FUTURE
OF
RETAIL

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INTRO

ODUCTION

The future is nearer than we might think. It's changing everything around us: from the way we communicate with each other to the way we work and live. The retail sector is no exception. Its vastness knows - almost - no limit, and it's hard to keep track of. What are some important things that could happen in this quickly approaching future? Why do retailers need to focus on their customers more and more? In these next articles we'll discover the different aspects of the store of the future. We'll not only look into the technological side, but also give some insights into customer value and design. The future of retail is now, are you ready?

0.1 RESEARCH QUESTION & GOALS

Our research goal is as follows: Do research in order to use new technological advancements in future stores/future retail sector to benefit both customers and stores. Our research will lay the foundation for our final product. That's why we've chosen to take a more practical approach, instead of a more scientific one.

We picked this as our goal seeing as it is one we can achieve. The other reason would be that happy customers equals happy companies; without customers there is no retail. We feel that through technological advancements that are being made even this very moment, we could improve the retail sector for all parties involved. This will result in a concept for a better, more efficient, higher quality store.

"How can we use (immersive) technology to create a better
user experience that also benefits stores in the retail sector."

CH1
RETAIL TODAY

1.1 WHAT IS RETAIL?

Retail involves the sale of goods from a single point. It's the places we all go to for shopping, for example: malls, markets, department stores, etc. Goods are sold directly to the consumer in small quantities, for their end use. You could say that retailing is nothing but a transaction of goods between the seller and the end user as a single unit - a single piece - or in small quantities, to satisfy the needs of the individual and for direct consumption.

The current situation of Retail involves us using multiple channels for sales. Those channels can be divided into two categories: physical and digital. Each category has their pro's and con's, which we put in a handy table for you.

Physical

Physical
store

Mail-order
catalogue
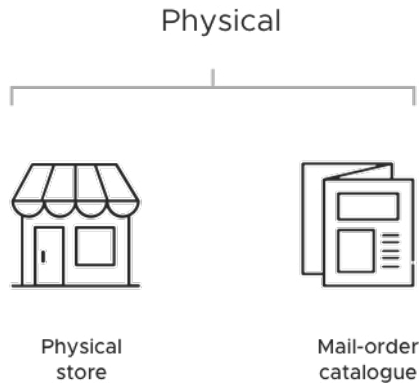
Physical Retail

The biggest channel in physical retail is the traditional stores as we know them, the brick and mortar businesses. These are places where we go to see or get new products and services. There are sales assistants that will help you and will give you custom recommendations based on your preferences. Most of the time you can immediately take your purchased items with you, if they're in stock.

✓ Personal recommendations / help   ✗ Less product information

✓ Ability to see/feel the products   ✗ Harder to find products

✓ Zero delivery time, no shipping costs   ✗ Need to physically go to a location

✓ Safer / trustworthy   ✗ Carry the purchases home yourself

✗ Dependent on local stock

✗ Dependent on opening hours

Digital

E-commerce
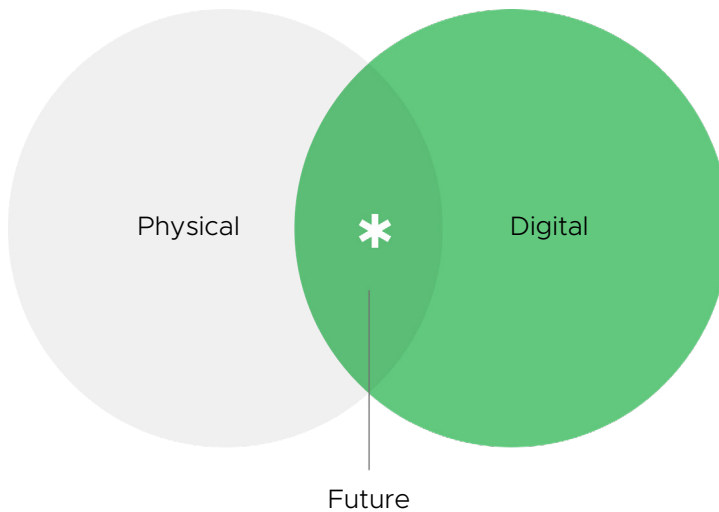website

M-commerce
website

M-commerce
app

Social media
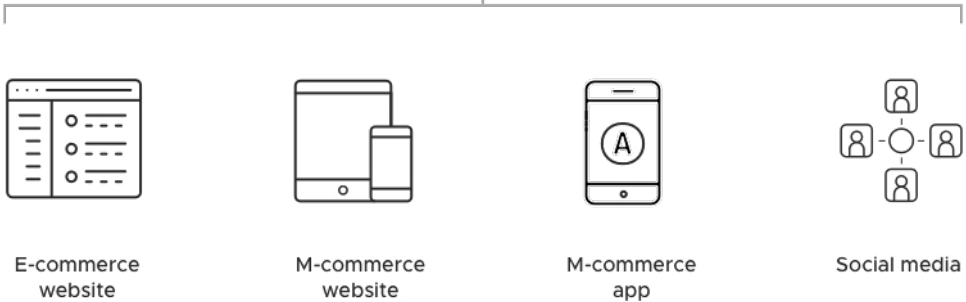
Digital Retail

Digital retail is all the retail we do outside of the conventional stores that we just talked about. It's the retail that happens online, the non-closing web stores that will help you find what you're looking for 24/7. These stores have larger quantities of stocked goods, and maybe even have more goods to browse through. What is the current situation of digital retail? Let us divide it into pro's and con's once again.

✅ The stores are almost never closed	❌ Can't inspect or try on the items
✅ Buying from your home/the road	❌ Delivery times (problem with gifts)
✅ No dealing with salespeople	❌ Easier to get scammed
✅ No crowds or parking	❌ Restocking/shipping costs returns
✅ No waiting lines for check-out	❌ Locally refunds are easier/faster.
✅ Reviews about products	❌ Shipping costs may be higher
✅ Easier to look for great deals	
✅ Products may be cheaper	

1.1 WHAT IS RETAIL?

In the future retail will probably become a combination of the positives of the physical and digital channels. The focus will be on user experience and user centered design. This will give customers the best experience possible, but more on that in chapter 3.

Physical   ✳   Digital

Future

✓ Human interaction   ✗ Need to physically go to the store

✓ See & feel product   ✗ Less job opportunities

✓ Immediately have the product   ✗ More electricity costs

✓ No changing clothes > AR mirror   ✗ Bigger investment (for the store)

✓ No more queues for checkout   ✗ Less transportation

✓ No more hassle with money

✓ Always shop for clothes

✓ Personalised experience

✓ Environmentally friendly

1.3 WHY IMPROVE?

Currently tech is only used as a gimmick in stores. In our humble opinion we'd say that customer problems should be the source for solutions. If you look into what problems your customers run into, then you'll get a whole new perspective.

An array of solutions will present itself, look at Amazon Go for instance. Amazon looked into what customers found to be the most annoying thing while shopping. The result of this research was that customers told them they didn't want to queue for ages just for a few groceries.

Amazon fixed that problem completely with their new concept for Amazon Go. This is just one of the many examples that show that customer problems should be addressed in order for a more successful retail experience and store.

**1.4 CONCLUSION:
THE RETAIL EXPERIENCE
THEN VERSUS NOW**

As we've seen both physical and digital retail have their positives and negatives. Stores in this modern day and age are having more and more of a tough time. If a stores policies are vague and employees seem uninformed, shoppers may want to shop elsewhere. If the experience of a store does not appeal to the customers, the store won't receive any. Physical stores will become smaller in size, but the experiences associated with them will become larger than life.

Stores will realise the importance of new emerging values such as awareness, engagement, conversion, fulfillment, loyalty and amplification (which we will discuss in more detail in the next chapter). Stores should enrich our lives, enhance our experiences and make sure our time is well spent.

A new shipment of merchandise, end of season sale, or sporadic discounts on select goods that may or may not be in stock when a person arrives is no longer a measurement for satisfaction. People want clean, design-oriented stores (both the digital and physical versions), friendly and engaging staff, targeted, well balanced product selection and most important, an environment that puts the visitor in the driver's seat, guiding them through their journey; a mapped out experience for every step.

Shoppers have never had such an abundance of choices of online and local stores to buy from, so this is the time for stores and ret-ailers worldwide to either fly or fall.

"If time is the ultimate luxury and people want a higher return on investment of their time, you need to give them a reason to be in a physical space."

- Rachel Shechtman, founder of Story.

CH2

CUSTOMER

FIRST

In the last few years the competition in retail grew enormously. The world is getting crowded, shoppers simply have far more information, more options, more channels and more capabilities at their fingertips. How do you stand out? Retailers must find ways to connect with them through all of that noise. In order to survive, the legacy mindset of 'brands first' must be aligned to the consumer as the starting point.

Ultimately, it's about the people. At least, that's what we've found while talking with experts and doing research on the subject. Relationships matter, and they are based on mutual respect and alignment of values between brands and people - as well as matching needs with fulfilment. As we move from the information economy to the purpose economy, users expect brands to offer more than transactional value: less companies are focusing on providing value and consistency for its users.

Traditional value chain

What do we want to sell?	How do we want to sell it?	Where will it be sold from?	How can we tell the world?	Who will buy from us?	Customer

A lot of retailers are starting with their product, instead of thinking about the benefits of their customer.

Customer experience value chain

Who benefits most from our product?	How does it add value?	How do they prefer to buy?	How can we be where our customer is?	What do we need to make it happen?	Build the business around the customers

But it's about changing the business model to suit your customers.

Retailers often times look to technology or things to improve their stores. The next thing that will most likely happen is that the competition will quickly follow, which leaves no benefit to the bought tech. Companies like Amazon know this doesn't work, and therefore come with their own, new solutions that will change the norm.

That's what the future of retail is all about; What is left if you take away the (sometimes useless) tech? How do you connect with your customers? How can you differentiate yourself in a world filled with technological innovations that are evolving rapidly? Consumers' expectations are raising higher than ever before, and these demands need to be filled. How do you make sure that your store or brand creates that special eco-system in which new, rich experiences are created?

This leads us to believe that retailers also need to wonder about the following; how can you (as a company/store/brand) contribute to the customer's life? What is your role in the customer's life? Retailers need to become a preference instead of an option. How can we change the retail experience to make sure that it's valuable for customers, that's the question.

Focus on customer experience

As the retail landscape continues to shift from transactionally-focused to engaging and experiential spaces, we expect the future stores of retail to be more immersive, disruptive, and personalised:

Immersive - Less focus on transacting with customers by selling products, but instead the focus will beon creating winning brand spaces that customers can be immersed into and share on.

Frictionless - Ease of ordering on the go / from the comfort of one's home will have improved and retailers will need to evolve the in-store experience to make the retailer the brand of choice with frictionless transactions. There will be more portable, flexible formats to arise so a brand can connect with customers wherever they are at.

(Hyper) Personalization - Using the big data gained through the online trends and transactions will also be a focus point of retail design. Stores will increasingly become smarter, anticipating and adapting environments to each customer's needs by utilising data and AI. All of these factors will allow retailers to 'personalise' environments/spaces and make their offer more relevant and timely. Store can provide more personalized and targeted products, services, and content. Marketers would now have the ability to create more meaningful connections with their customers, and drive customer loyalty.

Nike's instore products experiences.

Starbucks employees write names on their cups to create a personal experience.

Fieldresearch

To experience retail firsthand we decided to visit physical stores ourselves. We did field research, and recorded here are our findings and experiences.

Mediamarkt - The Samsung Corner:
Their products are placed in the right setting. It's easy to imagine the product standing or hanging in your own home. This is made easy because there are only a few handpicked products visible, this makes choosing your next purchase much easier.

The thing that wasn't so great here was that the staff didn't really seem interested in helping us. When we wanted to ask them a question, and we walked up to them, they immediately ran for cover.

Mediamarkt - TV section:
There were way too many choices. The whole wall was covered in TV's that were all on and were all screaming for your attention. It was hard to compare specific models, because there were dozens of them. Because we were looking for a specific product, we wanted to ask one of the sales assistants to help us. We walked up to them, but when they caught sight of us, they sprinted away like they'd seen ghosts.

Mediamarkt - The Apple Corner:
When we walked over to this section of the store the sales assistants from this department (and I think you can guess it) ran away. Again! We we wanted to ask a question about a certain Apple product, but we had to walk over to another department of the store to find someone (who had been staring in our direction, probably in fear for human contact) to come and help us out. We got a curt answer and then this person quickly excused himself again. This resulted in us standing there alone again, with even more questions.
Negative. Experience.

Mediamarkt - Kitchen Appliances:
We decided to specifically look at a refrigerator that was available for online purchase in many different colours. We did this because the specific color we were looking for wasn't in store, but there were no sales assistants to help us (surprise). There was, however, a sales assistant making tomato soup of all things. She even asked us if she could help us!

Bijenkorf - Hugo Boss Corner:
We asked for a specific sweater in a specific size (S), but this one wasn't on the rack. We found out it was on a mannequin and decided to ask for that. The sales assistant had to look up online if the size we asked for was in store (it wasn't), and this took ages. They then found out the last one of that size was on the mannequin and told me to "just try on the size L and if you REALLY like it, you can have that one". These sizes are so far apart that it's useless to even try the L size on. A negative experience to say the least.

Bijenkorf - Ted Baker Corner:
After that debacle we went to the Ted Baker corner with a question. We were looking for a bag that would fit a 15 inch laptop. The sales assistant there told us that he couldn't guess if it would fit or not, but we should head to the other side of the store because there were more bags there. We told him we were specifically looking for a bag from this brand. He then shrugged helplessly, pointed at a few bags and wandered off. Once again a bad experience.

Conclusion

Putting a lot of products on display makes it harder for the customer to choose. Making a selection of a few products, and arranging them in a clear and clean way is much more efficient, and helps the decision making process. If you place the products in a setting where you would expect them (e.g. a TV in a living room, a refrigerator in a kitchen, etc.) also helps customers with choosing.

Sales assistants influence the retail experience a lot. You immediately notice if one is trained or not. We noticed that most of the staff walked away from potential customers the first chance they had, and most questions were answered curtly. This makes sure that a potential purchase is cut off right away. When staff does answer questions correctly, and even helps you further than that then making a purchase is much more inviting and also a lot easier. Sales assistants make the difference in retail.

A NEW ERA

The future is closer than you might think. Projects that embody our vision of the future are extremely close to realisation, which most of us don't even realise. These projects focus on combining digital and physical retail in a positive way, so that it will add value to the customer. We'll show you some examples of some projects we think might be interesting for the future of retail.

These projects are the current best practices. We chose only a few because there are a ton of examples around the world, and discussing them all would take too long. The ones we chose are of interest to us; they all have a retail aspect.

3.1 Examples of Current Projects —

AMAZON GO

Amazon's Go concept store is partially-automated, with customers able to purchase products without using a cashier or checkout station.

Amazon's store concept utilizes several technologies, including computer vision, deep learning algorithms, and sensor fusion to automate much of the purchase, checkout, and payment steps associated with a retail transaction.

The store concept is seen as a revolutionary model that relies on the prevalence of smartphones and geofencing technology to streamline the customer experience, as well as supply chain and inventory management.
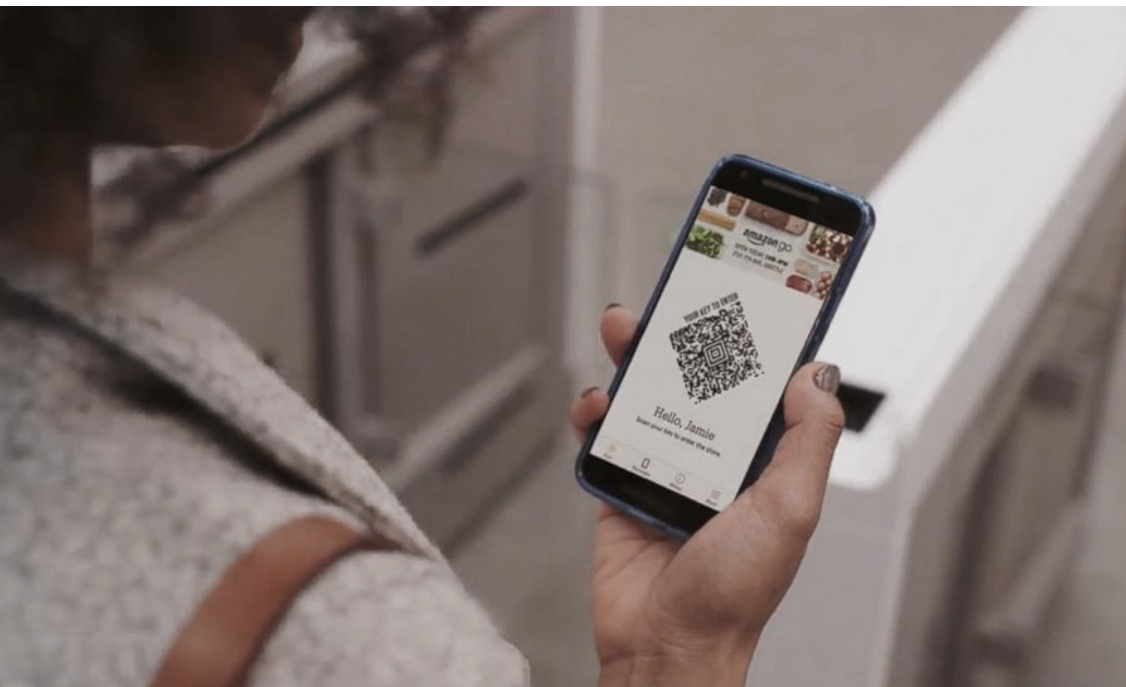
Our opinion

Takes away a single problem, but it's not the ideal solution. More steps can be made in this direction, as it also opens up new problems.

"Long lines at checkout are common at grocery stores. But at Amazon's new cashier-free store, you'll only need to worry about clumps of tourists."

Memory mirrors make it possibile to view your outfit from different angles.

"Shoppers who use fitting rooms, rather than just browse the sales floor, are 70% more likely to make a purchase."
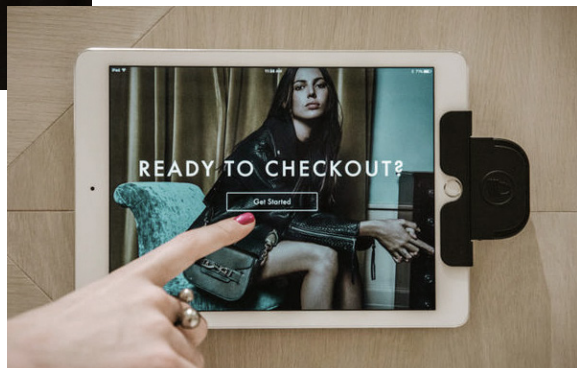
3.1 Examples of Current Projects —

REBECCA MINKOFF

Rebecca Minkoff partnered with eBay to install connected mirrors in fitting rooms. Customers can use these interactive displays to browse and order different styles or sizes. Plus you can use it to get a staff member to bring you a different size if the one you picked out is too big -- quite handy when you're semi-naked in the dressing room. It saves both energy and time.

Our opinion

It's a handy thing to have, but does it add more value to the customer experience? Is it really useful aside from not having to get your own clothes?

3.1 Examples of Current Projects —

TESCO'S VIRTUAL STORES

UK's retail giant Tesco success in Asia, and specifically in South Korea - currently its largest market outside the UK - is based on its ability to adapt to the local consumer.

The virtual stores are set up in public spaces, most often in subways and bus stops with high foot traffic and frequented daily by tech-savvy commuters.

This is how such stores work:
- Interested customers download the Homeplus app into their smart- phones.

- They then use their smart-phones to scan the QR codes of the products they want to purchase. The posters in the virtual stores are designed to resemble the actual aisles and shelves of a regular

- The scanned products are stored in the customers' online shopping basket, who pay online once their order is completed. Homeplus reported that the majority of the orders are placed at 10am and 4pm, when people are commuting to and from work.

- Customers schedule a time for home delivery. Same-day delivery is the norm, so that cust-omers can get their products by the time they get back home from work.

This concept works especially really well in South Korea. South Koreans have amongst the longest working hours in the world, with young, upwardly mobile executives often too busy to go shopping for grocery at a traditional store. Because of the time-efficient way of shopping it creates

Our opinion

This concept helps save time, of course, but does taking away the tactile aspect of retail ultimately help stores?

3.1 Examples of Current Projects —

CONVERSE - CUSTOMIZATION + AR APP

Sometimes, having too many choices does not make our lives easier. Take the variations of Converse available already, and now add to them the customization options at the new Converse flagship store in SoHo, the possibilities are nearly endless. The store offers a full shoe customization studio on the premises, so visitors will be able to customize shoes, t-shirts and bags with over 200 design options.

This is the reason why Converse created The Sampler, an Augmented Reality application, where customers can try on a pair of Converse virtually. You're able to select the materials you picked from the store and put a preview from the customized shoe virtually together. Or simply select a pair that you fancy from their digital catalog and point your phone camera at your right leg. This will show you how the shoe would look like on your feet. Then you're able to shave the shoe, share it with friends or buy it.

Our opinion

This app is a perfect solution for the quick in-and-out some customers might want, but what does it add for the other customers? The border between digital and physical retail is blurred here, and is it what custo-
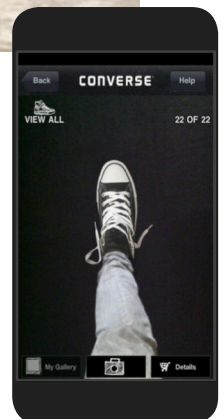
WHAT COMES NEXT?

Next chapter we'll explore different kinds of technology and we'll see what we think will and won't work. We do this in order to see what types of technology we can use to find solutions to the problems we've seen so far.

CH4

EXPLO RING TECH NOLOGY

In order for us to imagine a store of the future, we needed to get a broader and better view on the possibilities that a future store could entrail.

We did this through research on what is possible with technology right now, and what is already being implemented. To narrow down the endless evolving and wide arrange of technology, we decided to select technology that is accessible to us.

We'll look at what the technology is, how it can be applied to retail, and we'll look for cases where said technology has already been applied.

As a conclusion we'll do a few (small) experiments with some tech to get some hands on experience, and we'll discuss how the tech could be applied in the retail sector.

Because of limits in time we decided to only look at a few examples of technology. We feel that the examples that we've chosen are applicable to our project, and thus were interesting for us to look at.

Vision
PROJECTION MAPPING

What is projection mapping?

Projection mapping, also known as spatial augmented reality or simply video mapping, is a projection technology which is used to turn object into a display surface for video projection. This technique is used by artists and advertisers to add extra dimensions, optical illusions and notions of movement onto static objects. The projections can be enriched by adding video, audio and interaction.

How could projection mapping be relevant/applied?

Projection mapping creates a lot of opportunities for flexible ways to highlight products. Instead of having static content and products, having projections gives new opportunities, like adding animations and inter-action to a store. This makes it more interesting for the consumer. Products can be highlighted, show additional information or even give product demonstrations. This can create engagement with the consumer.

Projects / case(s)

Currently project mapping is mostly used on promotion stands and store windows. This could be taken to a whole new level. You could provide customers with specific product information. Which products are gluten free? Where is the specific item they're looking for? But let's not forget that they could then also interact with a product sample.

With project mapping you could match items together, change the color of products, create custom patterns that can be applied on a custom product.

Projections also can be applied to manipulate the experience inside a store. By projecting certain objects, a specific mood can be created.

"Projections also can be applied to manipulate the experience inside a store. By projecting certain objects, a specific mood can be created." - TeamLab.art

Universe of Water Particles, Transcending Boundaries

Own experiences

We decided to use a small beamer and to add a texture to a white block. First we marked the edges of the block by tracing them in Photoshop. Next was to fill these markings with the prefered textures. We've experienced this as a very easy way to change an object and make it more dynamic.

Vision
HOLOGRAPHY

What is holography?

Holography is the practice and science of making holograms. A hologram is typically a photographic recording of a light field. It is used to display a fully three-dimensional image of subject, which is seend without the aid of special glasses or other intermediate optics.

How could holograms be relevant/applied?

Holograms can be used to create magical retail experiences that give a wow-factor to the customer. It can be applied to give special attention to a product, add additional information of give a demonstration of the use of the product. Imagine a virtual assistant that shows you the product and answers questions about it.

Holographic customiser by Farfetch.
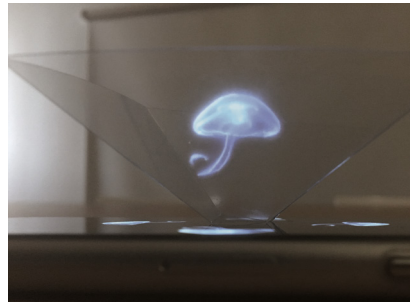
Projects / case(s)

We started with a simple hologram viewer. By tracing and cutting a pattern on a plastic sheet, and folding and sticking it together a pyramid shaped hologram viewer can be made. Next a special hologram video is required. This is a video that shows a object from four different angles. Next the pyramid hologram viewer is placed strategically in the center of the video. The shapes from the video reflect through the plastic and makes the reflections merge in the center. This creates a hologram effect. The only disadvantage of this technique is that it requires the room the be dark.

45

Speech recognition

CONVERSATIONAL INTERFACES

What are conversational interfaces?

A conversational interface could be any user interface that mimics chatting with a real human being. The idea is that instead of communicating with a computer on its own inhuman terms–by clicking on icons and entering syntax-specific commands–you interact with it on yours, by just telling it what to do.

What kind of conversational interfaces are there?

Right now, there are two basic types of conversational interfaces. There are voice assistants, which you talk to, and there are chatbots, which you type to. Chatbots should not be confused with a third "fake" kind of conversational interface: the pseudo-chatbot. The pseudo-chatbot mimics a chatbot in appearance, but it really a traditional point-and-click user interface. It borrows the visuals of a chatbot but don't actually allow you to converse beyond their canned responses.

Relevance of voice assistants

On the voice assistant front, pretty much every major tech company in the mobile space has its own at this point. Apple has Siri, Google has OK Google, Amazon has Echo, Microsoft has Cortana, and so on. All of these voice assistants allow you to do things like play music, do a Wikipedia search, call someone, set a timer, and more–just by speaking.

These voice assistants are especially useful for consumers when they need help in situations while they're busy, like driving a car or cooking. But they can also be really useful for retail. For example, you're trying on clothes in a clothing store. When you're trying on a specific item, you notice that it's too small. You ask store's voice assistant for a bigger size, which gives a notification to the sales assistant, which can bring you the product.

## How can conversational interfaces be applied?

Conversational interfaces can work really well in a retail environment. They should not fully replace the shop assistant, but work as an extension of their service. They should help the shop assistants to do their work in a better way and create a better experience for the customer. Better and more complete product information, shorter waiting times (queues), faster help etc.

Relevance of chatbots

Chatbots can also be implied for a better in-store experience. You could ask the chatbot to order a specific item when out of stock, or a very specific question about a product that you're intended to buy.
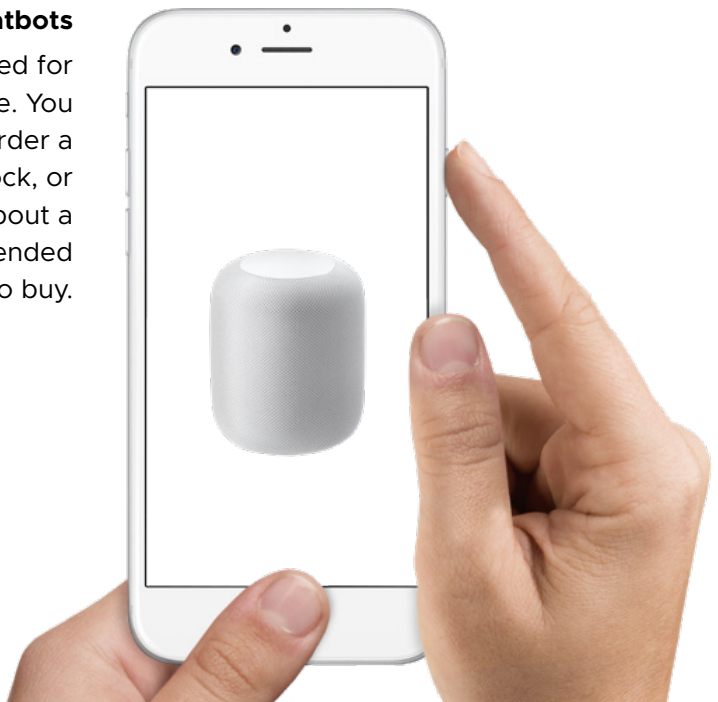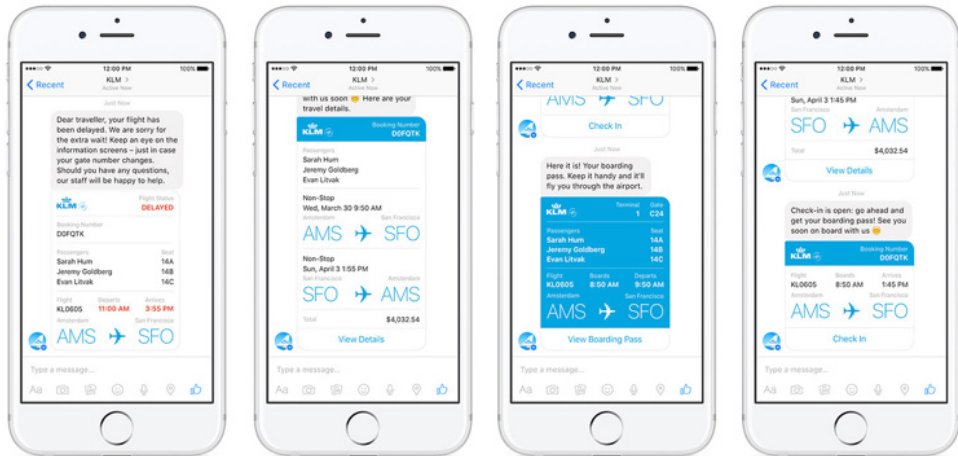
Own experiences

We decided to start with Google DialogFlow, which is online tool to build voice and text-based conversational interfaces. We decided to use this tool, because you don't have to know a lot about code and it supports popular channels like Google Assistant, Amazon Alexa and Facebook.

You need to provide the tool with examples of what a user might say when interacting with your product, and connect them with actions. The tool will use AI to analyze the user's input and respond in the most useful way. It works really well, but it takes a lot of time to provide the tool with the necessary information and connect them to the right actions. For more complicated actions some coding knowledge is required. And it should but possible to use your conversational interface with the Google Assistant app of the Google Home. It didn't work out for us yet.

LEAP MOTION SENSOR

What is a Leap Motion Controller?

The Leap Motion Controller is a small USB device which is designed to be placed in front of a physical desktop. But it can also be mounted onto a virtual reality headset. Using two monochromatic IR cameras and three infrared LEDs, the device observes a roughly hemispherical area, to a distance of about 1 meter.

Making gestures inside this area allows you to control the computer. There is special software required to use a Leap Motion Controllers. This allows you to use custom gestures, but also to control your computer like a regular mouse would.
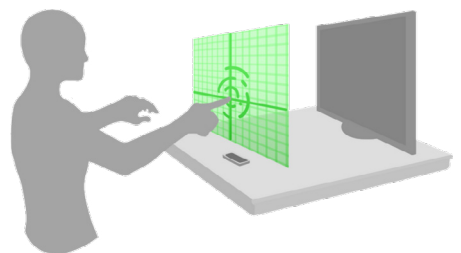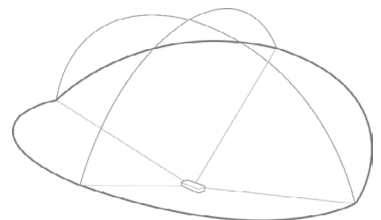
Gesture recognition
KINECT

What is a Kinect?

Kinect is a line om motion sensing input devices that is created by Microsoft for Xbox and Windows PCs. Based around a webcam-style add-on peripheral, it enables users to control and interact with their console/computer without the need for a game controller, through a natural user interface using gestures and spoken commands.

Why can a Leap Motion Controller /Kinect be relevant?

Both the Leap and Kinect can ellevate nice visuals to dynamic interactive content. Content which creates engagement with the customer. It allows the customer to experience your brand, and interact with your product to an whole other level.

How can a Leap Motion Controller /Kinect be applied?

Both motion sensors can be applied into multiple ways. For instance a Leap can be used in combination with an interaction installation. This installations behavior will change based on it's input. The Kinect depth camera can be used to recognize people and make conversational interfaces more personal. And projection mappings can made interactive with one of these sensors so it's able to react to the user.

Own experiences

We started with connecting the Leap to one of our laptops and installing the required software. It worked instantly and we tried out some games that use special gestures. It was a really strange experience, and took some time to get used to it. Then we decided to try it out in combination with a beamer. We tried out multiple interfaces and a 360 degree slider. We think the Leap Motion Controller is a very useful and easy tool to add interaction to our projects. The only negative is that it requires some time to get used to the gestures, which makes it harder for new users to use.

Tactile

OMNIDIRECTIONAL

What is a omnidirectional treadmill?

An omnidirectional treadmill is a mechanical device, similar to a typical treadmill, that allows a person to perform locomotive motion in any direction, allowing for 360 degrees of movement. Omnidirectional treadmills are employed in immersive virtual environment implementations to allow unencumbered movement within the virtual space.

How could a omnidirectional treadmill be relevant /applied for the future of retail?

The omnidirectional treadmill could be a great tool to give the customer a product or brand experience. In combination with VR they could try out a product, see how the product is made or see a product demonstration. The customer has a 360˚ viewing angle and is able to move around in the experience. The advantage of using this technique is that it will create a more engaging experience for the customer, since it will create a full experience if you compare it with a video.

Projects / case(s)
The omnidirectional treadmill hasn't really been applied to retail yet. This doesn't mean that this technique won't be of any use to retail.

Nike
Nike build an instore running simulator with screens and a regular treadmill. If they would upgrade it with an omnidirectional treadmill and a pair of VR glasses this could be transformed into a more immersive experience. The customer could not just only run forward, but move in all different kind of ways. The experience would include a 360˚ environment, which would take the customer completely out of the store and into the product/brand experience. It could also be applied to other sports which require different movements, like tennis.

Storytelling
Another great way this device could be applied would be for storytelling.Nespresso just released a 360˚ video app where customers could see how they make they products. Adding the treadmill would add a new dimension to this experience. Users could actually go and move around at the coffee plantations. This would create a more immersive and engaging experience for the user.

Smart home appliances

INTERNET OF THINGS

All of us enjoy the benefits of modern technology, even if we're not sure how it all works. The internet, car engines, cell phones: none of it makes complete sense, but we've taken hold of this technology and can no longer live without it. The same can be said about our houses. Whether it is microwaves or washing machines, the latest inventions and equipment make our everyday lives easier. But now, with innovative computer software and technological know-how, house designers have taken simple conveniences into new frontiers, creating a fresh model for the future: the smart home.

What are smart homes?
It's just a regular house, except every piece of electrical equipment is hooked up to a computer system. With home automation, you'll no longer be depending on switches or other forms of manual activation. Instead, every light bulb, every TV, and even the thermostat are controlled remotely from a computer database. It sounds like something from Star Trek, but it's actually becoming a popular practice in house design.

What are smart home appliances?
Smart home appliances are specialized equipment programmed to run from a central system. Any domestic device can be a smart appliance, and though they're not cheap, many times they can be leased instead of bought in order to cut down on the price. Plus, they are sometimes hooked up to the manufacturer as well, so when the oven goes on the fritz you can get an immediate notice of the problem and estimate of the repair. The real beauty is that you gain more control but giving up control. In other words, this technology is convenient because smart homes think for themselves.
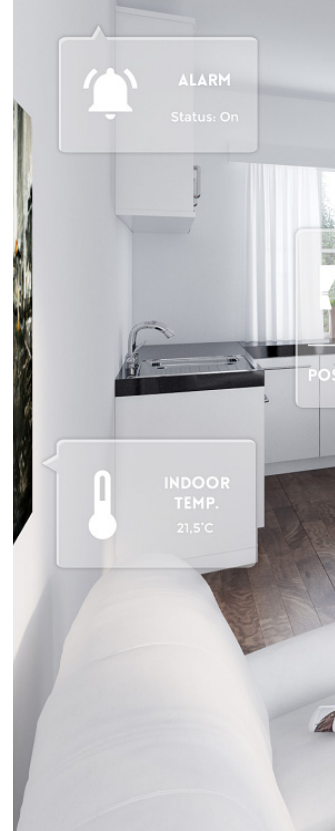
Examples of IoT in retail

Rebecca Minkoff uses tags in their clothing to detect potential thieves inside their stores. The tags give off a notification when a customer walks towards the exit with an unpaid product. The employees use this technology (the RFID tags) as an anti-theft method.

The QueueHop system comes with an RFID (Radio-Frequency Identification Device, like NFC) tag that brings the item up for payment on an iPad and an anti-theft device that only unlocks after that exchange is made. That means there is literally no need to speak to or deal with a sales associate at all if so desired, much like the online shopping experience feels.

Smart home appliances

RADIO FREQUENCY IDENTIFICATION TAGS

Retailers that apply radio frequency identification (RFID) tags to products have more visibility into inventory, which can be useful for omni-channel purchasing—allowing customers to buy products online and pick them up in store. In combination with beacons, retailers could use RFID to correlate tagged products with individual customers who pick them up, yielding insights about who is buying what.

As a retailer, managing inventory isn't always easy. Through technology, you're able to be on the grounds of each of your stores to see what's in stock and what's available for purchase. When your customer goes to your store (and remember, it's all about your customer), she will find that what you said was in stock was actually in stock.

Pros:
- Security
- Faster check-out
- Makes it easier for empoyees
- Easier to manage inventory / stock
- Buy online - pick up in store
  (realtime stock on website)

Vision
VIRTUAL REALITY

What is virtual reality?
Virtual reality (VR) is a computer-simulated reality that simulates a fully artificial environment that does not physically exist. This environment is presented to our senses in a way that we experience it as if we were really there. More commercial VR executions typically consist of a headset and some sort of controller.

VR in the retail sector
The focus in retail is shifting to a more experience based environment. Virtual reality could help retailers tell their story and help them create of emerging experiences. Virtual reality could be implemented in a way that the customer can experience or try out a product, see how a product is made or experience a brand as if they're really there (in a workroom, a store location, a factory, etc.).

The car of your dreams

Car label DS Automobiles presented a VR experience for visitors of a show in Genève. Using the HTC Vive, they simulated a trip to the Place de la Concorde to see their new SUV. It was possible to sit in the virtual version of this car, and to change its colour, decorations and add-ons. This is the car dealership of the future.

The perfect store

There's a lot more science to the layout of a store than you think. From promotions to displays to signs that help the customer to orientate inside a store: every detail counts. There's now a new gadget on the market that is the solution to this very common problem; the Perfect Shelf. It shows realistic 3D simulations, that can also be viewed in VR to design all of these details. This will help retailers to work more efficiently in and around their stores.
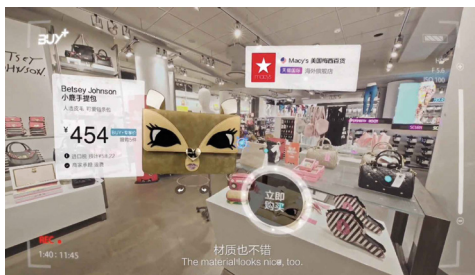
Shopping in virtual reality

Virtual stores are not things of the future anymore. Last year an Australian retailer called Myer and eBay collaborated to open the first virtual warehouse of the world. Even though it was the first of its kind, it wasn't really visually pleasing. A better looking contender would be Alibaba's Buy+. This allowed customers to walk through virtual versions of Macy's and Costco with the use of VR-glasses, see their products and pay directly all in this virtual reality.

Vision

AUGMENTED REALITY

What is augmented reality?
Augmented reality (AR) is a way of viewing the real world with an added layer in which your view of the real world is "augmented" by computer-generated input. This can consist of still images, audio, or video. AR differs from VR in that AR adds layers to a real-world scene, instead of creating something from scratch.
Most (of the newer generations) of smartphones support AR, which makes it very accessible.

AR in the retail sector
Augmented reality could be very useful for retail because of the extra multimedia layers that can be added to a real-world scene. It can provide extra product information, show instructions on using products or create tools that can give a lot of extra value to its customers.

Virtual Interior Design

Virtual- and augmented reality make decorating your space easier and more fun. Take the IKEA Place-app for instance: it lets you place (and buy) furniture from IKEA into your home through your mobile device, all from the comfort of your own home. Retailer Lowe's uses AR in a different manner: some of their stores have so-called "holorooms" built into them where customers can create their the room of their dreams. This is a great way of bringing people to your stores.

A new outfit

Retailers in clothing and apparel are also embracing virtual- and augmented reality. There have been AR dressing rooms and -mirrors for years. Gap presented an app - fittingly called "Dressing Room" - that customers could use to clothe a virtual embodiment of themselves. The North Face isn't far behind either, this brand had their shoppers experience a virtual ride through the snow on the back of a husky sleigh, including a surprise ending.
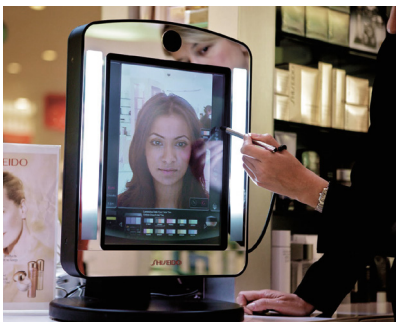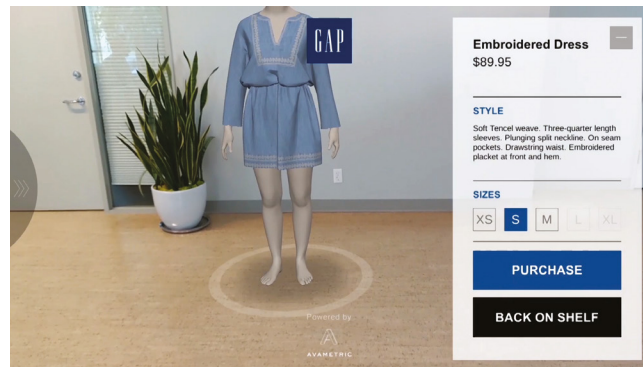
Makeup mirror

Many women struggle to find the right shades of makeup or want to know how things will look before they commit to a purchase. The augmented reality makeup mirror from Shiseido takes an image of a shopper's face, before showing them what the latest cosmetics products will look like on their face.

CH5

DESIGN OF THE FUTURE

Retail stores will become places where we live, work, eat and sleep. So it might be important what those places will look like. This is why design is such a big part of this process. What will the future look like & need? How can we define the purpose of the store? How is the UI design of the future going to be determined?

Furthermore; how can the user experience be an integrated part of every store and how will digital and physical retail actually be combined to achieve this goal? These are all important questions to ask ourselves. Hopefully we'll shed some light on this matter in the following paragraphs.

5.1 The design of the future will be…

Smart

The future of retail will be smart retail – retail should be smart, as in clever (1), and smart, as in good looking (2)."

1) With the use of technology and data, stores can be optimized continuously towards customer-centric experiences and design.

2) Stores must create great experiences, and look extremely good: to attract people, to surprise people and to engage them – every time. Attractive store designs and experiences count for large retailers/retail chains but also for the small retailers. Small retailers should focus on personality, a local touch, authenticity to win customers: a true and unique story from the retailer and around the products and services.

Example: Amazon Books: the collection based on client data – insights gained from Amazon.com, so the assortment is based on what customers are looking for.

5.1 The design of the future will be...
All about product experience

The need is more to show the aura, stories/attitudes possible, and all the possibilities/personalities and options offered by the product and also the way it is conceived and made and what are the values behind the product & its impact on the environment, etc.

People will first enter an "experience", then the product will be presented but very simply, as all the details will be accessible instantly on the web (phones, tablets, glasses, VR masks or even in the clothes on us...) and you will be able to create your own version of the new product every time thanks to these tools.

The presence of all the products will be less compulsory. Only one representative example or a model could be at the centre of the room and it will move and take the "skin" of the exact product you will imagine in real time.

Adidas and Nike

Nike and Adidas, both athletic footwear and apparel manufacturers, are experimenting a lot with their store designs. They're not just shops but they're as much a place for sports enthusiasts to go and play. Their focus is less on their products, but more on the overall experience.

For example, Nike opened a flagship store with an entire basketball half-court with adjustable hoops and digital video screens, an enclosed soccer trial area, a treadmill in front of a jumbotron that simulates outdoor runs, a customization shoe bar where shoppers can fully personalize a pair of Nike Air Force 1s, touch screens embedded into walls everywhere you look, and dedicated coaches on-hand to put customers through their paces as they test out new sneakers – this is a store that brings new meaning the words "experience-driven retail".

Nike has lots of diffeent concept stores. They have one thing in common, their focus is on the brand experience.

5.1 The design of the future will be...

Personalised

Brands will tailor their retail design to you personally, so the offer will be interchangeable, its fast becoming key to teach you about the product and how you specifically will interact with that product as opposed to the generic features of it.
This means retail design has to be very brand led and specific to create moments that are immediately identifiable and attributed to a brand.

Recommendations and personalised offers will be commonplace through the use of interactive boards, there may not even be a need for shops as we know it. Imagine walking into your favourite clothes shop, you stand in front of an interactive monitor that measures you, shows what clothes look like on you and gives you recommendations – all that's left is to order.

There will also be the ability to share purchasing decisions with like-minded peer groups will be super important for customers to get the validation that they require and to maintain that social buzz that shopping provides.

Technology will provide the ultimate enabler and rather than being celebrated will become an expected, discreet integrated component of the shopping experience
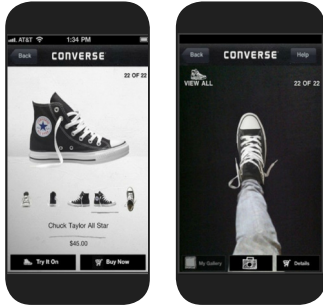
Converse

Converse flagship store in SoHo offers a full shoe customization studio on the premises, so visitors will be able to customize shoes, t-shirts and bags with over 200 design options.

They also developed an Augmented Reality application, where customers can try on a pair of Converse virtually. You're able to select the materials you picked from the store and put a preview from the customized shoe virtually together. Or simply select a pair that you fancy from their digital catalog and point your phone camera at your right leg. This will show you how the shoe would

5.1 The design of the future will be...

More driven on digital design

Shops will increasingly make use of digital technology in their design – but that doesn't mean just plastering walls with huge invasive digital screens. It means using smart digital technology to tell the shopper something they didn't already know.

We would expect retailers in some sectors to change a proportion of their stores into showrooms – stocking a few key items for consumers to try on or try out before purchasing online. This strategy will allow them to cut property costs but still maintain a physical connection with customers. We'd also expect more online retailers to establish a limited physical presence, whether that's through a flagship showroom or through periodically hosting pop-up shops.

Retail spaces will become more informal – both in terms of the decor, the in-store comms and the customer service, whilst offering little incentives such as free coffee will become the norm. Retail stores will become places where we live, work, eat and sleep. With traditional boundaries between, for example, physical & digital and home & office becoming blurred, hierarchy and formality within retailing will fall away.

Nordstrom Local

Nordstrom's new series of "Nordstrom Local" outlets won't even stock products. Instead, they'll house personal stylists for consultations, tailors for alterations, and a "central meeting space" with a juice bar. All the actual stuff is shipped in from elsewhere on request, a way of emphasizing abstract services — finding your personal style, providing a sense of community. Nordstrom labeled the new store design a "neighborhood hub."

Nordstrom is putting service at the core of engagement, these new style stores have a styling suite and eight dressing rooms surrounding a central meeting space where customers can sit comfortably, enjoy a glass of wine or beer, and chat with their Personal Stylists. Customers will also find Alterations & Tailoring and Order Pickup at the entrance, and items can be hand-delivered to a customer's car via the Curbside Pickup service.

Farfetch

Farfetch, a company which connects consumers online with a curated network of boutiques and fashion brands, Store of the Future aims to dramatically improve retail productivity by capturing invaluable customer data and enhancing human interactions between shoppers and sales associates. The concept is also modular, meaning brand and boutique partners can pick and choose the components that make most sense for their businesses. And while Farfetch has developed the core operating system on which Store of the Future runs, the initiative is conceived as a platform, meaning the majority of innovation will ultimately come from third-parties, who build new services on top of it.
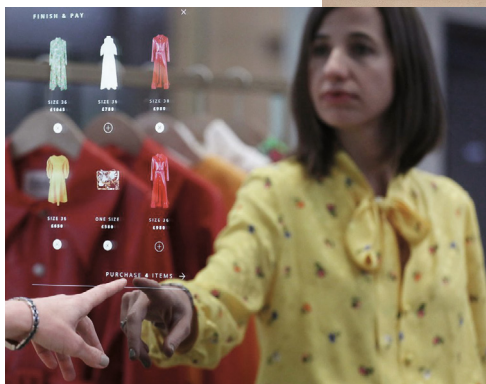
5.1 The design of the future will be...

Meaningful

Retail spaces will be places we can live, eat, sleep and work. The lines between consumer and retail will become more blurred. Humanised experiences will be a luxury, something that can be celebrated in store.

Shoppers will always want to touch, taste, see and feel products and stores will evolve into spaces where brands immerse their audience in a curated and increasingly personalised experience that drives serendipitous shopping behaviour – nudging visitors into 'discovery mode'.

> "We are not just evolving our store design, but its purpose and greater role in the community as we educate and entertain visitors and serve our network of local entrepreneurs"

- Angela Ahrendts, Apple's SVP of retail.

Apple

Apple is a tech company that sells consumer electronics, computer software, and online services. In 2015 it came up with a new minimalist store concept that completely focuses on the products. The product stocks are hidden in drawers that are blending into the walls.

The company chose for light colors, glass, wood and plants. The store has no cash registers or lines, only employees with card readers.

The new stores are designed to emphasize hanging out over shopping, it offers tables and chairs (where small businesses can have meetings and get advice from Apple staff), indoor trees in the new "Genius Grove" and free WiFi -- everything short of coffee service. Outside is a "forum" courtyard with fountain, to be open 24 hours a day and host events such as concerts. The emphasis is on welcoming the community more than selling Apple products (most of which are bought online anyhow).

The new stores are designed to emphasize hanging out over shopping, it offers tables and chairs where small businesses can have meetings and get advice from Apple staff.

CONCLUSION

In the previous chapter you saw a few examples of futuristic stores. In the future the focus of most retail store will be focus less on it's products, but more on the overall experience.

There will be a shift from distribution center to a place where storytelling, discovery, interaction and experience will come together. These attributes will give meaning to it's products, which will be of great value for the customer.

Technology will play a big (supporting) role into the new store designs of the future. It will not be shown prominently, but help cust-omers in an almost invisible immersive way.

5.2 STORE ARCHETYPES

We've been talking about how the store of the future would be, and what characteristics it should have. But there will not be one specific store of the future. This is because it really depends on the brand values and purpose of the store. In a trend report about connected stores (Deloitte, 2018) Hoong and Boermann are speaking about five store archetypes. These five archetypes describe purposes and characteristics of future stores, which could be used as a start to make a store future-proof.

5.2 STORE ARCHETYPES

Experience

Brand experience stores
Persona: 'I want to have fun and be inspired by the brand'
Purposes: Provide branded experience to drive loyalty and advocacy.
Characteristics: Amplify the brand with digital experiences in store playing into all of the human senses.

—

Establish a store as a destination of choice

Expertise related stores
Persona: 'I want to browse, understand the offer and experience a product before I purchase it'
Purposes: To give information, content and confidence before making a purchase decision.
Characteristics: Enable superior in-store service and information provision with digital tools for customer or associate.

—

Recognise customers to offer personalisation in service and suggestions

All-in-one shops
Persona: 'I want to purchase a large number of products as conveniently as possible'
Purposes: Provide customers with an all-round experience and availability to products
Characteristics: Provide all-round experience from inspiration to fulfilment. Wide store assortment and extended (digital) aisle.

Ensure convenience for customer in every shopping trip

Transactional

Category Stands
Persona: 'I'm looking to buy a specific type of product and need to know if they sell it and if the price is decent'
Purposes: Focus attention and sales on a specific product category.
Characteristics: Provide detailed product information regarding specific category, with aligned marketing and merchandising efforts.

——

Optimise availability of locally sought-for goods (e.g. assortment optimisation order-to-store / order-to-home) to ensure relevance of store

Grab-and-go stores
Persona: 'I want to go into the store, get great value deals and get out fast'
Purposes: Instigate opportunism and boost deal conversion.
Characteristics: Enable shopping without associates, with frictionless payments and self-service. Cater to fast shoppers.

——

Maximise traffic and conversion and enable frictionless payment

5.3 SALES ASSISTANT ARCHETYPES

As we've already discussed, staff is an essential part in the customer experience. This is why it's important to look not only at stores, but at their staff too. We've split the staff up into the following three categories;

The Storyteller
Lives the brand store, able to explain brand values and deliver the desired experience.

The Best Friend
Knows you intimately, able to provide personalised advice based on deep understanding of you as a customer.

The Scientist
He or she who knows it all and provides detailed products information and demonstrates intricacies of use.

5.4 PROGRESS OF INTERFACES

What was once considered separate is now blurring together. Websites begin to look more like stores, and stores will implement more and more digital aspects. To get a better idea of what's going to happen in the future, we need to look back at the past. Let's start with a takeback on the development of user interface design.
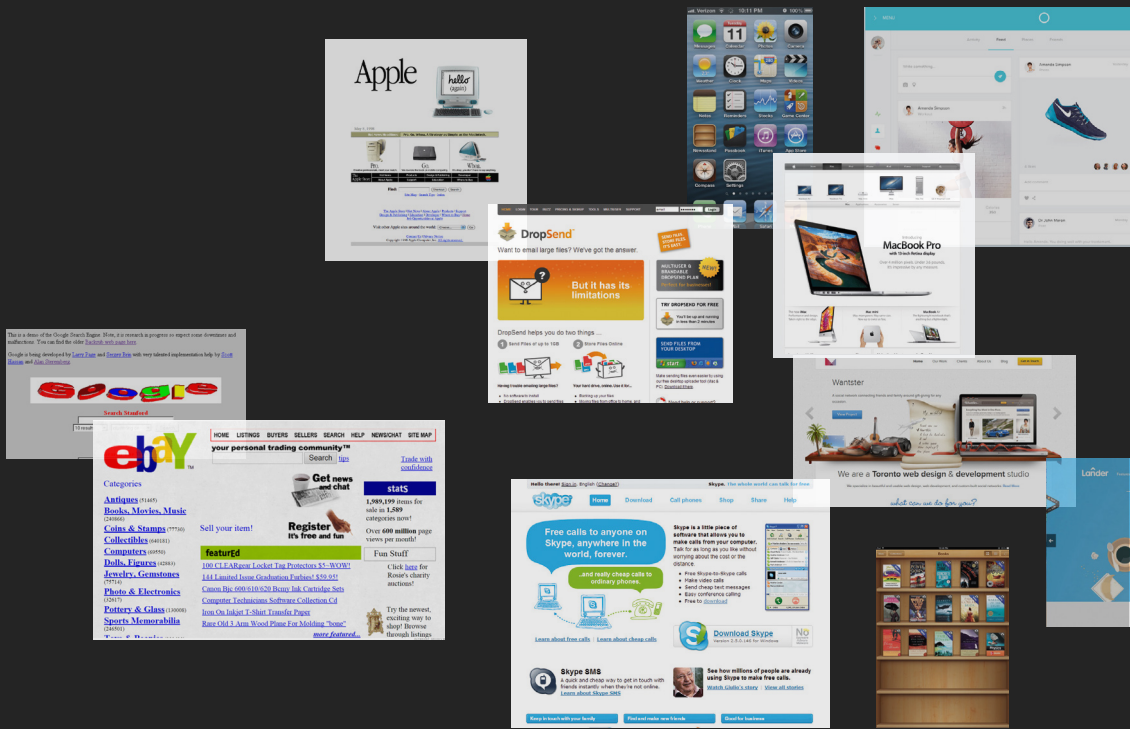
1995   2003   2010   2012
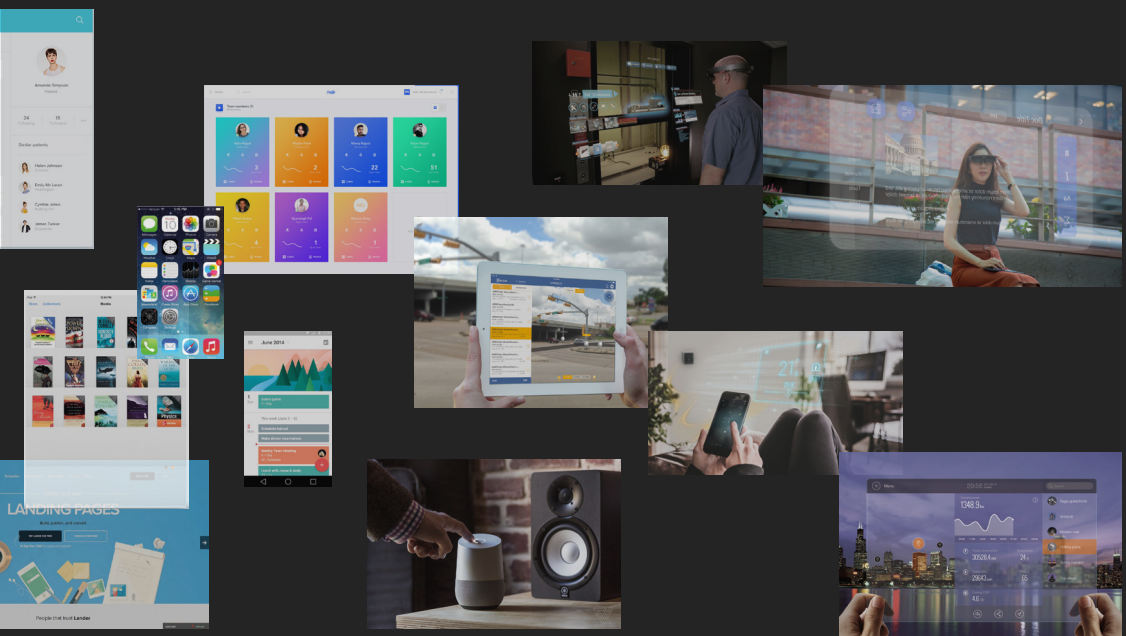
2014　　　　　　　　　Now　　　　　　　　　　　　　　　Future
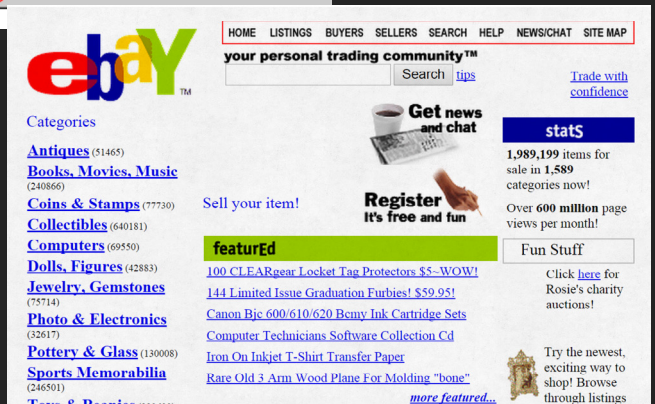
Beginning (1995)

At the beginning of the internet, most websites were simple text-based sites. They were based on the first generation of HTML. The focus of the design was on making menus, buttons and links that looked clickable.

Web 2.0 (2003)

The next big change in design on the internet consisted of lots of effects like drop shadows, shiny bubbles, oversized buttons and glares. As designers felt a growing need to educate web users on how to navigate web content, these design trends allowed web users to familiarize themselves with the internet. The oversized graphics trained us to 'click here' and 'learn more' all the while serving up a feast for our eyes as colour, gradients and graphics tantalised our senses.

Skeuomorphic design (2010)

Skeuomorphism is the practice of incorporating the visual characteristics of an object into a digital design. It involves taking the functional aspects and qualities of an object and recreating them in an ornamental way, with the intention to evoke a feeling of familiarity with an app, widget or tool. Texture, light and colours unite to create a sense of depth and realism.

One of its earliest proponents was Steve Jobs of Apple. The idea was simple; computer interfaces would be much more intuitive to users if skeuomorphic design was applied.

Skeuomorphism helped a generation through the learning curve of coming to grips with a digital era. We became familiar with the concepts as they entered the language and our day-to-day lives but skeuomorphic design led to huge amounts of clutter on the desktop. It brought too many useless details to our computers which we no longer need. There's a whole generation out there now that has never known a world without computing. The visual metaphor isn't really necessary any more.

Flat design (2012)

Flat design is characterised by the elimination of graphical elements that have no value or purpose within a design or user interface. Simplicity is key and elements like gradients, shadows and textures are being avoided. The focus is entirely on the content. The style consists of lots of open space, bright colours, sharp edges and two-dimensional illustrations. All with a strong focus on usability. Removing complex graphics and details means that users have less distraction and can focus on content.
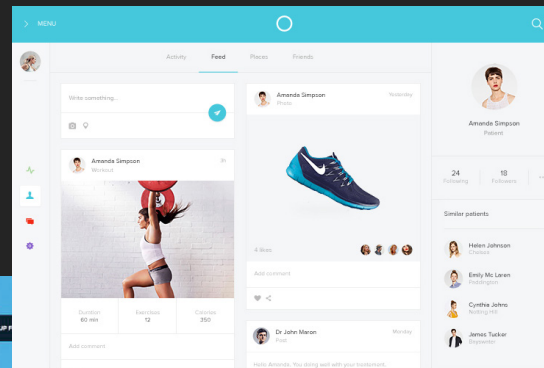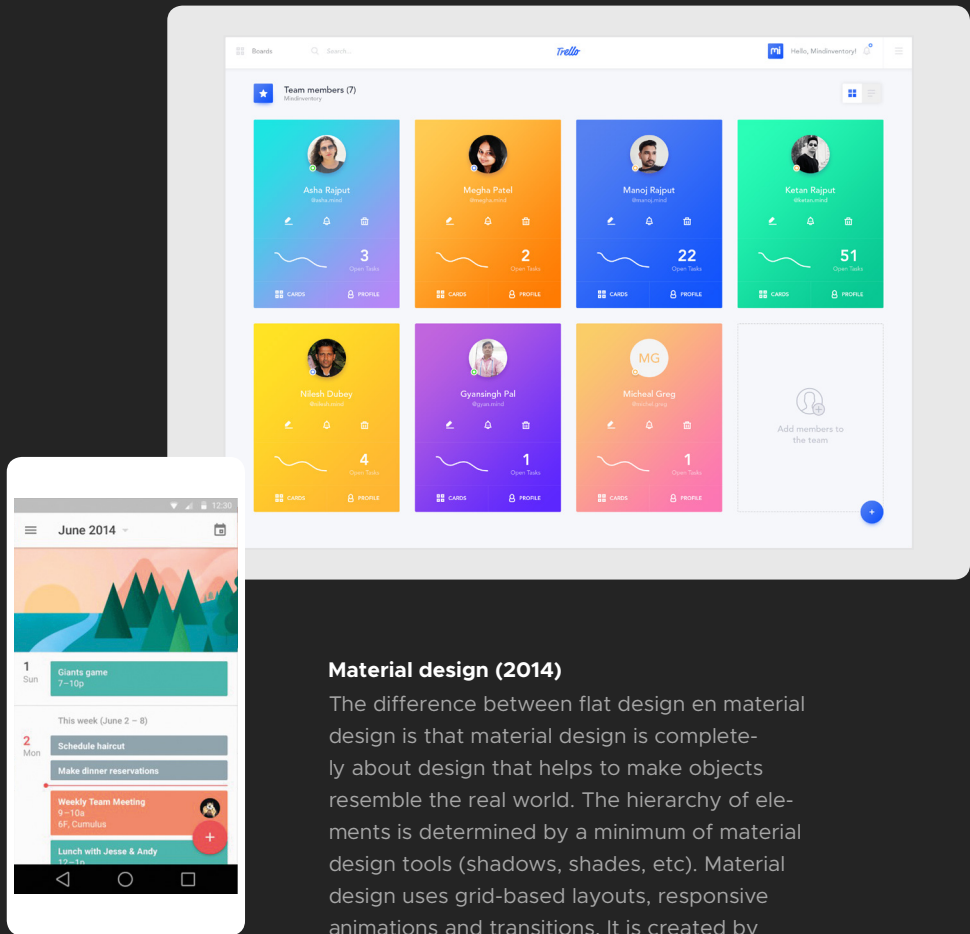
Material design (2014)

The difference between flat design en material design is that material design is completely about design that helps to make objects resemble the real world. The hierarchy of elements is determined by a minimum of material design tools (shadows, shades, etc). Material design uses grid-based layouts, responsive animations and transitions. It is created by Google, who determined a set of rules that can be used for a good design. Google based material design on paper and ink.

Blurring boundaries (now)

User interfaces have become more flexible while new technical developments have been taking place. From just a computer, to a whole set of mobile devices like phones, tablet and smartwatches, some new tools have taken the UI to a new level. Devices have become more powerful, and new tools like Google Glasses and the Microsoft Hololens have been developed. These devices made it possible to connect both the physical and digital world with a technique called augmented reality. With this technique an interface can be placed in the real world. This requires a new way of interface design. Elements are more laid back and flow into the background to let the user focus on the content.

New devices like smart speakers make it questionable if user interfaces are even still required, since you can control devices by voice.
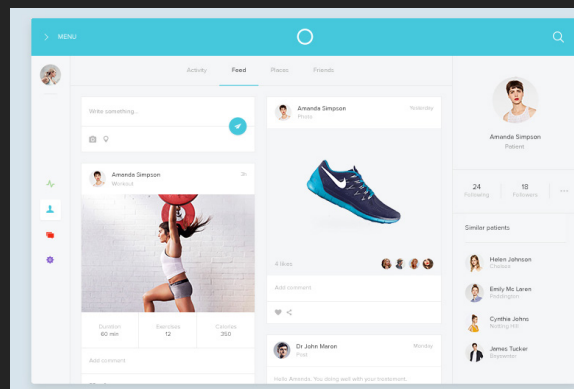
Future

As we've seen with the developments of user interface design we went from basic, to realistic design, and then made a movement to user friendly and flexible minimal design. With this flexibility and new technical developments boundaries between the digital and physical start to blur. We think design will become more minimal and user friendly, and will reach a place where it will almost be unnoticable. This will allow both worlds to connect in a seamless, user friendly experience.

CH6
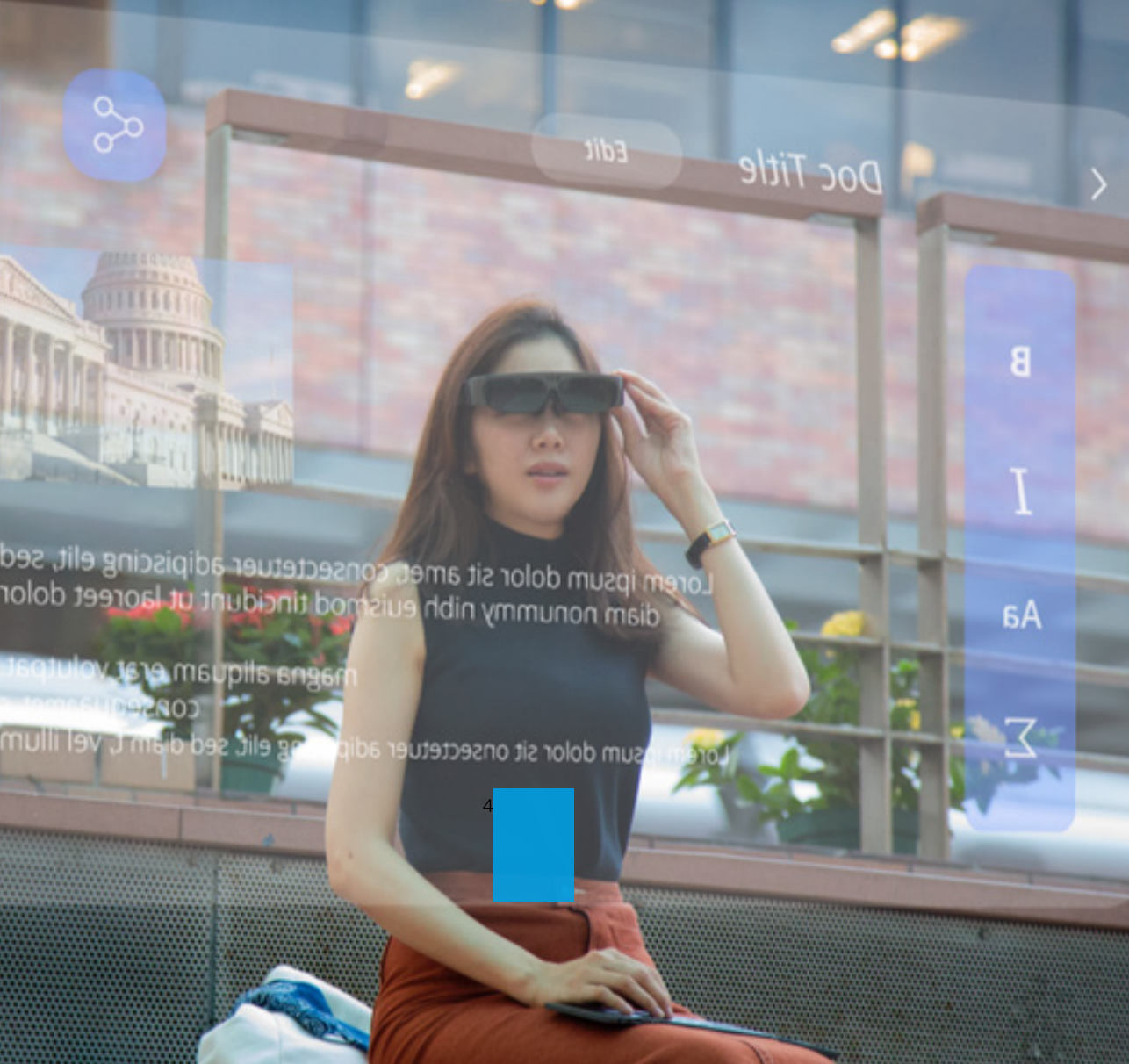
ANTROPOLOGICAL
RESEARCH

To come up with new concepts that add value to the consumer, we decided to do anthropological research. Anthropology (man's doctrine) is a branch within sociology that studies all aspects of mankind.

We chose to observe and interview shoppers on their behaviour in clothing stores. We'll use these interviews and observations to gain new insights, make new connections and to discover obstacles that we can solve.

6.1 CONCLUSIONS INTERVIEWS

Because we had a limited time to do the interviews, we decided to keep it to ten interviews in total. We feel that this is enough for us to see shopping from different perspectives, to gain know-ledge on behaviour and to make conclu-sions based on found obstacles for our project. We'll base our concepts on the conclusions that we'll discuss next.

INTERVIEW 1 - RICK, 20, ZARA, EINDHOVEN:

Findings observations:

- Looked at pretty much all of the clothing racks, only skipped the themed clothing racks that didn't interest him (business).
- Touched a lot of clothing, when there was interest he looked at the tags attached to the clothing.
- Had some struggles finding the different sizes.
- Seemed interested in the more prominently showcased clothing articles. (shirts that are completely visible, clothing on mannequins, items on tables).
- Touched the different materials of the clo-thing quite often.

Findings interview:

- Noticed that there were a lot of products in the store, which created chaos for him.
- The items that were prominently show-cased (for instance on the mannequins) were hard to find or not findable at all. The products are sorted into themes, but the different themes are hard to distin-guish. This makes finding products harder.
- Products ordered by category would be more useful.
- Doesn't want/need direct attention or interaction from/with the staff, only when approached or when in need.
- Checks if the colours of the products fit him by holding the products in front of him. Trying the clothes on is too much of a hassle.
- Prefers to shop online, says it's easier to find (specific) products. Shopping is seen as an activity, he goes shopping for inspira-tion and to try on products like jeans. This doesn't work online.
- Seeing real colours & textures are a plus.
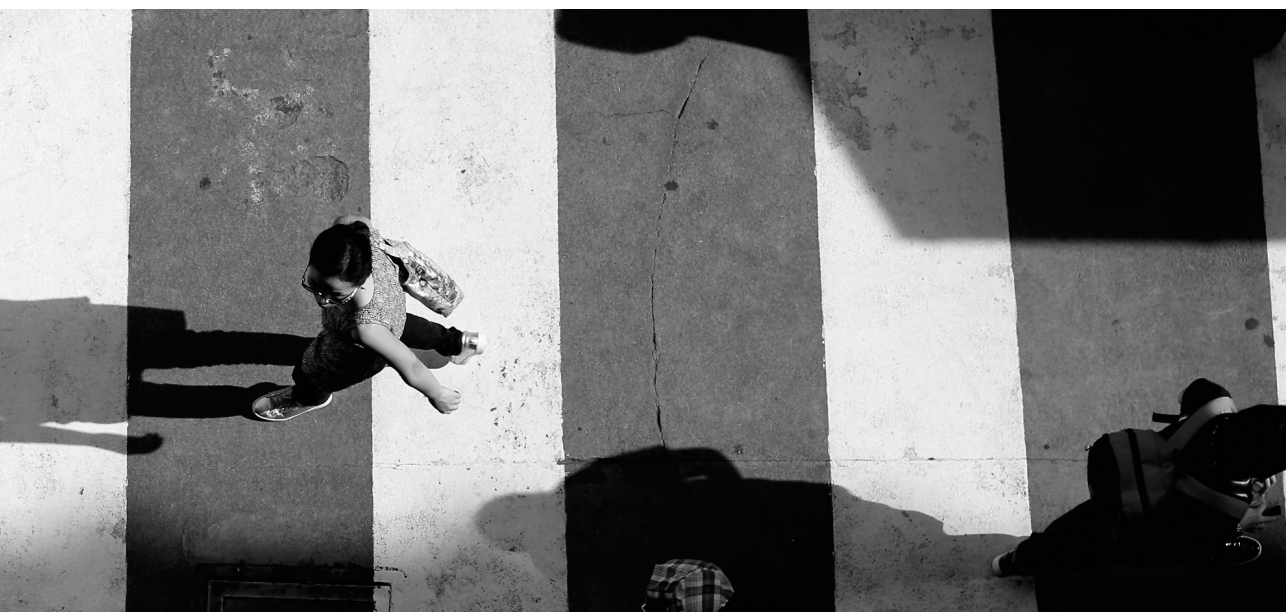
INTERVIEW 2 - ELKE, 22, MEN AT WORK, EINDHOVEN:

Findings observations:

- She followed the direction she was supposed to go (the interior of the store naturally led her around the space).
- The products were arranged in an orderly fashion. This helped her to easily spot the clothing articles she would possibly be interested in.
- Only had some interaction with the products, if she was interested in one she touched it briefly. When she seemed to want a product she took a quick look at the tag attached to it.
- She chooses products based on colours.

Findings interview:

- She didn't want any interactie with the staff, only when looking for a specific size or product.
- She sees going to a brick and mortar store as an activity, and online shopping as a task.
- She shops online because it's faster and because there's a larger stock.
- She prefers a store near to her over an online one.
- She likes it if a store isn't too crowded with products, because she can spot the products she's possibly like faster.
- She recognises the difference between the female and male sections based on colours.

INTERVIEW 3 - ANNE, 21, MONKI, EINDHOVEN:

Findings observations:

- Was looking for a specific product, but didn't ask for help finding it.
- Walked through the whole store and touched a lot of products, but only took a few of them off the rack.
- Anne didn't have a defined route through the store; she walked in random directions (in a general "circle").
- She had a question about a product, and was told by a staff member that the specific product she was looking for wasn't available in the store at that time. The staff member didn't tell her how she could acquire the product, though.

Findings interview:

- A physical store has her preference because she can try the products on and take them home immediately, without having to wait or pay for transportation.
- She would like a system or program that can be used to see all of the available products and sizes in the physical store.
- She only looks at the price of a product when she actually wants to buy or try it on.
- She only goes to the accessories section after trying on products she's picked out, because she doesn't want to walk through the store with them or leave them outside of the dressing rooms because she might have too many items to take in with her.
- She likes the fact that sometimes staff members come up to her and say hi when she walks into the store, but doesn't want to be bothered by them other than that.

INTERVIEW 4 - TWAN, 24, TOMMY HILFIGER, EINDHOVEN:

Findings observations:

- Confused because the different sections were not clearly visible.
- Walked through the store to find a s pecific product. After checking the clothing racks he noticed the touchscreens. He then proceeded to use the screen to find the specific product without prompting.
- Went out of his way to ask the staff for help
- Walked past the clothing racks quickly, only touched a handful of products, but didn't take any products off the racks.
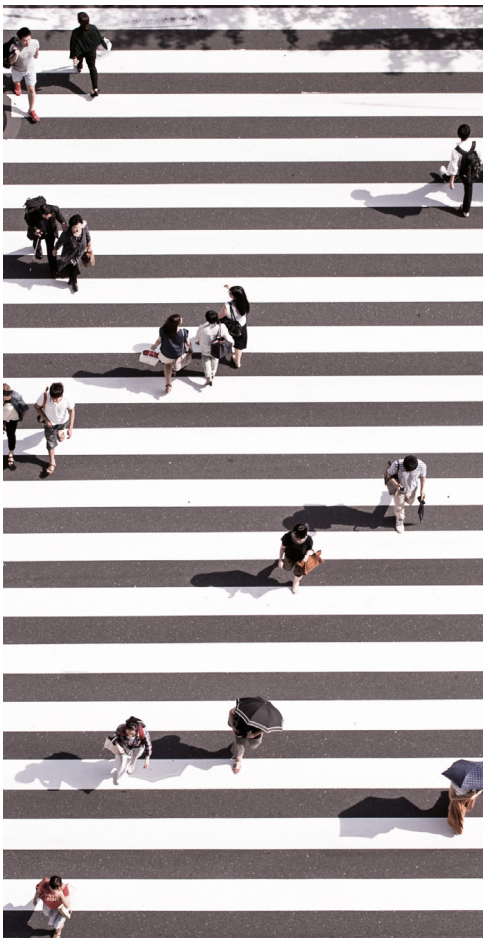
Findings interview:

- Did an online search beforehand, went to the store to try the product on and to find out if the product was his style.
- Got confused because the layout of the store had changed (there had been a renovation recently). Therefore he couldn't find the men's section. He didn't see anything that could have helped him find it.
- The touchscreen was useful to him because he could see the whole assortment of the store. He could show the staff what kind of product he was looking for quickly.
- The product he came to the store for wasn't available, the staff came with an alternative product. He was very pleased they did even though he didn't obtain the product he was looking for in the first place.
- Doesn't like to interact with staff, only if there's no other option left. In this case he couldn't find the product he wanted, and was thankful a staff member helped him out.
- Only saw the different touchscreens in the store after he had looked at all of the clothing racks.
- The store was divided into sections that all had different styles of clothing. It was confusing for him where what was.
- Materials and textures were big points of focus.
- Was missing a few options while using the touchscreen (for instance: having products delivered at home). This resulted in him having to order the product online and therefore there was no use for him going to the physical store to try the specific product on in the first place.
- In this case going to the store was a task for him, but usually going to clothing & apparel stores is seen as an activity.
- Was specifically looking for a product, but he was open to recommendations for other products and to be inspired by the store.

INTERVIEW 5 - MIKE, 53, SALLIE, 51, NIKE STORE, UTRECHT:

Findings observations:

- It seemed they were not really interested in anything specific, apart from Mikes focus on shoes.
- They both still looked around the whole shop. It was as if once they were in they felt they had to look at all the items and see all that was there.
- Weren't really interested in the products. But when a product grabbed their attention, they felt the need to touch / feel the products.
- Mike acted differently in the women's section of the shop, loitering away from the displace. Whereas Sallie was equally engaged for most of the time in the down-stairs section.

Findings interview:

- When into the store to have a look at the products because they recently acquired some Nike vouchers. If they didn't had the vouchers they probably wouldn't have entered the store because they don't relate themselves with the brand.
- They didn't really care for the products, but when Sallie saw a pair of sporty leg-gings, she thought the price was too expensive. Even when having the vouchers.
- Minimal and modern product display; made it easy to browse through product and have a better overview of the assortment.
- Didn't feel the need to interact with the staff.
- They both prefer to go to shops instead of buying their products online.
- Only shop online for specific items or books/cds/stationary.
- Mike sees shopping as a task, Sallie sees it more as an activity.
- Window displays are important to attract them into a store. They prefer clean and tidy displays over dark and seedy.

INTERVIEW 6 - CLAYTON, 31, PRIMARK, EINDHOVEN:

Findings observations:

- Clayton practically saw the whole men's section, but still needed help finding a spe-cific product.
- When he was interested in an article of clothing he would touch it briefly, and so-metimes hold it up in front of him, although he never tried anything on.
- He seems interested in products that he wasn't focussed on buying in the first place, but this doesn't lead him to buy them.
- He found that the sizes on the tags some-times weren't very clear to him, that's why it took longer for him to find the right size that would fit him.

Findings interview:

- He had a lot of interest in a big range of products, but in the end said that he didn't need them.
- He likes to take his time to walk around, and if he needs help he likes to ask for it himself. Like when he can't find a product, size or colour.
- He only buys clothing articles in physical stores and sees this mostly as an activity.
- He likes to touch products, which might be the reason he doesn't like to buy things online.
- Doesn't like trying on clothes, he picks sizes on gut feeling.
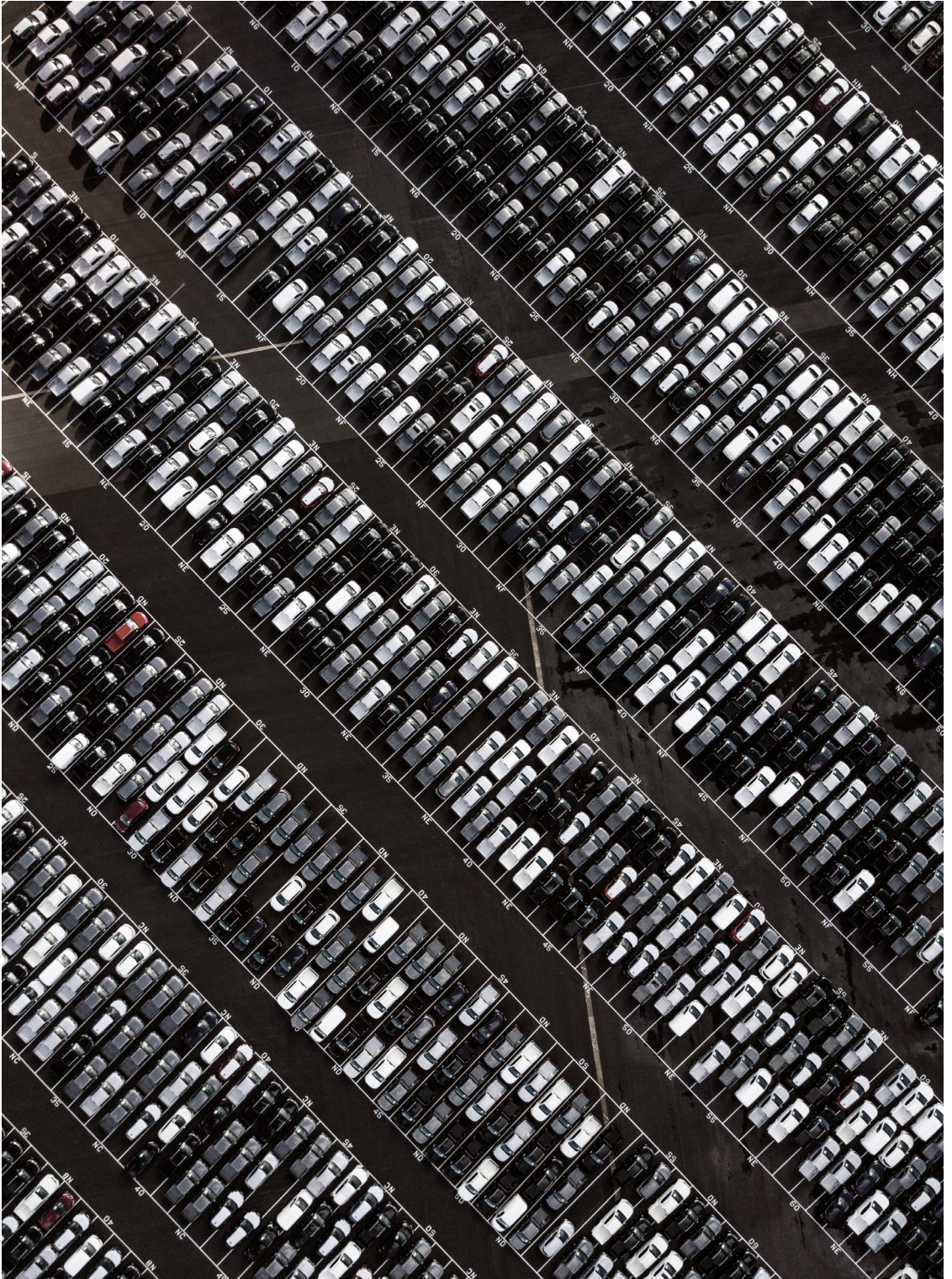
6.2 CONNECTIONS AND PROBLEMS

After doing our interviews, we picked out the most important parts and noticed that in a lot of interviews similar issues came up. We put these connections and problems together into lists, so that we could review them more easily.

Connections:

- Shopping is mostly seen as an Activity

- Online shopping helps with goal oriented searching.

- Clothing is spotted online, then searched for in physical stores (for fitting & buying).

- The tactile aspect (touching the products and textures) to brick & mortar stores is very important.

- The tag was generally only looked at when there was interest for the specific products (for the size & price).

- Too much products create visual chaos. Therefore more products in a smaller space causes the costumer to spend more energy on finding the right items.

- There's no want for interaction with the staff (after the initial greeting), only when there is a specific question that needs to be answered (when looking for a specific product, specific size, etc).

- A clearer distinction between different sections (genders/themes/etc) of the stores will make finding a specific relevant product much easier.

- Customers visually filter products by colour and prints.

- There is interest in a system that can be used to find a specific product in a (clothing) store (much like online searching tools).

- Fitting (and going into fitting rooms) is often seen as an extra step. Customers would rather not try products (unless they're pants, etc). This is caused by small fitting rooms and the often warm temperatures there.

Problems:

- After walking through the whole store, there was still help needed with finding the right product.

- Finding a specific size is hard (because of looking through all of the tags).

OUR VISION

7.1 FROM RESULTS TO CONCEPTS

Based on the previous research we did; the anthropological rese-arch and interviews we did; and the problems that rose up from it, we created new concepts. We combined these concepts with the research we did on technology to come to new iterations and ideas.
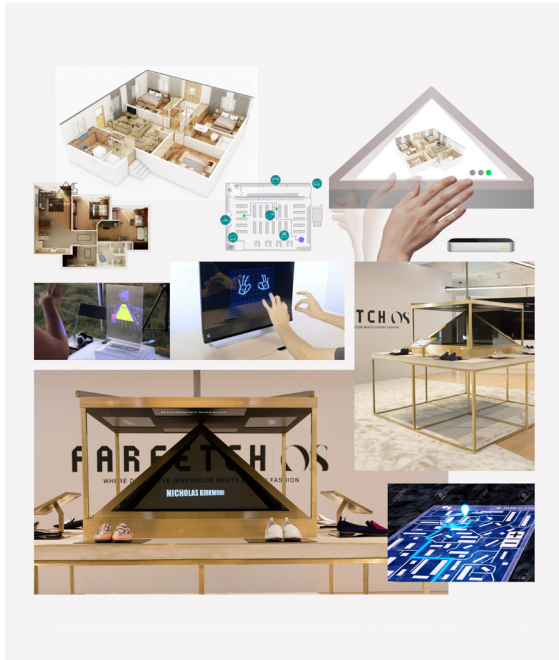
Hologram store map

This concept helps people to have a better overview of an entire store. A 3D model will be shown in the form of a ho-logram. Customers can interact with this hologram with gestures. The hologram has an option to divide the store into sections (depending on interests), show product locations, and even generate routes through the store.

Based on observations we did: A clear overview of a store makes it easier to find a product, without the need to ask a sales assistant. These insights combined with technology like holography and the leap motion controller created this concept.
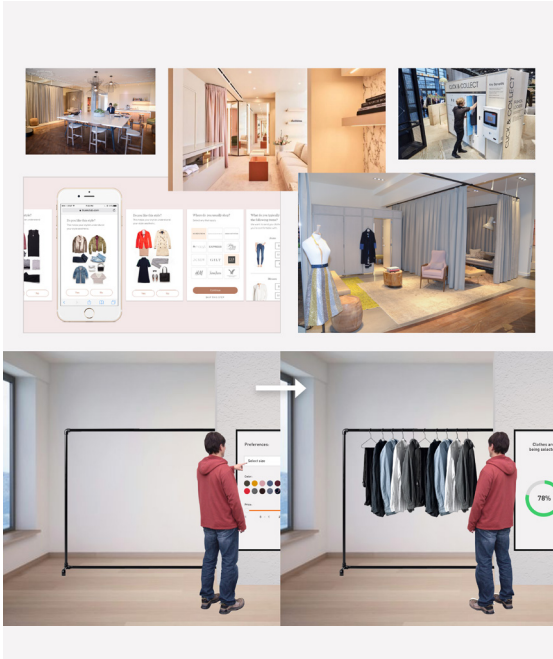
Personalised clothing rack

This is a clothing rack that stocks itself with items based on your preferences. You could say it functions a bit like your own personal stylist. Customers can ask for specific sizes; set a price range; add prefered colours, patterns, styles, occasions; etc. This will make it easier for customers to find products that fit their style and this clothing rack clears the usual visual clutter.

This concept is based on the fact that customers find it hard to find specific products they're looking for, and this can be very frustrating. Online you can usually filter products and immediately get an overview of items you might be interested in. This concept is for retailers that want to implement the usability and accessibility from online stores, and implement that into physical stores.
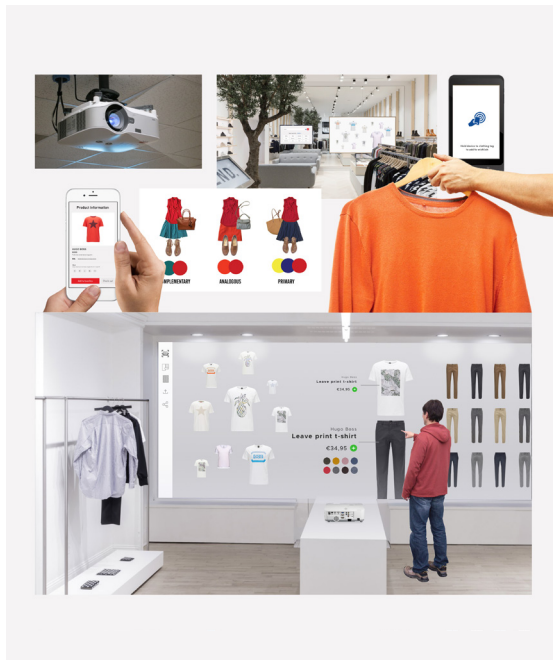
Dreamwall

The dreamwall functions as a sort of favourites page. It displays your favourite products (and ones it thinks you'll like based on those) and combines them into outfits. It will give you extra product information that can't be found in traditional stores, or on most product tags. It could display things like how a specific product is made, what colour options there are for the product, available sizes, similar products, etc. The list goes on and on. The Dreamwall will add a new a fun way to explore the product assortment.

We found that customers search clothing websites for specific articles of clothing, but go into a physical store to try the items on. This is where details like sizes and colour options come in handy, and they shouldn't be hard to find. By using projections and gestures you can mix and match your perfect outfit.

Digital in store stock

Customers will be allowed to look into the real time stock of a store. It will be like looking for items online: you immediately see exactly what the store has to offer.

Customers can buy products online and directly pick them up in the store. It's as if they're shopping online (what they're used to) but with real time stock, and the advantages of a physical store. Customers have the option to reserve a product (perhaps for a small fee), to try it on later and make sure it doesn't get sold before they have a chance to do so.

This concept is about combining the best assets of online shopping and brick-and-mortar stores. A system including RFID technology in tags and a simple website can make this possible.
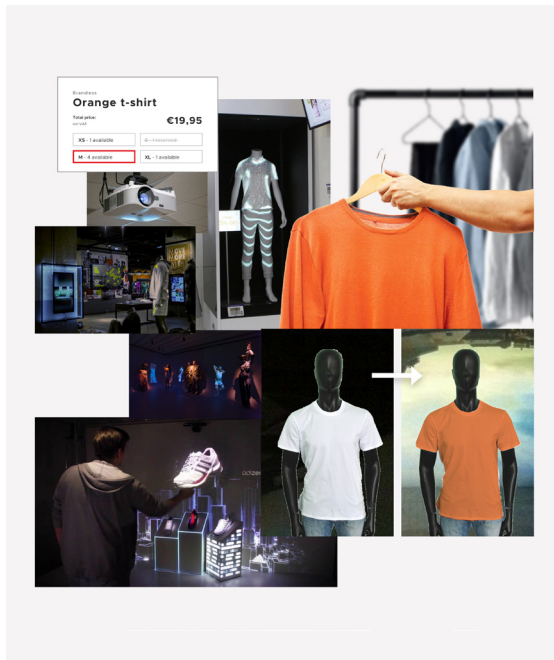
Instore projections

This concept is about creating an experience for customers. They enter a showroom-like space. The clothing racks contains a few items of the assortment, and when these items are picked up from the rack the experience will start. The item(s) will be projected on mannequins and the space will change into the style of the product. Product information like the current price, available colours and sizes will be shown so the customer doesn't have to look for a tag.

We found that when customers are interested in a product, they'll touch it first and then look for the price tag to check the price and size. And if they're not sure about the fit of a clothing item, they'll hold it in front of them to see how it would look when put on. It seems like tags attached to clothes are hard to find, too. By using projection mapping we would show this information to the customer immediately,

Stockroom Drawers

This concept is based on a store divided into two parts, one half is more like a showroom, the other is more like a stockroom.

This concept consists of an interactive closet that shows the contents of its drawers in light-up boxes attached to the front of them. There is a display next to the closet that can be used to interact with it. You can search for products on colour and occasions. This makes it possible to find your favourite items quickly. The light-up drawers will turn on, be dimmer or turn off to show which ones contain specific products based on your import.

Based on observations and furniture stores like IKEA. People like uncluttered stores, and this concept is just for that. It puts all of the available stock into these clothes, that can be used in a way that IKEA uses its stockrooms.
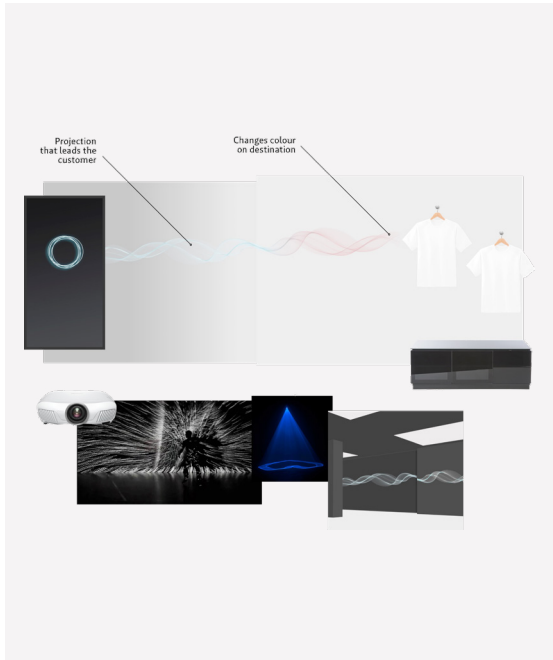
Virtual Assistant

A virtual assistant that helps you with wayfinding, stock insights, suggestions, product descriptions, etc. You can check in with your loyalty card, your user account, or use a guest account. It can help you find the right sizes and lead you anywhere in the store.

This concept was based on observations we did when people interacted with staff. Oftentimes it seemed to be awkward (for both parties involved). When asked about this, customers often replied with something along the lines of "I'd like to be greeted by staff, but I just want to be left alone for the remaining duration of my visit to a clothing store". They also told us that they only have interactions with staff members while asking questions or paying for their picked items. The CURL erases the need for awkward conversations between staff members and customers, and will help a store to be more efficient altogether.

7.2 ABOUT OUR CONCEPT

From the previous iteration of concepts we picked three. We picked them on personal interest and feasibility. When we were sure what three concepts we wanted to go for, we decided to make a total overview of what our final "store" of the future would look like. We combined our concepts with real life best practices which we discussed in chapter 4. A full explanation on our concepts can be found in the next chapter (8. Prototypes).
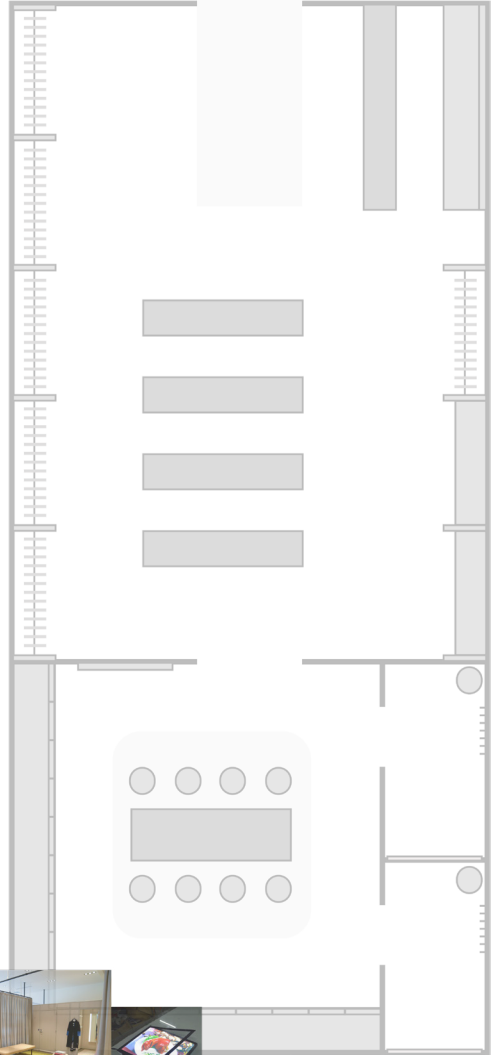
7.2A STORES BASED ON ARCHETYPES

This resulted in us wanting to make an overview of these concepts and best practices. Because we know there is no one store of the future, and because we didn't want to make a static scale model, we decided to make an interactive app. This app contains three different scale models, each of a different archetype! You've already seen the archetypes and what they mean, but we'll be so kind as to remind you of what exactly these archetypes entail.

Traditional store
The customers can experience the products, and will have an easier time finding them. Balance between experience and transaction-based.
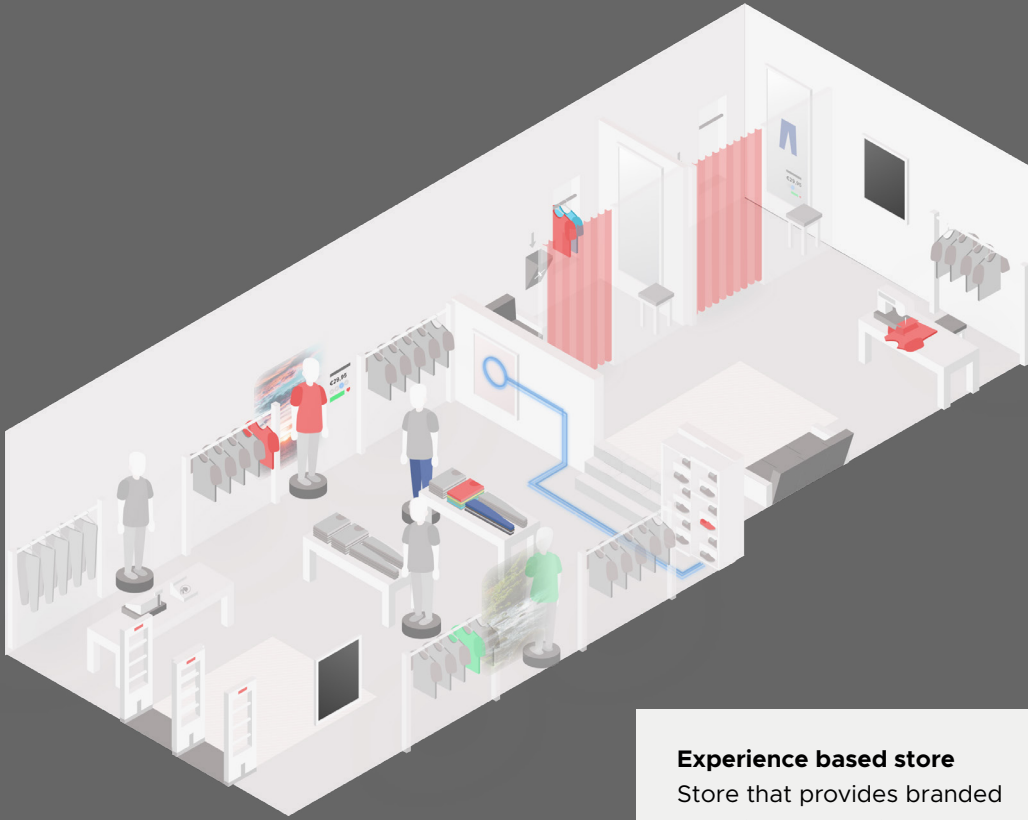
Experience based store
Store that provides branded experiences to drive loyalty and advocacy. Customers want to have fun and want to be inspired.

Transaction based store
For customers that like to go into a store, get some great value deals and get out fast. Payment should be seamless.

7.2B MODULES

We then combined our concepts with the best practises we chose for our scale models, and turned them into so-called "modules". These modules are not just concepts, but projects than can be made in real life for real life retailers. Turning the concepts and best practises into these modules makes it easier to sell them. You won't have to sell the whole store to a client, just the modules they want. In the future the app could also be rearranged to place the modules in different environments. Do you have a client who just needs a little virtual help from the CURL, but also likes the easy grab-and-go principle? That's no problem at all, the modules are flexible and sellable.
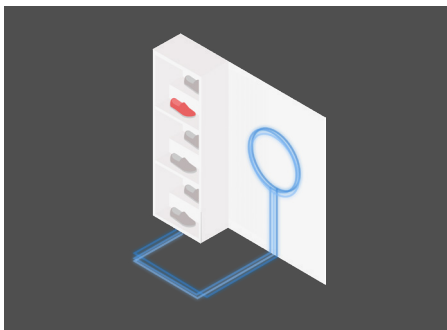
Virtual Assistant
Helps customers with product and wayfinding through projections.

Based on observations and concepts.

Editorial Showroom
When a product is picked-up, it will be projected on a mannequin with additional information.

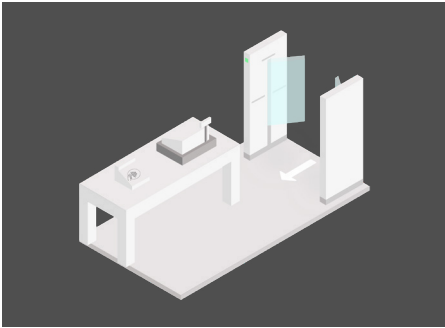*Based on observations and concepts.*

Stockroom Drawers
Stock divided in drawers. Relevant drawers light up for easy access.

Based on observations and concepts.
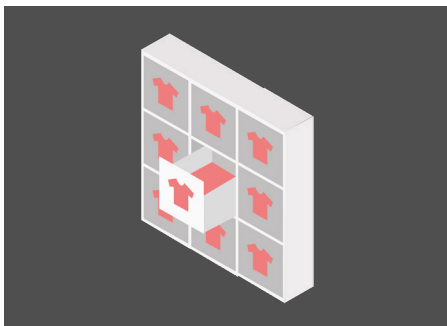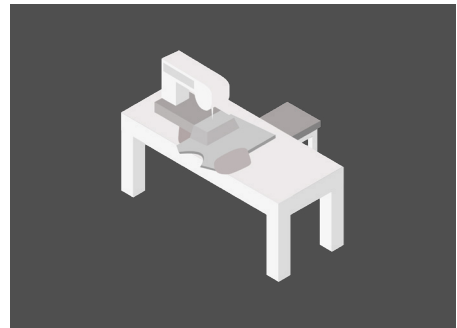
Easy Checkout
Automatic product recognation and check-out when leaving the store.

Based on Amazon Go case, page ...

Custom- and alterations
Instore station that helps customers with personalisation and the fit of the products/clothing.

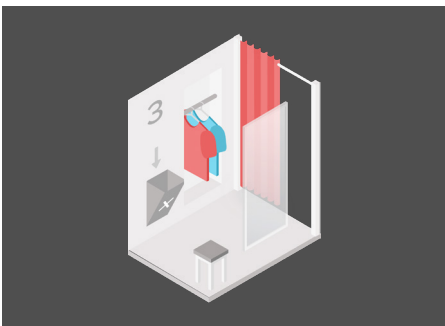*Based on services in High-end stores, page ...*

Click-and-collect
Order online and pick it up at a store with a locker service.

Based on services in High-end stores, page ...

Magic Mirror
Interface in mirror located in the dressing room. Offers usefull functions for clients.

Based on Rebecca Minkoff case, page ...

Dressing room delivery
Relevant clothes will automatically be delivered in the dressing room.
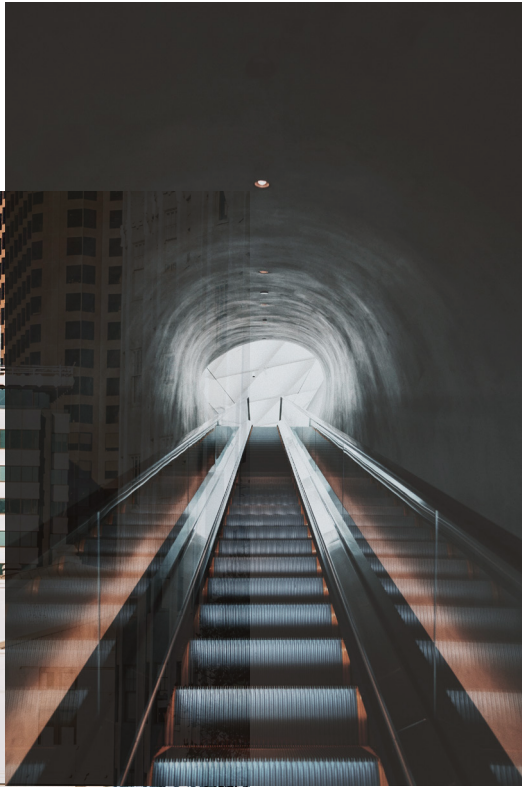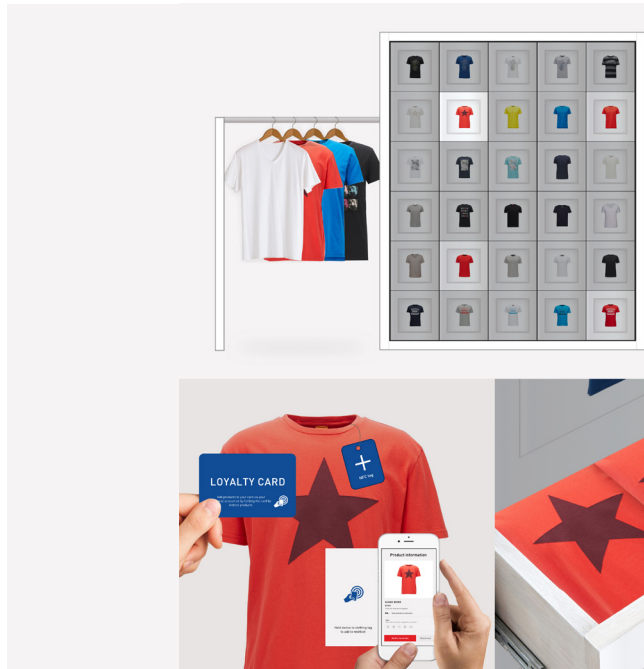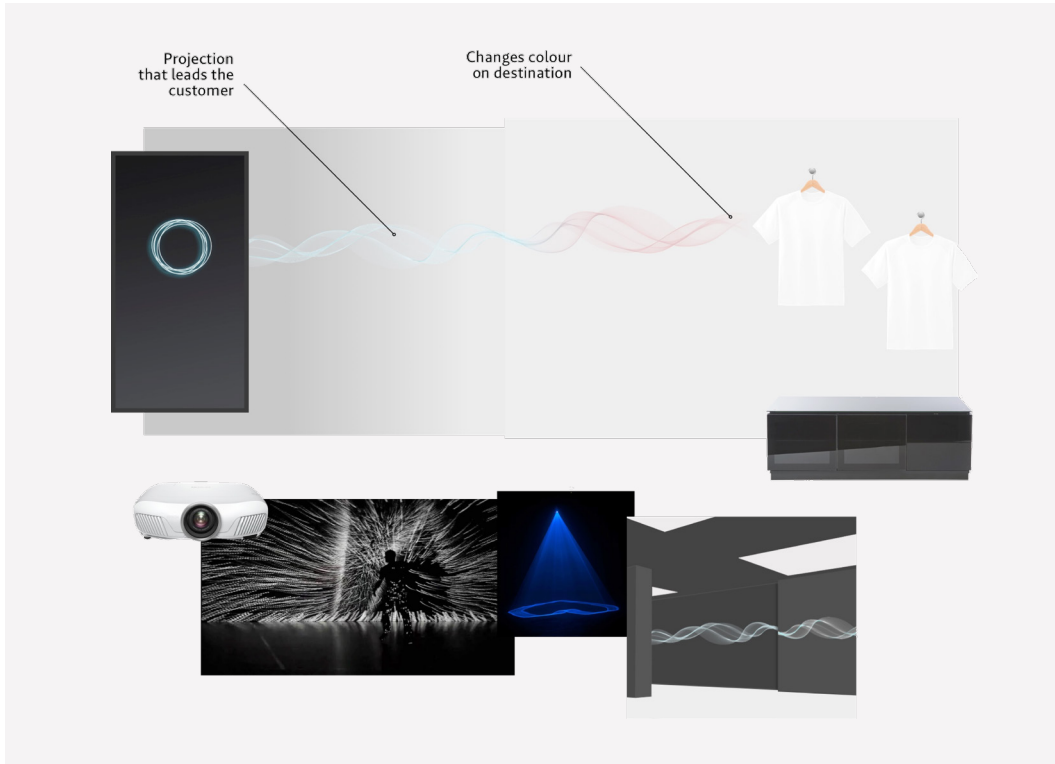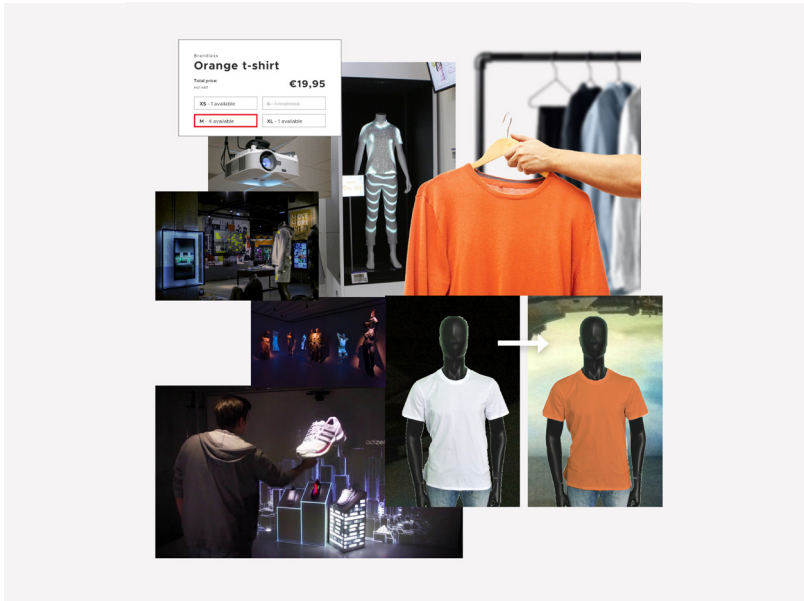
Based on Macy's case, page ...

CH8
PROTOTYPES

Projection that leads the customer

Changes colour on destination

Selected prototypes

In the last chapter we told you that we chose three concepts out of the ones we came up with. We picked them because of their feasibility, cohesiveness and because we thought that the three concepts (that would turn into prototypes) could work together to create a full store-of-the-future experience.

We also picked them because we wanted to have accessible prototypes for the exposition that would take place somewhere in the middle of June. The concepts that we picked are the CURL, am instore virtual assistant; an interactive clothing rack, including a mannequin; and an interactive closet with light-up drawers.
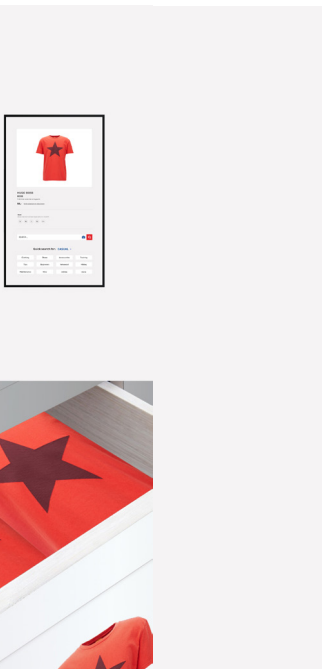
Customer Journey

From these prototypes we created a customer journey. We did this be-cause wanted to visualise how a customer would walk through our version of the store of the future. This also gave us an opportunity to make our concepts/prototypes more detailed and refined.
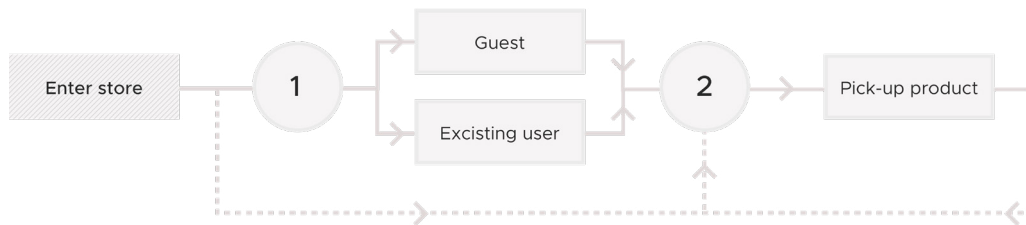
Virtual Assistant / Wayfinding

When entering the store people have the option to use the virtual assistant. You can checkin as a guest of with your account.
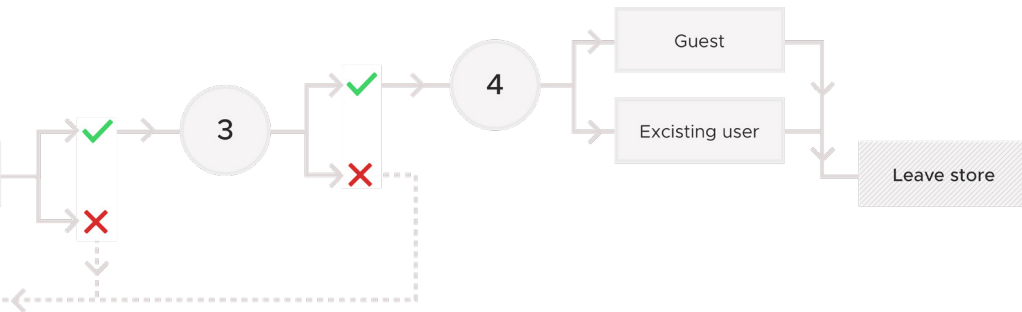
The virtual assistant can:
- Recommand/help you find products
- Make appointments (for fittings)
- Wayfinding

Product assortment

When a product has been picked-up from a rack, a projection of the product will be projected on a mannequin close to it. It will also show an additional pro-jection that fits with the mood/brand of the product.

It will also show additional product information like available (instore) sizing, colour options and the current pricing. It has a function to ask for the virtual assistant to guide you to the stockroom.

3

4

Stockroom

There will be a wall/closet with big drawers that show an image of the containing product. There will be an interface where people can look for products. The drawers will light up and dim based on the results.

The virtual assistant can also show results on this closet when looking for a product.
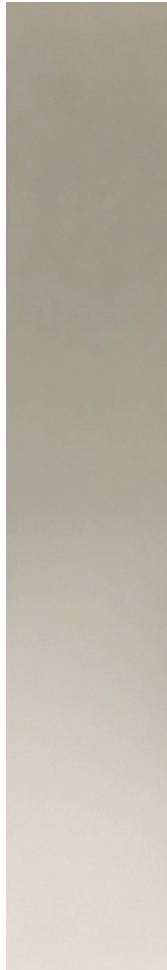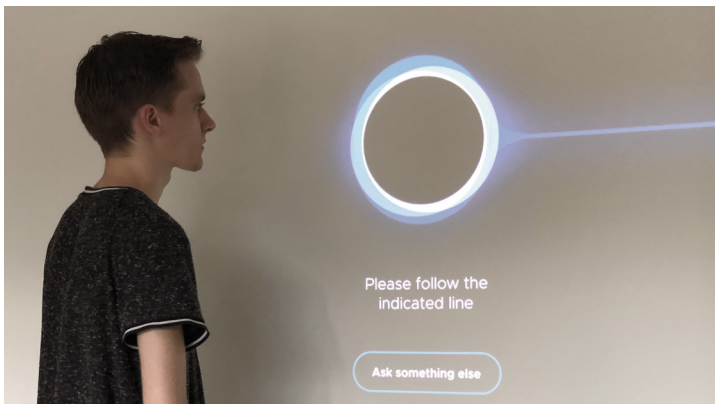
Check-out / Payment

After people decide to buy a product, they can go to the payment station. Guests can make an account and select a payment method. Excisting users can login and have the option to select previous preferences for quick check-out.
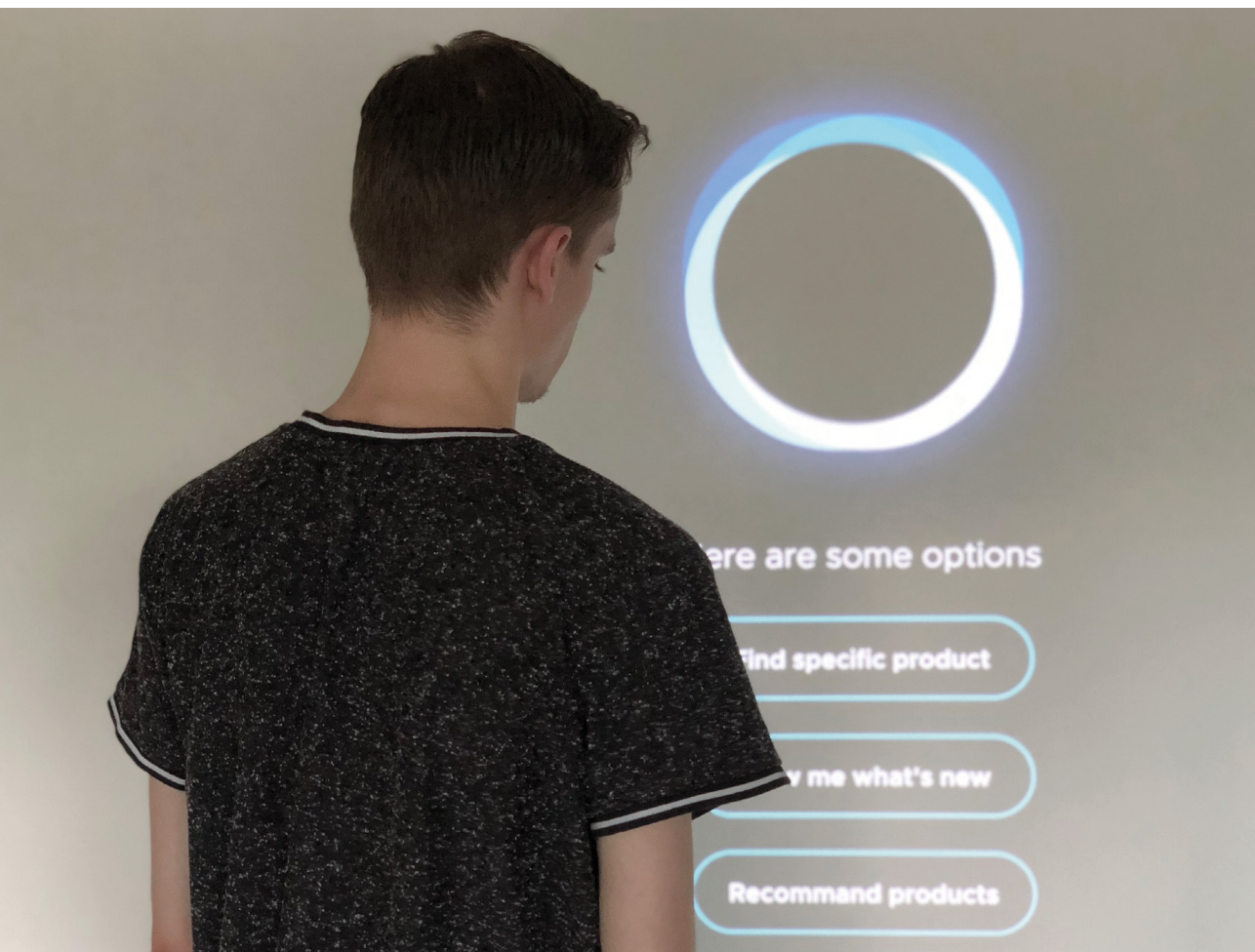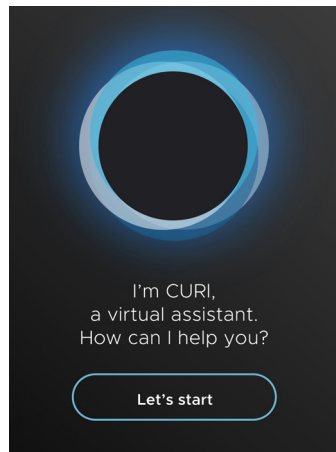
Product info likes sizing, purchase history, etc will be saved into the users account.

VIRTUAL ASSISTANT

This is the CURL. This little virtual assistant helps you with wayfinding, stock insights, suggestions, product descriptions, etc. The CURL (its name; Customer Unit for RetaiL) will make sure that all your needs are fulfilled. You can check in with your loyalty card, your user account, or use a guest account. It can help you find the right sizes and lead you anywhere in the store.

This concept was based on observations we did when people interacted with staff. Oftentimes it seemed to be awkward (for both parties involved). When asked about this, customers often replied with something along the lines of "I'd like to be greeted by staff, but I just want to be left alone for the remaining duration of my visit to a clothing store". They also told us that they only have interactions with staff members while asking questions or paying for their picked items. The CURL erases the need for awkward conversations between staff members and customers, and will help a store to be more efficient altogether.

Please follow the
indicated line

Ask something else

Welcome

Let's start

I'm CURI,
a virtual assistant.
How can I help you?

Let's start

ere are some options

Find specific product
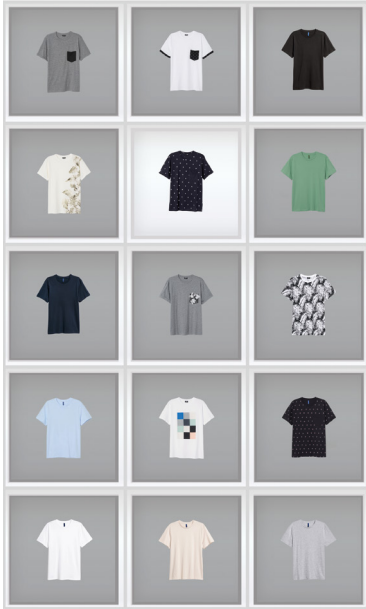
w me what's new

Recommand products

SMART CLOTHING RACK

We did some observations of people in clothing stores we noticed that a lot of customers were spending a long time to look for tags, because they wanted to find either the price or the right size for them. After doing the interviews we understood that this was oftentimes not what customers wanted to spend their time doing.

We took our own observations, mixed them with the results from the interview and from that we created one of our three main concepts. We combined technology with a standard clothing rack, which created an interactive clothing rack that can show information on the items hanging on it. This will result in the customer having to spend less time looking through clothes to find the tags.

STOCKROOM DRAWERS

This concept is based on a store divided into two parts, one half is more like a showroom, the other is more like a stockroom. This concept consists of an interactive closet that shows the contents of its drawers in light-up boxes atta- ched to the front of them. There is a display next to the closet that can be used to interact with it. You can search for products on colour and occasions, but you can also log in with your personal account using your loyalty card or app.

This makes it possible to find your favourite items quickly. The light-up drawers will turn on, be dimmer or turn off to show which ones contain specific products based on your import. Based on observations and furniture stores like IKEA. People like uncluttered stores, and this concept is just for that. It puts all of the available stock into these clothes, that can be used in a way that IKEA uses its stockrooms."

CH9
CONCLUSION
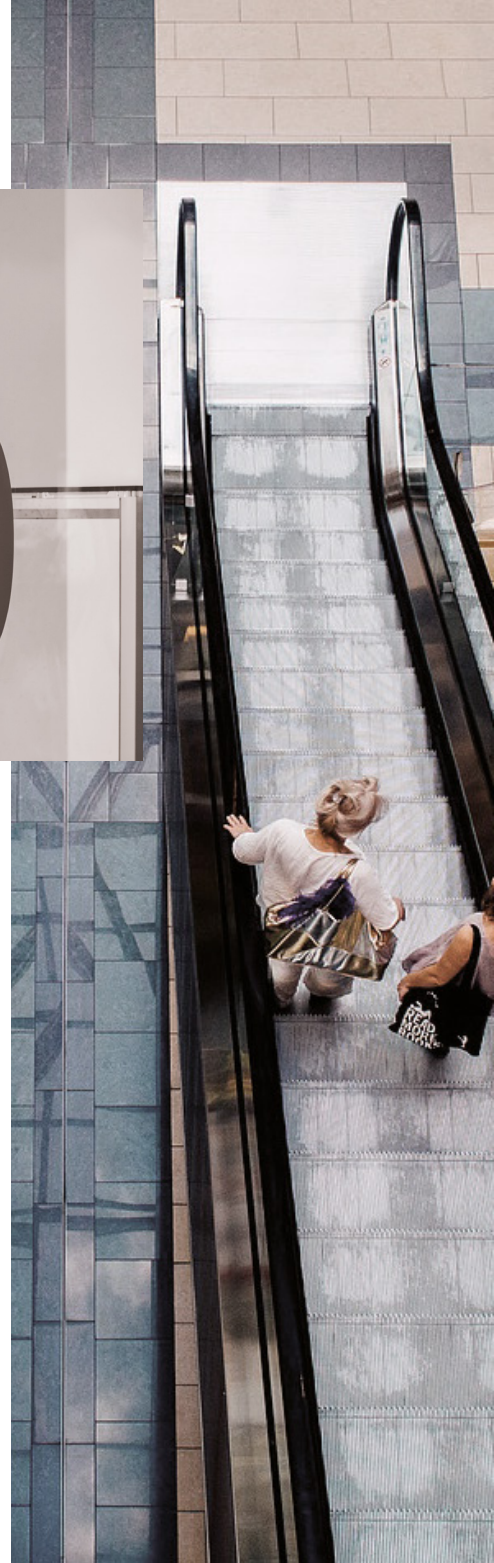
9.1 PROJECT SUMMARY

Let us repeat our research question:
"How can we use (immersive) technology to create a better user experience that also benefits clothing stores in the retail sector?"

We've done extensive research on retail and human behaviour in stores. We used the results and insights we received from this research to create concepts. These concepts will better the experience in a store.

An example of this, is that because we did some observations of people in clothing stores we noticed that a lot of customers were spending a long time to look for tags, because they wanted to find either the price or the right size for them. After doing the interviews we understood that this was oftentimes not what customers wanted to spend their time doing.

We took our own observations, mixed them with the results from the interview and from that we created one of our three main concepts. We combined technology with a standard clothing rack, which created an interactive clothing rack that can show information on the items hanging on it. This will result in the customer having to spend less time looking through clothes to find the tags.

9.2 NEXT STEPS

The next steps for this project would start at getting more budget. This will help to realise the closet into a true physical and working prototype. There would be more room to make steps forward with the clothing rack and the tech around that. It could be better refined and could also use some more sturdiness (because a lot of people would use it every day).

The clothing rack could be refined by putting the resistors we used inside the clothing hangers, or they could be replaced by something like NFC tags. Another part of the clothing rack that could be explored is the background projections when a customer picks up an item. It's now a static image, but could be transformed into a moving gif or video background.

The CURL would also have to be further researched, because it needs to cooperate with the closet and clothing rack like a well oiled machine to enhance the user experience. More options could be given to the CURL, and it could be made more intelligent.

A good next step would also be to place the prototypes inside a real store for testing. Only then will we know if our concepts will enhance the user experience of customers in the retail sector.

After this book is published we will keep ourselves busy with user tests and additional recommendations for the future.

CH10
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