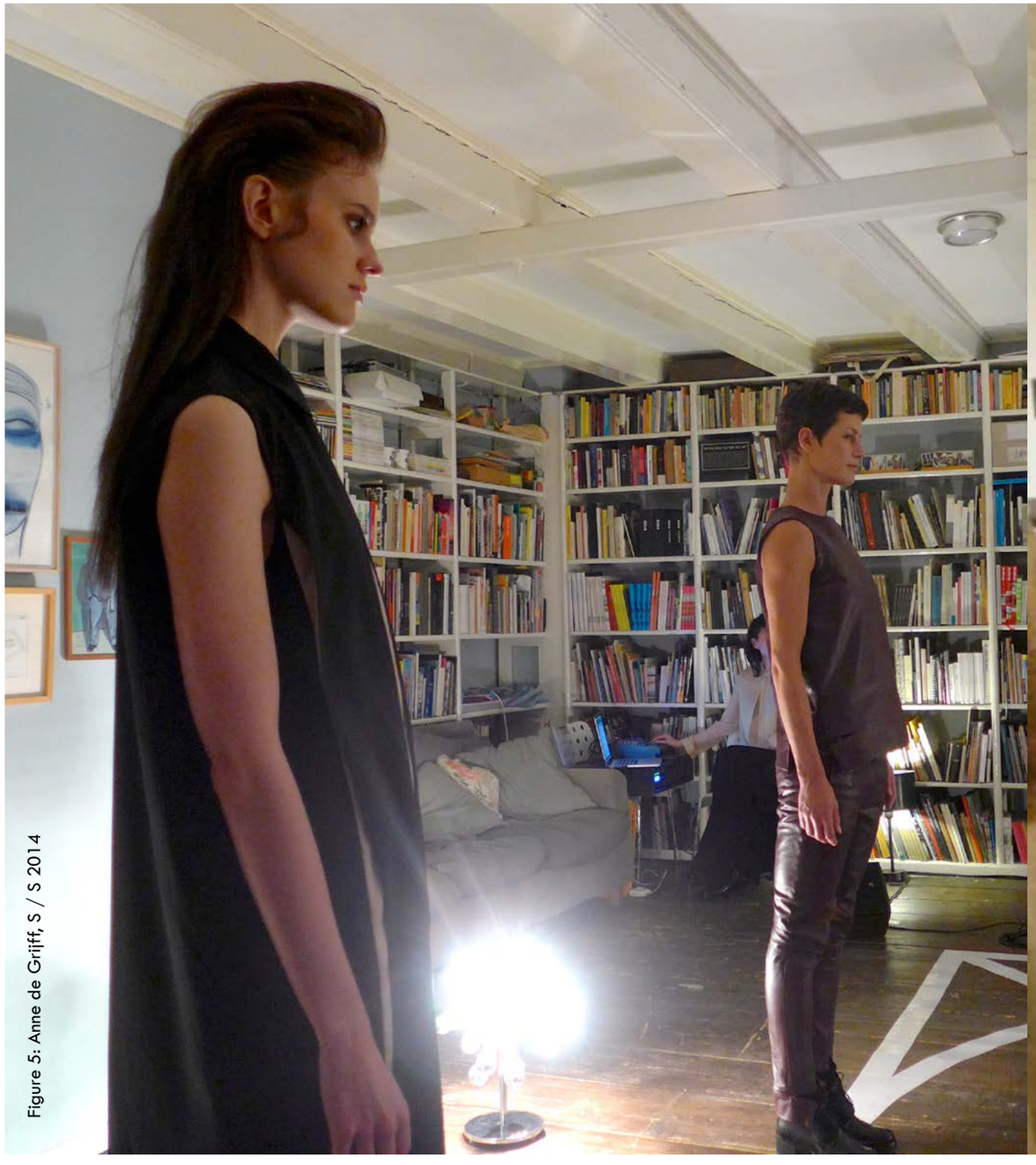


Figure 5: Anne de Grijff, S / S 2014

One sees the fashion show changing in two directions. On the one hand more personalized, and on the other hand more technology driven. Fashion shows will become more personalized, small events for a special selected group.

For example the presentation on fashion designer Anne De Grijff. She invited her most important customers for dinner, one by one the customers where invited to come to another room where a model wrote poems.

FASHION & TECHNOLOGY

Figure 6: Future of Fashion is Now Exhibition, 2014

The other direction will be influenced by technology. Technology will intergrate more and more in our daily lives. As a team we are curious how the fashion presentation will change and what specific technologies will be valuable for this. That's why we choose to go more into depth in fashion presentation and technology.
Futuristic technologies and the social value of clothes are themes with which the latest generation fashion designers address the fashion of the future.
[Sjarel Ex, Director Museum Boijmans Van Beuningen, *Future of Fashion is Now Exhibition*, 2014]

Figure 7: Top Shop Fashion Show, 2014

Fashion retailer 'Top shop' recorded their fashionshow with a 3D camera. And uploaded this to the Oculus Rift. With these equipments they made it possible for all their customers to sit front row at the fashion show.

3. technological possibilities

HUMAN TECHNOLOGY

Figure 8: Koert van Mensvoort, Humane Technology #5: Empower People, 2014

“The bugbear of the impersonalized future with computers takes over the world. Things we don’t know are scary to us naturally”. Technology philosopher Koert van Mensvoort says that computer screens will be replaced by human technology that is an extension of the human body.

GOOGLE GLASS

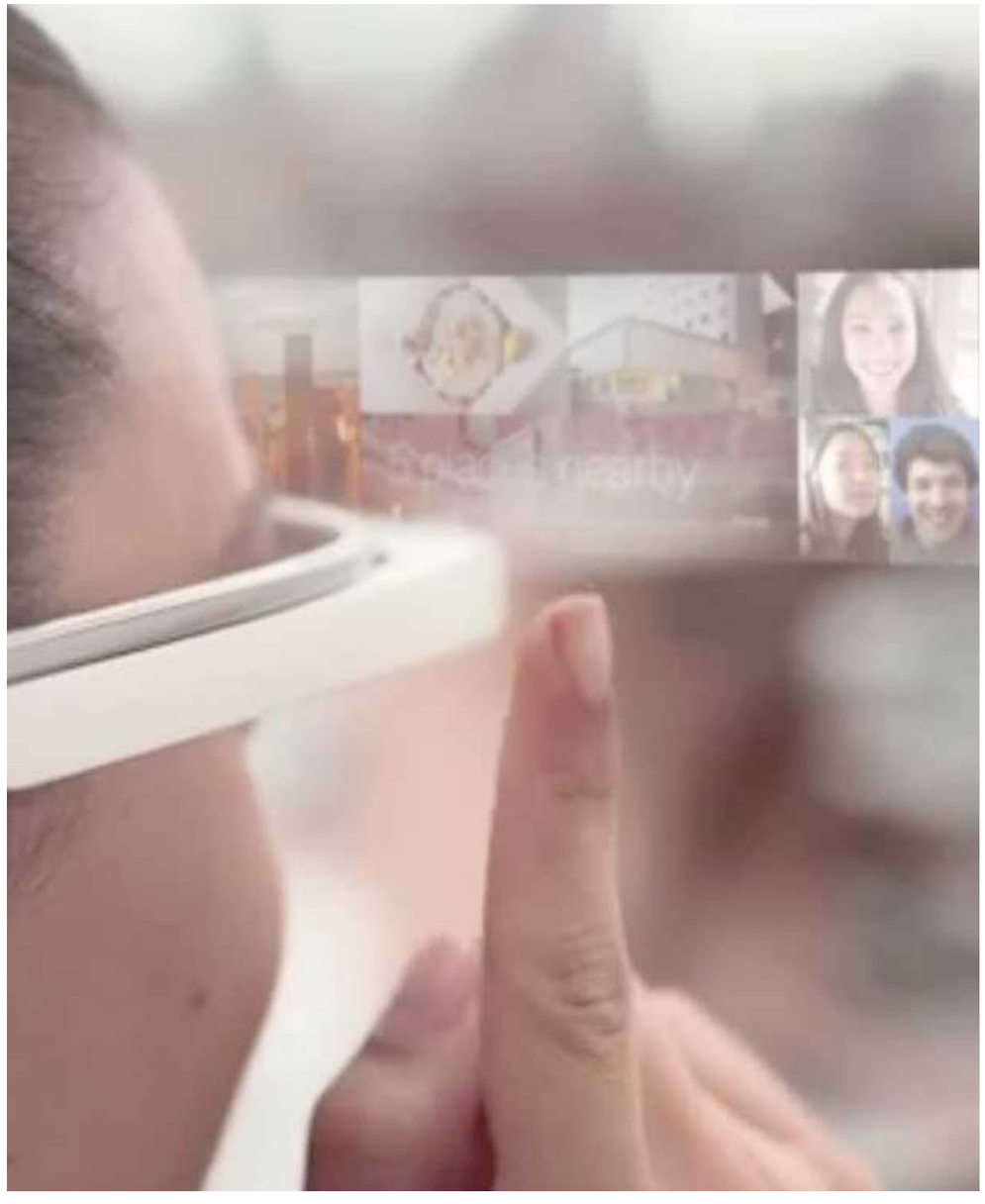


Figure 9: Google Glass and its App. 2014

So, with all these insights we researched about potential devices, which can be interesting for our final prototype fashion presentation. The Google Glass is an augmented reality glasses. This means that you add information or visuals to the physical view.
For presenting fashion this can be an added value to implement fashion visuals in our daily lives. The glasses are €1800

OCULUS RIFT

Figure 10: Geoffrey Lillemon, 2013

The Oculus Rift is a box around the eyes, totally isolated from reality. You can look up down and to the sights just like the physical view. Because of the changing perspective while you move it really feels like you are in a different world.
The Oculus Rift gives a exciting total experience.

The Oculus Rift uses custom tracking technology to provide ultra-low latency 360° head tracking, allowing you to seamlessly look around the virtual world just as you would in real life. It creates a stereoscopic 3D view with excellent depth, scale, and parallax, delivers a high-end virtual reality experience at an affordable price and provides an approximately 100° field of view, stretching the virtual world beyond your peripheral vision.
[http://en.wikipedia.org/wiki/Oculus_Rift]

GOOGLE CARDBOARD

Figure 11: Google cardboard, 2014

The Google cardboard is the same idea as the Oculus Rift, but then you just use your phone as screen. The quality is less than the Oculus Rift but still accurate.
Since you can use your phone and they are quite cheap (€20) it is accessible for everyone.
[https://cardboard.withgoogle.com/]

LEAP MOTION

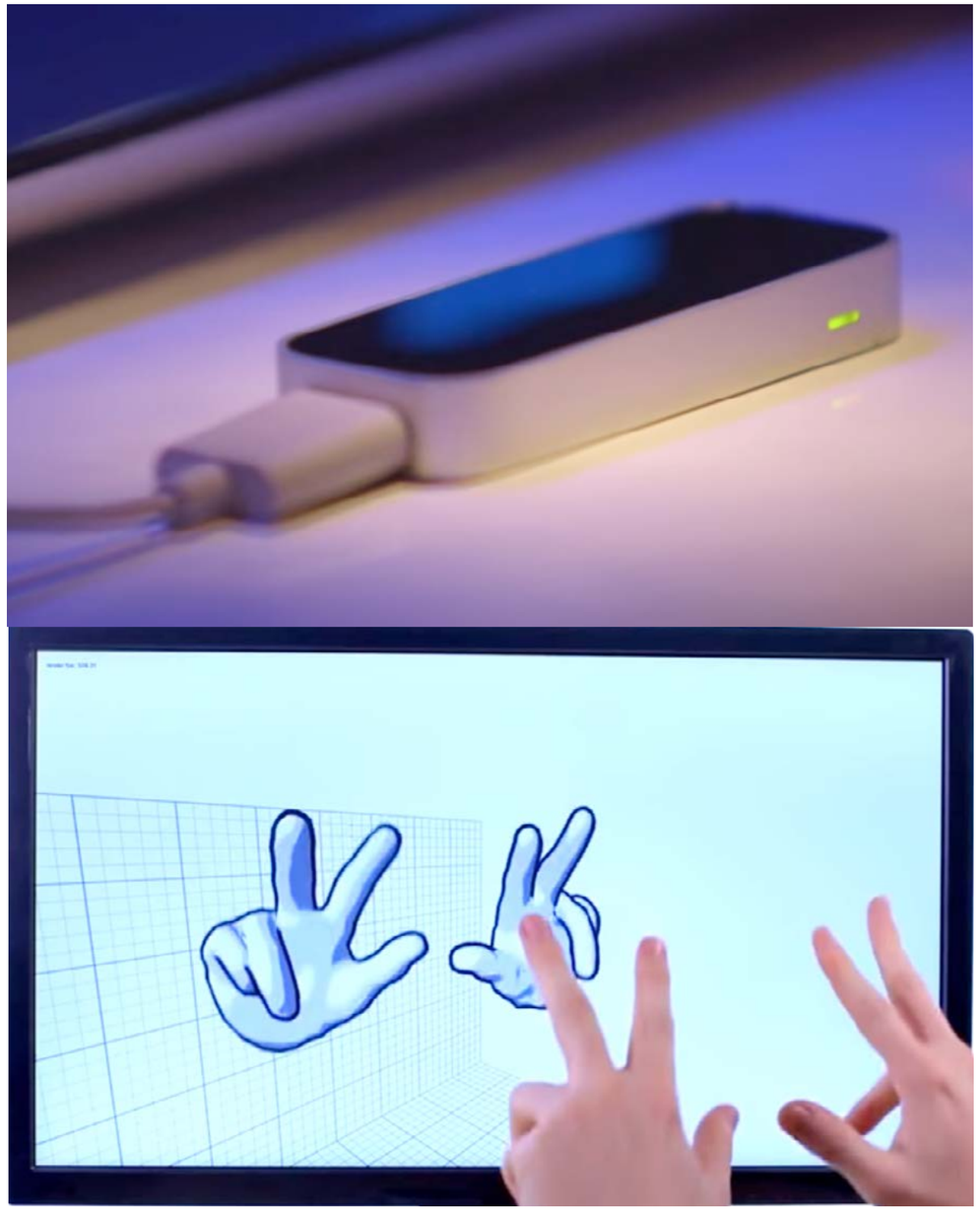


Figure 12: Screenshots of Leap Motion Intro - Featuring v2 Software, Youtube.

The leap is a motion track scanner for your hands. It's a small device which tracks the movement of your hand. This can be interesting for a fashion presentation because of the interaction.
For instance you wear the Google Cardboard in combination with the Leap you can drape and move the garments.
[https://www.leapmotion.com]

REALITY VS. VIRTUAL

Figure 13: Geoffrey Lillemon, 2013

Up to now the Oculus Rift and Google Cardboard are the most interesting devices to use for fashion presentations.
In these headsets you can make a reality or virtual reality experience. In the reality experience it's only possible to look 3D around you, but you can't move yourself.

By using virtual reality that it's more like a game, people can interact with the garments, walk around and move objects.

4. pro's & con's

PRO'S

1. Accessible for everyone at any place

2. Audience all over the world

3. Audience can interact with the collection and eachother

4. Virtualy presenting before producing

CON'S

1. the fashion industry is moving too fast, with technology this situation can become even faster and faster

2. no physical contact

5. demo concept

DEMO CONCEPT

Figure 14: 3D-printed virtual reality headset, Queensland's Sunshine Coast University, Australia May, 2014

Figure 15: Screenshot of Monarch Expérimenter movie, Cloth simulations produced in Marvelous Designer by Chris Chui, May, 2014

Based on previous research, interviews and tests three ideas have been made for a virtual presentation experience (SECOND SIGHT). In the first one want to make a virtual fashion show by using Oculus Rift/Google cardboard in real time.

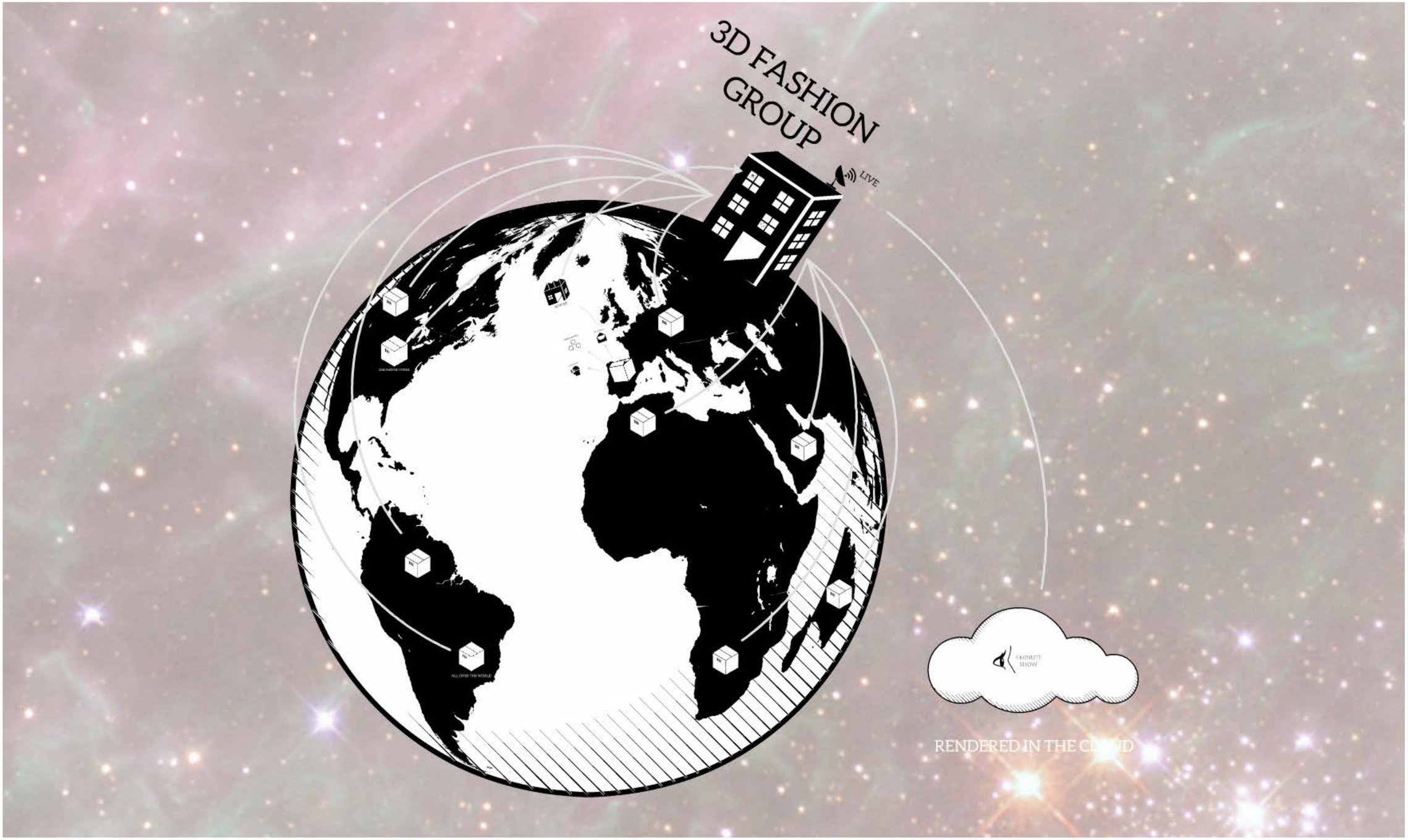
1) Everyone Invited
2) Small Event
3) A Different View

1) Everyone Invited
Who's invited?
Everyone all over the world is invited at the fashion show of SECOND SIGHT's spring summer collection 2015.

How is that possible? We'll tell you.
We send you a box containing the invitation, a VR glasses and a secret box.
From the moment you installed the VR glasses app on your smart phone or computer, you can check at the live count down how long you have to wait until the day comes of the SECOND SIGHT show.
At home, on the street or where ever you are at the moment, take a seat and enjoy the first virtual reality fashion show through your VR glasses.
During the show you can walk to the avatars with your favourite outfits and in the meantime you can share your thoughts with other visitors.
At the end of the show, your personal code appears. With this code you can open the secret box…

CONCEPT 1

everyone invited



We have used Prezi to make this concept more visual:
https://prezi.com/sp3exekfrvi3/scenario1/

Figure 16: Screenshot of our concept presentation in Prezi, Made by Mber Slooten, November, 2014

CONCEPT 2 small event

Figure 17: Small event

The second concept is idem the first one, only difference is instead of sending the packages to people, we invite them to come to our place and they can see our virtual fashion show by using Oculus Rift/Google Cardboard in a small centralized event that we arranged. In this case the presentation would not be online.

CONCEPT 3 *a different view*

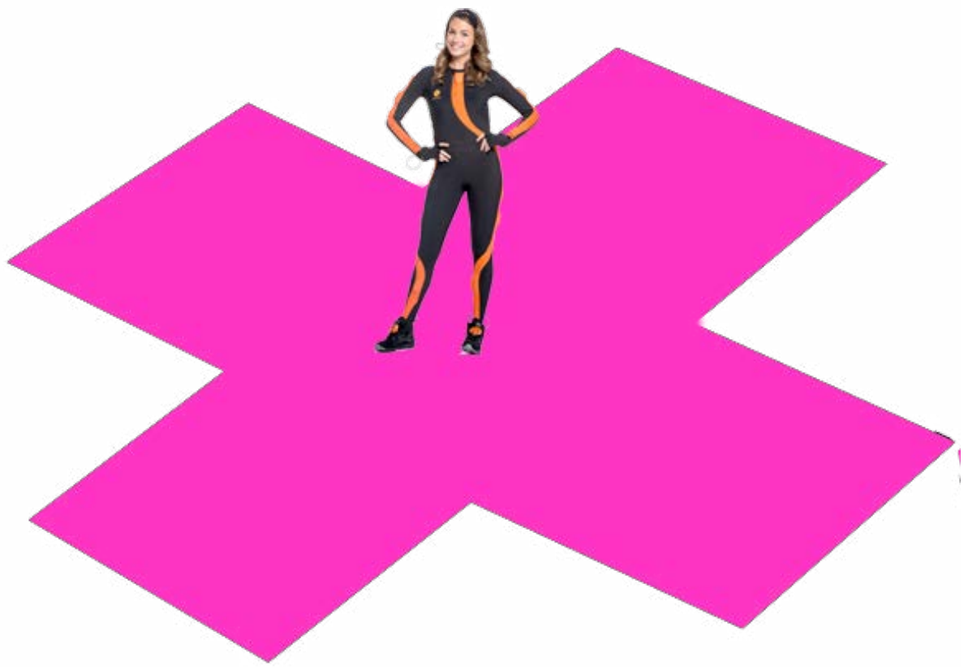
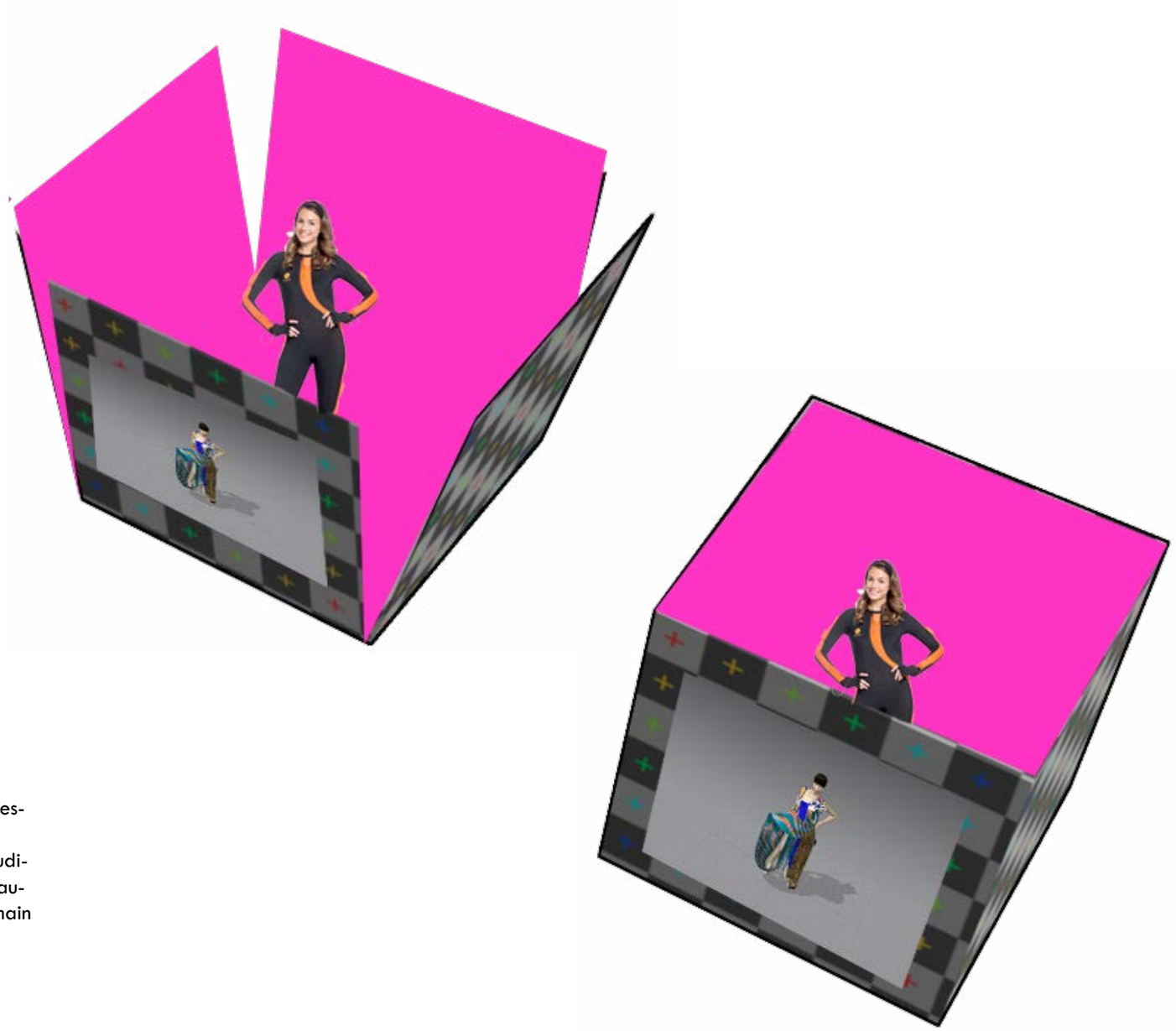


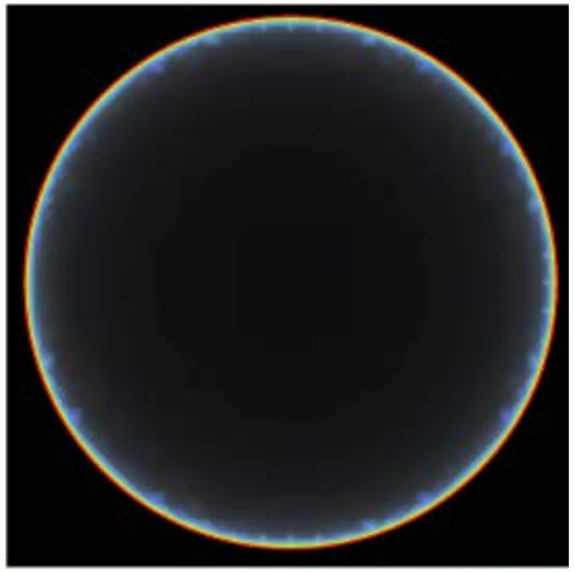
Figure 18: A photo montage made by Sophie Schaminée, November, 2014



The third concept is also small event but instead of using Oculus Rift, the show will be present in 3D TV. Four 3D TV prepared the walls of a big box, at the beginning the box is unfolded and the model with motion capture suit stand in centre of unfolded box, the audiences can see her acts directly then after a while the walls will rise up and in following audiences just see her avatar on virtual fashion presentation on 3D TVs and the model remain inside the 3D TV Box.

6. fashion collection

FASHION COLLECTION



For creating the concept we looked at what was happening in the world around us. Many social tendencies that are happening at this very moment have to do with the story we came up with. We researched many platforms and from there we got a few keydrivers of why we are doing the project now and not in two years time. From there we wrote a small story and gathered a lot of imagery we thought fit the story. By laying the images in a storytelling way, the viewer will understand the message we are trying to convey.

Ready to wear
Expressive accesories
Lingerie/lace
Digital silhouettes
3 simulated outfits

The concept for the collection contains 3-6 images, fabric samples, silhouettes, keywords and a small text. With these elements it is possible to create a smoothly running collection outline. For the next sprint there will be three full outfits, in progress, but the outline will be visible.

Figure 19: Collection concept images selected by Amber Slooten

7. impact on fashion industry

IMPACT ON FASHION INDUSTRY

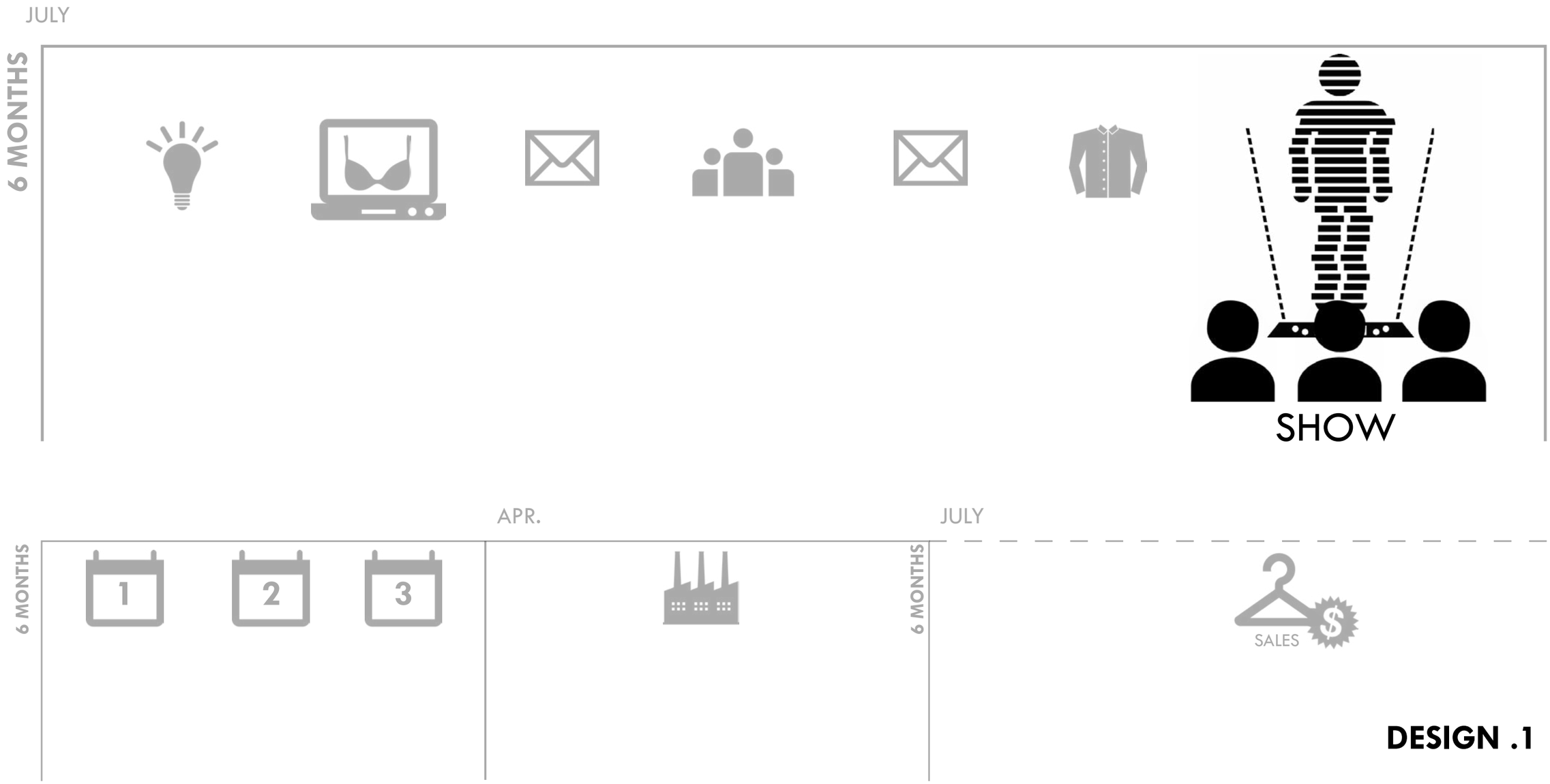


Figure 20: Presentation in fashion industry Improved by using Software and Virtual Media and new technologies, In consulting with Jose C. Olcina

Now fashion designers
can present their collection
virtually before producing.

DESIGN .1

PRESENT .2

SUPPLY AND DEMAND .3

PRODUCE .4

8. technical specifications of concept

TECHNICAL SPECS

1. Oculus Rift DK2

2. Google VR cardboard

3. Xsens motion capture suit

4. Kinect V2

5. game engine

6. fabric simulation software

7. Clo 3D software

In order to realise all three ideas we need to experiment with above stated technologies. Some of them have been tested in Sprint 3, others will be tested in Sprint 4. Underneath a short overview of the results of the following technolgies: Oclus Rift, Motion Capture Suit.

Xsens motion capture suit

Xsens Motion Capture Suit (MoCap Suit)
MoCap is a way to digitally record human movements. The recorded motion capture data is mapped on a digital model in 3D software (e.g. Maya or 3D Studio Max) so the digital character moves like the actor you recorded. The MoCap technology is used in the entertainment industry for films and games to get more realistic human movements. A famous example of a movie with lots of motion capture technology is Avatar.
It has 17 internal trackers sensors that give user freedom of movement and he/she can move freely around because it doesn't need cameras.
[https://www.xsens.com/]
MoCap suit is a flexible and portable tool that can be used indoors or outdoors
Xsens MoCap suit is working with special software that it called MVN Studio and it has easy calibration and gives a real time movement on screen. It's possible to record and review the data simultaneously and some edits are possible on it.
We have an Xsens suit and its software and tried it several times and recorded short movies to show how it works. The movie is accessible in below link.
[https://www.youtube.com/watch?v=-gxJYTZzVUg]

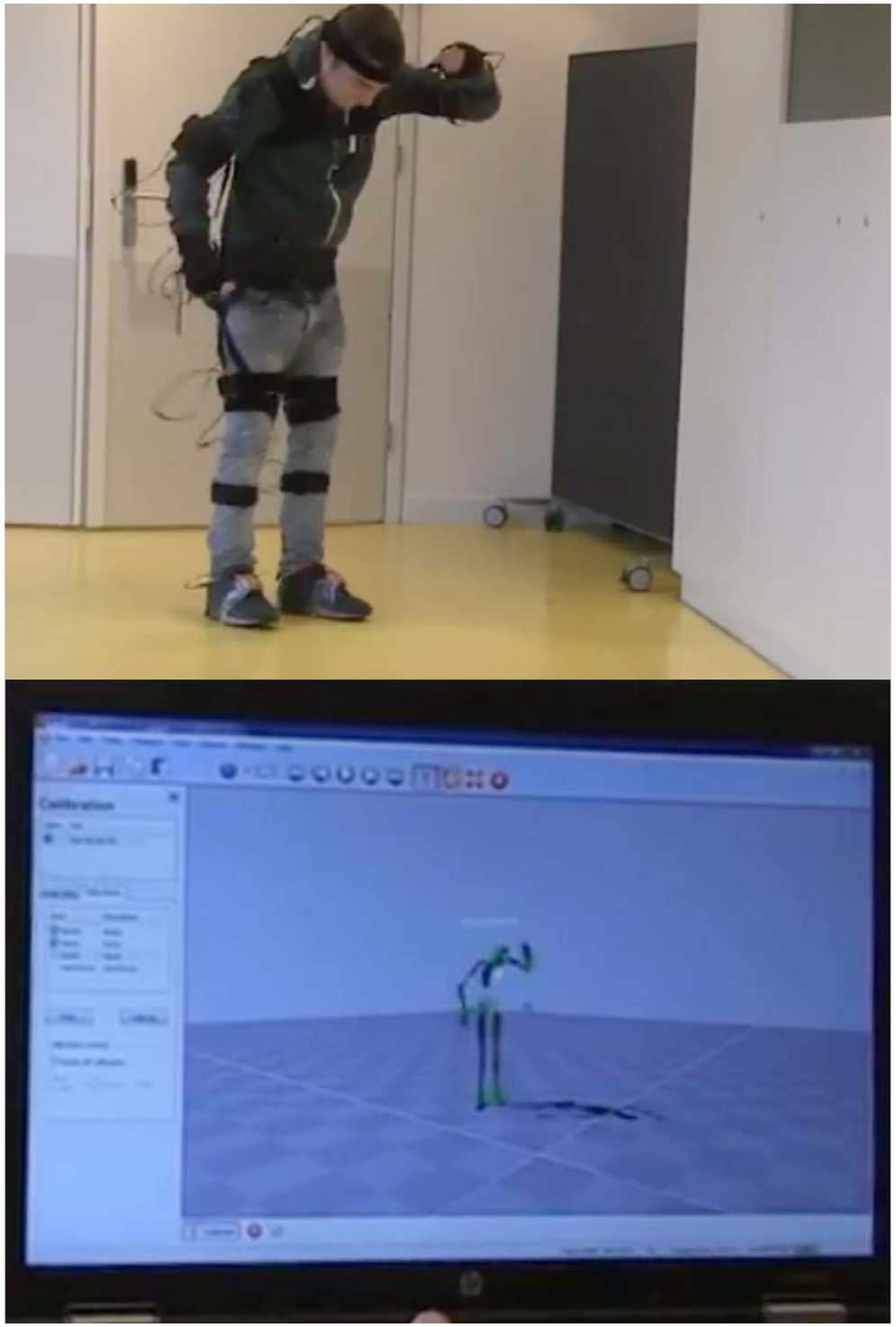


Figure 21: Screenshot of MoCap suit test movie, made by Kaveh Khorramian and Michael Lovett

HYBRID 3D FASHION DESIGN

documentation sprint 3