

WHAT?

NEW CONCEPT DEVELOPMENT PROCESS
OF MONOFUNCTIONAL HYBRID WATCHES



UMBERTO ONZA





FOR THE CURIOUS KIND.

“It’s not a Smart Watch”

There are moments when we wish we could stop the time;
Watch Watch helps you capture those precious moments, making them last forever.

Wearing a watch has never been just about keeping the time.
Along with it comes history of craftsmanship, tradition and memories.
A watch used to be "something" you inherit or receive as a gift to
celebrate a special time in your life.

ABSTRACT

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Product designer at TBWA\HELSINKI

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DATE

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Muotoilu

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Teollinen Muotoilu

INSTRUCTORS

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KEYWORDS

**Product & concept development,
Production, What Watch,
hybrid watch.**

This thesis explains a new product and concept development process from the point of view of a junior product designer Umberto Onza who works for TBWA\Helsinki. From the first day he started his career in TBWA, he started to work for a Swiss lifestyle watch brand called What? .What? founded in Spring 2013, who launched its first collection of watches in Brooklyn, New York for the global market in Autumn 2015. The collection received international exposure from various online publications and lifestyle magazines world wide.

The co-founder of What? is a Russian born businessman Igor Basarging, whose hobby and affection for watches sparked the interest of establishing the company. Basarging's vision was to create wearable products that evoke emotions, serve a purpose and appeal to a broad customer base. The "Stop the Time" concept was developed exclusively for What? by Japanese Art and Film director Masashi Kawamura, who has a successful career as a designer in the US, Japan and Europe. He was also listed as FastCompany's "Most creative people 2012" (17).

The "Stop the Time" watch collection consists of four different watch models that are that bridges the gap between the quartz watch and smartwatch making them hybrids. The timepieces use a Swiss quartz movement to show time in a traditional way but the core concept enables the user to stop the time at any meaningful moment making the memories last forever. When the time is stopped by the press of a button, a "memory mark" is created on the E-Paper display watch face. The time stamp is then transferred via Bluetooth on the "What? Now" app, designed for iOS and Android mobile devices. These memories can then be viewed and shared to contacts and on social media.

What? has collaborated with internationally renowned design offices and businesses such as PARTY, TBWA and Ab-Art watches. Manufacturing and the final assembly is made in the province of Shenzhen, China, where manufacturing traditions are well known.

TIIVISTELMÄ

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Opinnäytetyö esittelee konsepti- sekä tuotekehitysprosessin aloittelevan tuotesuunnittelijan Umberto Onzan näkökulmasta, joka on töissä TBWA\Helsingillä. Hänen uransa ensimmäisestä päivästä lähtien hän aloitti projektin TBWA:n uuden asiakkaan, Sveitsiläisen lifestyle brandin What? Watch:n kanssa. What? Watch perustettiin keväällä 2013 ensimmäinen kellomallisto julkaistiin Brooklynissä, New Yorkissa kansainvälisille markkinoille syksyllä 2015. Mallisto on saannut paljon kansainvälistä näkyvyyttä eri nettijulkaisuissa sekä lifestyle ja gadget lehdissä.

What? Watching perustaja on venäläis syntynen Igor Basargin, lakimies ja yrittäjä jonka harrastus ja kiintymys kelloihin sai hänet kiinnostumaan oman kello brandinsa perustamisesta. Hän halusi luoda brandin, joka vetoaa laajaan asiakaskuntaan, herättää tunteita sekä luo ja kehittää uutta. "Stop the Time" konseptin on kehittänyt luova strategisi Masashi Kawamura, joka on luonut menestyneen uran suunnittelijana USA:ssa, Japanissa ja Euroopassa sekä hänet on myös mainittu FastCompanyn "50 luovinta suunnittelijaa" listalla. (17)

"Stop the Time" kellomalliato koostuu neljästä eri kellomallista, jotka ovat kummatkin analogisia sekä mekaanisia rannekelloja rakenteeltaan eli ns. hybridejäkelloja. Kellojen tarkoituksena on esittää aikaa klassisella tavalla Sveitsiläisen Quartz mekaamekanismin avulla mutta ydinkonseptina sen avulla käyttäjä pystyy myös pysäyttämään ajan tärkeinä ja merkityksellisinä hetkinä pelkän napin painalluksella.

Ajan pysäyttäminen luo kellotauluun sijoitettuun E-Paperi näyttöön ns. "aikaleiman", jotka tallentuvat iOS ja Android puhelimiin suunniteltuun sovellukseen Bluetooth 4.0 välityksellä. Näitä muistoja voi sittemmin selata ja jakaa läheisten ja ystävien kanssa What? Now- sovelluksen avulla ja sosiaalisessa mediassa.

What? Watch on tehnyt yhteistyötä konseptin kehittämiseksi kansainvälisesti tunnettujen suunnittelu toimistojen sekä yritysten kanssa kuten PARTY:n, TBWA:n sekä Ab-Art Watch:n kanssa. Kellot ovat suunniteltu tarkkan Sveitsiläisen kellonvalmistusperinteen ja tunteiden mukaan ja niiden materiaalit ovat tarkoin valikoituja. Kellojen valmistus ja loppukokoonpanot tehdään Kiinassa, Shenzhenin maakunnassa, jossa tuotteiden valmistus on tuttua ja ammattitaitoista.

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PROJECT INTRODUCTION



THESIS REPORT

The final project explains the concept development process of "Stop the time" watch collection. What? Watches are a new and innovative watch brand who creates watches which are both mechanical and analog. They all pay tribute to the heritage of classical watchmaking.

The report focuses on describing various scenarios in chronological timeline order and from the point of view of a concept and product designer during product development and manufacturing of watch collection. The report explains the concept development process from throughout the first samples and factory meeting to the beginning of mass production.

All the design process phases in this final report are divided into various chapters from 1 to 6 all explaining detailed information of the particular step during the project.

All the chapters give an overview on how all the stages were performed and executed. They all end with a final outcome of the particular topic

The main focus in this project is on presenting how a new product development process works and what does the whole process contain. This thesis is a personal showcase and not for public use from the wish by the client.

CONCEPT SUMMARY

What if you could save the moments that really matter? What if you could make them last forever? Those were the questions asked by What? for their first collection of timepieces. The idea was to create a watch that will help the user to save and cherish important, personal moments that would eventually turn into memories.

Wristwatches have never been just about keeping the time. They have always been a symbol of craftsmanship and tradition. What timepieces bridges the gap between tradition and technology. The goal was to pair functionality with traditional watchmaking so we created a hybrid watch; a watch with quartz movement and strong digital feature. Something previously unseen with watches.

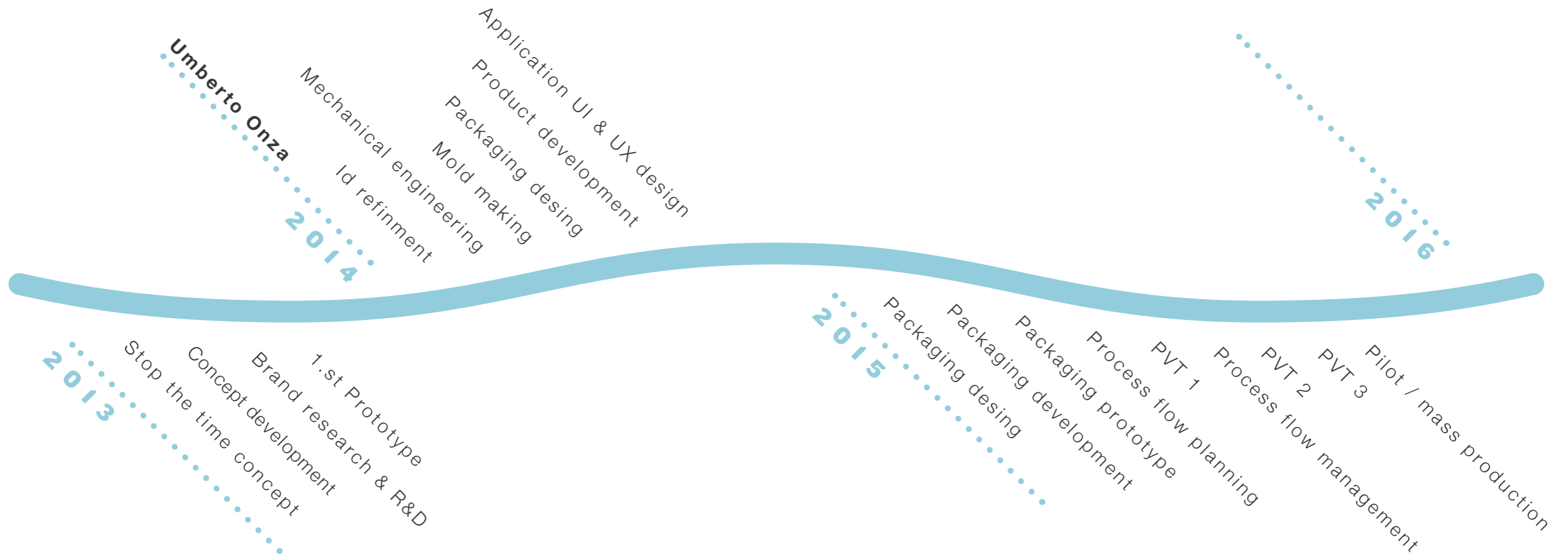
Pressing the signature red button creates a time stamp which is sent to the companion app via Bluetooth. Simultaneously a 'memory mark' is created on an energy saving e-paper display integrated elegantly into the dial. The display helps you remember up to 5 special moments per month on your wrist, leaving your very own moment pattern over time.

TBWA\HELSINKI THE DISRUPTIVE COMPANY

TBWA\Helsinki is Finland's leading marketing agency, whose services include. marketing strategic consultancy and design, brand strategies, marketing, digital marketing productions, social media applications and platforms, as well as marketing in- and outsourcing services. The methodology and philosophy TBWA has orientated is called disruption where traditional models and conventions are always trough the most creative and innovative solutions.

TBWA\Helsinki employs over 100 top experts in the field and is part of the international advertising agency TBWA-chain. Some of TBWA's international clients are Apple, Adidas, Gatorade, ABB and Nissan. Their domestic clients include Neste Oil, Paulig, Fiskars and Atria. (0)

SCOPE OF WORK



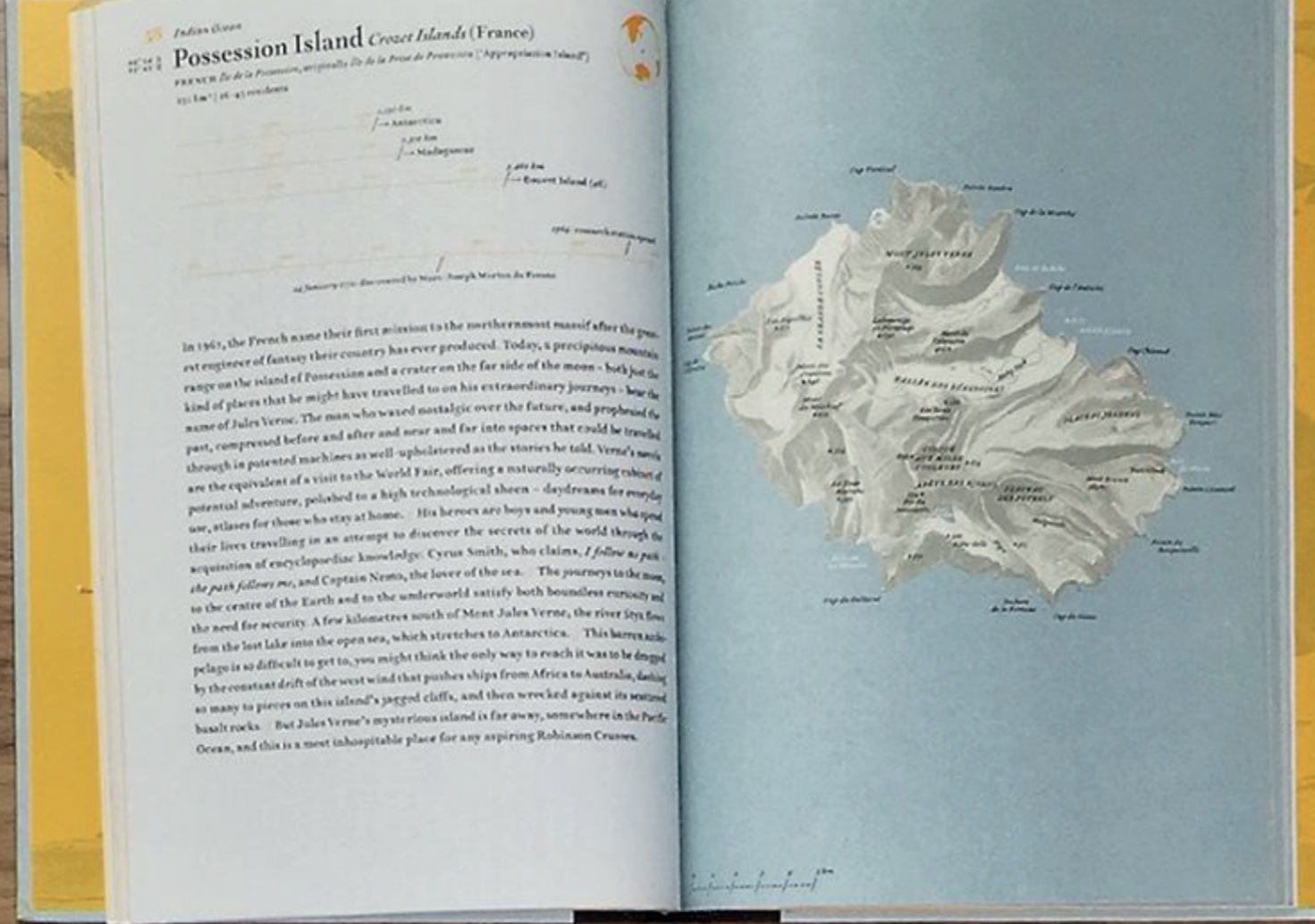
TERMINOLOGY

New product development (NPD): literature emphasises the importance of introducing new products on the market for continuing business success. The NPD process consists of the activities carried out by firms when developing and launching new products. A new product that is introduced on the market evolves over a sequence of stages, beginning with an initial product concept or idea that is evaluated, developed, tested and launched on the market. (1)

Process validation: Product quality in the context of process validation means that product performance is consistent from batch-to-batch and unit-to-unit. It has been divided in three sub categories; process design, process qualification, and continuing process verification. Each of these represent their own verification and evaluation methods to evaluate the efficiency of production processes. (2)

Complication: The term complication is often used in the study of horology. The word refers to any feature in a timepiece beyond the simple movement displaying only the hours and minutes. In the commercial watches complications are example day/date displays, chronographs and alarms no matter are the watches automatic or winding mechanisms. (3)

Process FMEA: Product/design engineers are usually the leaders of the design FMEA team. On the other hand, process FMEA deals with the manufacturing and assembly processes. Process FMEA traditionally begins when the design FMEA report is available. It identifies any potential failures that could be caused by manufacturing/assembly processes, machines, fixtures, and production methods. Process/manufacturing engineers usually lead the process FMEA team. (4)



1 WHAT? WATCH



MANIFESTO

**We are the curious kind.
The innately insatiable.
The ones who feed on an instinctive need to
explore.
We never hesitate, never relent.
We are always searching.
And we can always find another way.
Why? Because we question everything.
We take a second look.
Curiosity has found cures, matched opposi-
tes and stumbled on lost troves.
It sees what's hiding in plain sight, and
knows that everything is open to interpreta-
tion.
Curiosity can't be cured, but it's a welcome
affliction.
Because somewhere, something extraordi-
nary is waiting to be discovered.
And curiosity will find it.
Every last stone will be turned.
Our lives are an ongoing investigation. (05)**



WHAT?WATCH

What?TM is a Swiss lifestyle brand focusing on watches, launched in New York in the Fall 2015. The aim of What? Watches is to create products that are distinctive and interesting. The products will provide both great value for the money and truly meaningful emotional benefits.

What? Watches creates hybrid watches that leverage advanced technology to create mono-function features that focus on simplifying and personalising time. They combine classical watchmaking and modern technology. The watches use Swiss quartz movement, bluetooth 4.0 technology and E-Paper display synchronised with a personal mobile application to enhance the user experience.. Yet, they are not smart-watches.

From Tokyo to Helsinki, Zürich to New York, our global design team serves to reshape the way that What? Watch watchers perceive and interact with time. (06)



CORE TEAM & PARTNERS.

What?

Igor Basargin - CEO, Director of board
Johannes Kisslinger - Chief managing officer
Olga Pirlivenko - Layer & legal assistant

TBWA

Marco Mäkinen - VP of TBWA\Helsinki
Milja Hakala - Project management
Daniel Julier - Product & Industrial design
Umberto Onza - Product & Industrial design
Lauri Käkälä - Product design
Graziano Monteleone - UX & Visual design
Esko Räsänen - Web developer

A.B. Art watches

Francoise Zahn - CEO of A.B. Art

SwissAsia

Peter Leung - Consulting

Andrei Papshev - Electrical engineer
Temmo Pitkänen - Process management
Ilia Pozdov - Firmware engineer

Chipital Oy

Aaron Cheng - CEO of DXG Corp.
Ching-Yan Liu - Project manager
Amy Wang - Projec manager
Alex Yu - Eletcrical engineer
Stephen Lee - Mechanical engineer

DZG Corp.

Peter Lee - Leather strap trader

Banda Strap

Ulla rantanen - Project manager

Quentinel

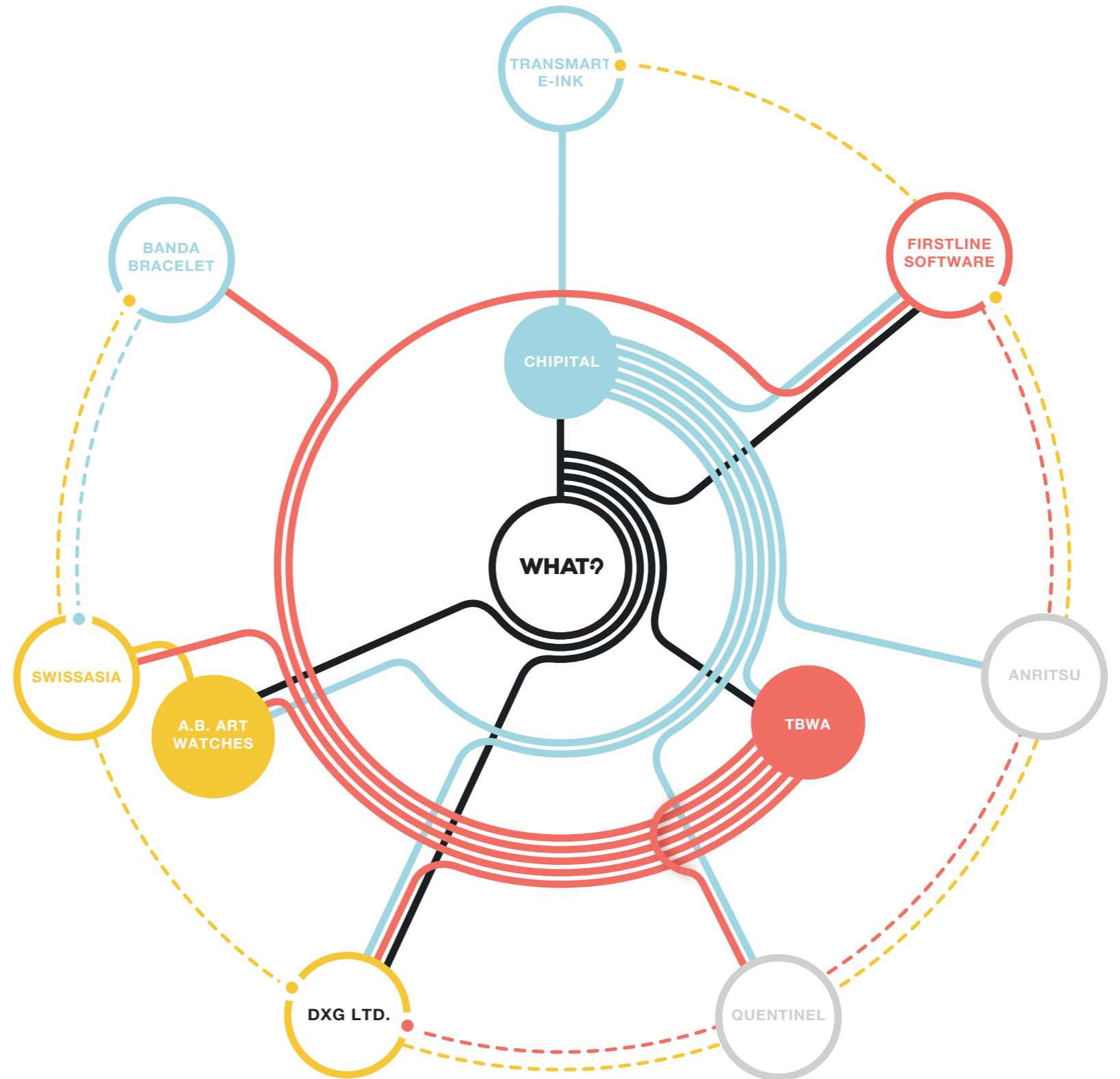
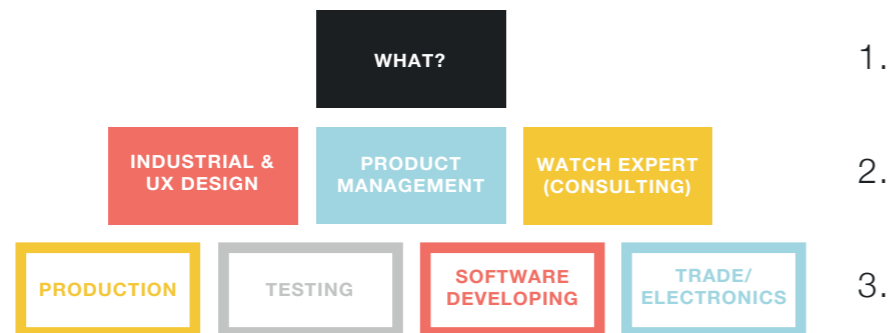
Jimmy Yu - Debuty general manager

Transmart

COMMUNICATIONAL STRUCTURE

The project lived in a three level structure where all the parties worked collaboratively around the main client What? Watch. What? was in the center of all communications and was the final entity of making all important decision related to design, manufacturing and marketing.

The companies at level 2 were all contracted by the client as specialist's. The companies at level 3 were mostly controlled by the companies at level 2, who finally reported all information to the client in the main hub.





2 INSIGHTS

HISTORY OF WRIST WATCHES

Peter Henlein, a master locksmith is believed to be the first inventor of a wearable clock who lived in Nuremberg, Germany from 1485 to 1542. He produced portable mechanical clocks, which were able to run up to 40 hours, whether worn in the belt or as a neck pouch.

Wearing a watch on the wrist seems the most natural location to us now, but it was not always so. Throughout the history of the watch, one sees that its size and form as well as the location in which it was worn was driven by fashion. The first watches were carried in the hand, hung from a belt around the waist, or even worn around the neck.

The wearability of wristwatches became popular during the World War I, which required warfare planning and precise synchronisation between the artillery and soldiers. The soldiers were also able to keep their hands free when checking the time more efficiently. In World War I the development of watches led to improvements like unbreakable glass, luminous dials and various complications to serve each tactical purpose. (07).

MARKET RESEARCH

The market of wristwatches is very fragmented where there is a large variety of different brands from low-end to luxury and niche segments. According to the Digital Luxury Good's statistics from 2013 to 2015 the most well know watch brands are high-end brands such as Rolex and Omega.

Majority of the people do not recognize most of them and the other niche craftsmanship brands for the very wealth, These brands are out of reach for the masses and especially for the young audience. Most of the young audience knows the mainstream brands like Citizen, Seiko and Tissot but they usually find them outdated and too traditional. For them personal, innovative and distinctive watches are more interesting. Younger audience turns into the mass market where they can buy a watch that they want, afford and relate. Swatch, Daniel Wellington and Nixon are examples of watches which have been and are still trendy.

The interest for smartwatches has been increasing rapidly since they offer a completely different user experience among the basic concept of checking time. Technology companies like Apple, Samsung and Asus are the most well know brands in their own sector and are highly dominating the sales of wearable devices. (08).



MILLENNIALS ARE THE NEW BLACK

A.

“Qualitative analysis of 7 men and 3 women. All subjects were in their 20s-30s and employed & living in the NYC area. The folioing report combines qualitative learnings with supplemental 3rd party research”

(09)

THE PERSONA

Who they are

To identify These consumers truly embody the Curious Kind, and some of them will explicitly express that. Now at a quarter-life crossroads, our users are aiming to invest in a prosperous future, but without sacrificing the present. (09)

Self defined style

Style has both personality and life The style of millennials defines how do they perceive themselves and what do they think about themselves. (09)

#hustle

The days of skipping class & sleeping in are past them...now they hardly take a proper lunch break. They wake up early either to go to the gym, read the news, or just get a head start at work. They are hard workers & self-starters by design. They align with brands who exhibit innovative, entrepreneurial, & disruptive behaviour." (09)

3 CONCEPT

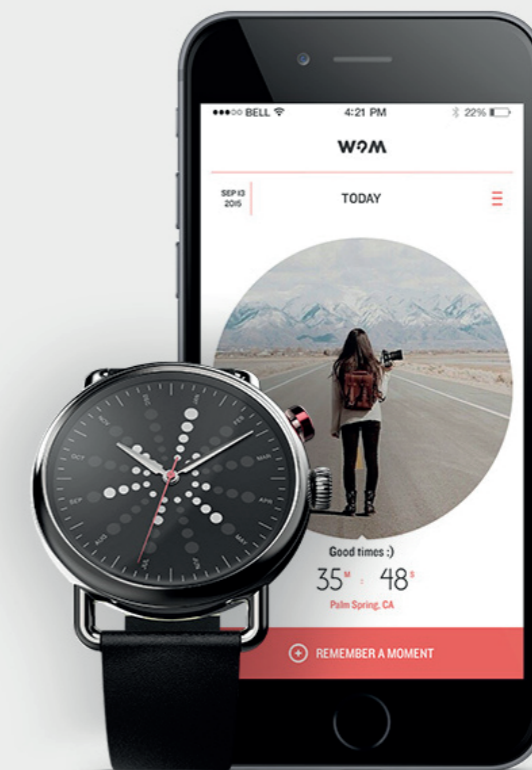


“STOP THE TIME” CONCEPT

What if you could save the moments that matter? What if you could capture that special moment and make it last forever?

The ‘stop the time’ watch collection re-establish the meaning of time, it assists people to cherish and reconnect with important moments that will eventually again turn into memories. What?Watch is all about those memories: stopping the time to preserve a memory.

The timeless design bridges the gap between tradition and technology with simplicity that leaves room for sentiment and emotions. Moments are capture just by with a press of a signature red button which creates a unique memory mark on the watch face. The watch sends the memory mark into the users What? Now mobile app what allows people to get back in time to experience again. What?Watch does not just connect you to your phone, it connects you to your life. (10)



THE EVOLVED IDEA

The original idea of a PARTY was to use watch hands printed in two layers of semi-transparent foil and after pressing the watch “action” button the hands would separate and stop the second layer of hands to the position the time was stopped.

According to the initial concept, the user was supposed to stop the time just once, but during the concept development a decision was made that the user could save five important moments every month. This enabled the design team to built a platform around mobile applications which would enhance the UX experience. (11)

The idea was to present saved timestamps and visualise them on the watch dial. They are always visible at the same time when user glimpse the present time. Various styles of timestamp designs were created and wireframes planned with the intention to succeed to visualise a unique user interaction with the watch.

DIGITAL COMPLICATION - STOPPING TIME

The segmented time stamps in “Stop the time” watches are all custom designed and to represent visually saved moments on the EPD when the red button is pressed. This digital complication on all the models works as the core UI between the user and the device.

Various styles of designs were sketched with the intention of providing this unique user experience work in the simplest way. The selected designs were then prototyped and all evaluated through a point of view of their overall readability, user experience, attractiveness.

The EPD display is based on a dot-matrix technology which it imitates the appearance of an ordinary ink on paper because they reflect light like paper. When the information is transferred on the screen, a blinking refreshing.

The technology used by E-Ink is called "bistable". It reduces the battery consumption significantly and uses battery only when the screen is refreshed.

For example when reading a eReader power is needed when the user turn the page but not when he reads the page. It has a great reading quality and provides the user almost 180 degree view point (4).

Early versions of...



The Classical



The Modern

Technology

The movement or caliber of the Watch? Watches is a Ronda 763 Quartz movement made by Ronda AG. Ronda is a well-known Swiss company and the world leader in manufacturing high quality quartz movements. It has a gold plated EOL and made for all three hands. The standard operating life is 40 months. (12)

All the watches have two batteries for both analog and digital functions. For the digital functions, the battery will last up to a year (Lithium battery cr2032, 3,0 Volt) and years for the analog (Button cell battery 364, 1,55 Volt). Batteries can be changed any watchmaker with proper tools to open and close the back cover.



Low Energy E-Ink display is based on dot matrix technology and consumes proximately 0.5 micro amps per cm² with every screen update. After the updated, the screen stays. Ghosting occur naturally on the EPD but and updated makes the screen still clear. (13) (14)

The red button is connected to an ultra small Omron SMT momentary component which is mounted to the PCB. It has a tactile feel with a bounce time of max 5ms. The travel distance is 0.2+-0.1mm with a operating life of 100,000 cycles/min. All the parts are RoHS compliant and compatible. (15)

4 PRODUCT
DESIGN





DESIGN INSPIRATION

Brooklyn - Williamsburg, New York

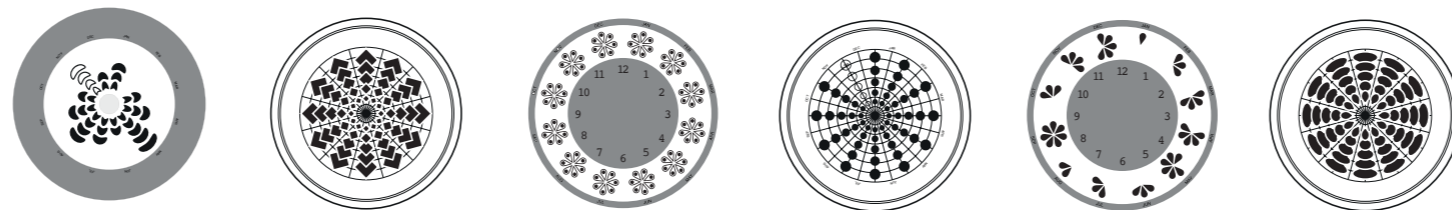
The millennials, hipster culture

DESIGN CHALLENGES

Since it was aimed to make the user experience simple and straight forward, our main design challenge was how to have modern technology to work and look in a traditional manner so that the UI, design and all its functions are frictionless. Testing of multiple user scenarios and various options of display and other technologies were analysed and specified by our team before the let our vendors to plan both hardware and firmware.

The work started by studying hundreds of timepieces to understand the actual concept of wrist watches, what identifies the brand, their users and eventually the product design. We noticed that the main feature which distinguishes the wrist watch from another is the dial where features and details like complications, revolving hands and colors define the identity of the timepiece. It was evident that to nurture the concept from the large variety of other watch brands was to put a lot of design emphasis into the watch dial and its ‘digital compliment’, not only making the aesthetics of the watch appealing.

The design of the watch was aimed for the end user to see time stamps on the watch face where they would be always visible. We analysed hundreds of different designs and tested user scenarios how the end user would perceive the time stamps just with a glimpse towards the watch face. Since the watches were between 41,5mm and 43mm the space on the watch face was limited. The goal was to present all twelve hour index, months and five timestamps for each month. We succeeded to present the time stamps in a clear way placing them in between the every hour index.



Early designs of the E-Ink displays

DESIGN PROCESS

The design process was based on a funnel process which is a traditional design process where the designer starts with multiple design options and during the development the best ones are selected for further development. The lead designer product designer Daniel Julier created a lot of various watch and concept designs which were then reduced into a few high-potential designs that were ultimately produced and launched into the markets.

The process we adopted during initial product design phase contained idea generation, design development and finally selection of the final designs. The final designs were presented to What? who eventually made the last decision which design options were later to be produced.

After approval, we started creating 3D models and detailed visualisations of each watch which was then presented to DXG Corp, in Shenzhen China who were selected to be our watch manufacturer. After the manufacturing agreement, DXG's engineer started to create manufacturing holds and tooling according to our initial 3D models for each watch models. During the development, we used a more linear way of detailed design, engineering and testing of electronics.

During the creation of molds and tools of external parts, I helped Daniel to modify the watch parts in 3D according to the limitations of machinery and production methods. The 3D model was constantly adjusted and then sent to the factory engineers for approval. Skype meetings were held at least once a week where all the pending issues were processed and discussed as a team. The whole design process of all four watches took 9 months to finish.

WATCH MODELS

Our goal was to design a range of watches, where each model would have its distinctive style and design language, with the overall connecting feature of a red button and a uniquely designed watch face. The lead designer of the collection was Product designer, Daniel Julier. After the market and customer research, the work to define the design and materials started. The initial idea was to create two watches; one with more traditional and classical look and a model with a more modern and sporty touch.

We made the decision to design the modern version to be more affordable than the classical model. We decided to use polycarbonate (PC) case body, thermoplastic polyurethane (TPU) strap and to domed acrylic glass to reduce the production costs.

Steel, leather and mineral glass are commonly used in traditional watch making and were then applied to our classical model.

Later on during the development of classical and modern versions, the client requested two new models to fill in a gap between these two models. The Radar model was a fusion of the classical and the modern version. The case body was made from ABS, Poly Carbonate, PVD coated (Physical Vapour Deposition) steel and the strap from thermoplastic polyurethane. The fourth one was a Pocket model. It was a special edition, larger version from the Classical model with a much higher selling price and smaller production quantity.

Early versions of...

The Classical



The Radar



The Modern



The Pocket



Final versions of the whole collection



PACKAGING DESIGN

The What Watch packaging is designed with an immersive opening experience intended to be a moment to remember in itself - surprising and delighting the user every step of the way. Life as a journey and a collection of everchanging moments has been the design inspiration of the packaging design.

When I started the initial design phase of the packaging, we tried various designs and discussed with the client. After the decision of going forward with the accordion style design, I started to create mock ups from thin paper, cardboards and magnets. I examined various ways how to open it and how to guide the user with printed graphics and how would the user perceive the whole opening experience.

After the mockups, I started to design the packaging in 3D so that I could create 2D drawings before going to the manufacturer.

The goal was to create a package which would be fully recyclable and we ended up to use 2,5mm thick cardboard and detachable EVA inlet. The whole construction eventually became really complex but since the client liked the concept we had to find a way to produce it. After months of trying to find a manufacturer we eventually found a manufacturer in Dongguan, China who were interested to take the challenge we were offering. We reviewed a lot of samples, slightly altered the construction and tested feasibility of the materials before getting closer to the end product. With the help of the packaging engineers, we were able to create a completely new manufacturing process.

The high quality materials, hot stamp printing, individual cuts, magnets and complex manufacturing made the packaging more expensive than traditional packaging.

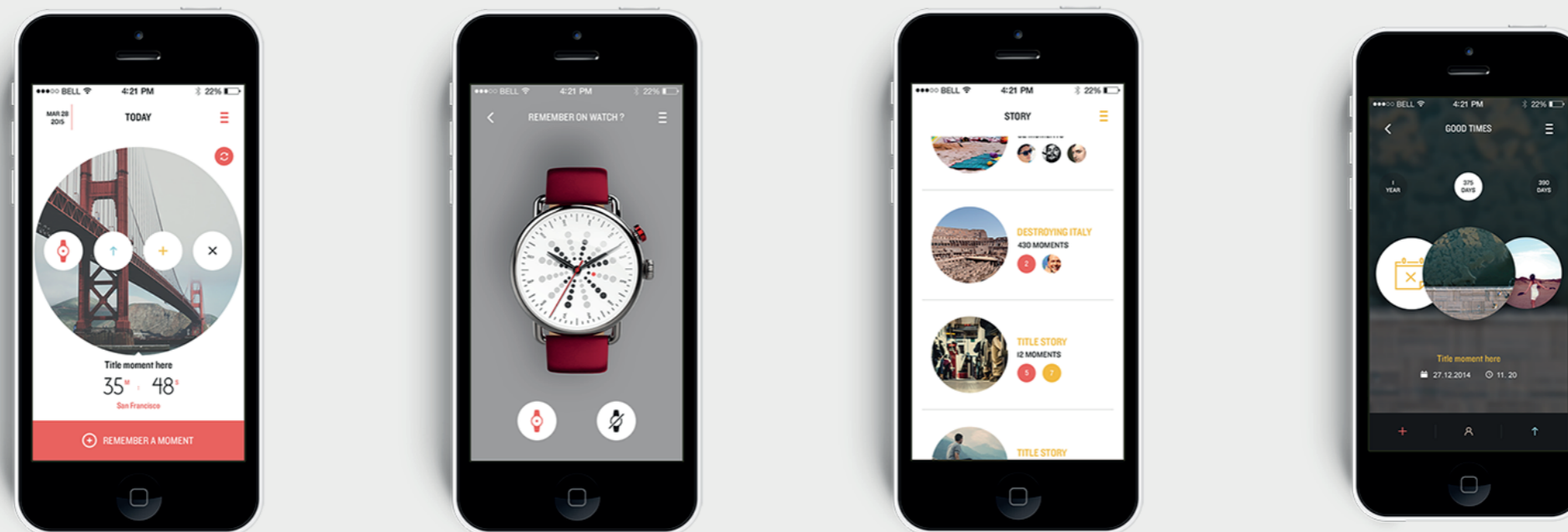


MOBILE APPLICATION

The What?Now application is designed to work with all the “Stop the time” watch models and it plays a crucial role in the whole concept. After the profile has been created, the user can start collecting all the most cherishing moments on to their What? Now app. When the user has pressed the red button the moments sync seamlessly with the app via bluetooth. The moments create a digital timeline on the app which can be viewed and shared with friends and the important ones. The lead UI designer in the mobile app was Graziano Monteleone.

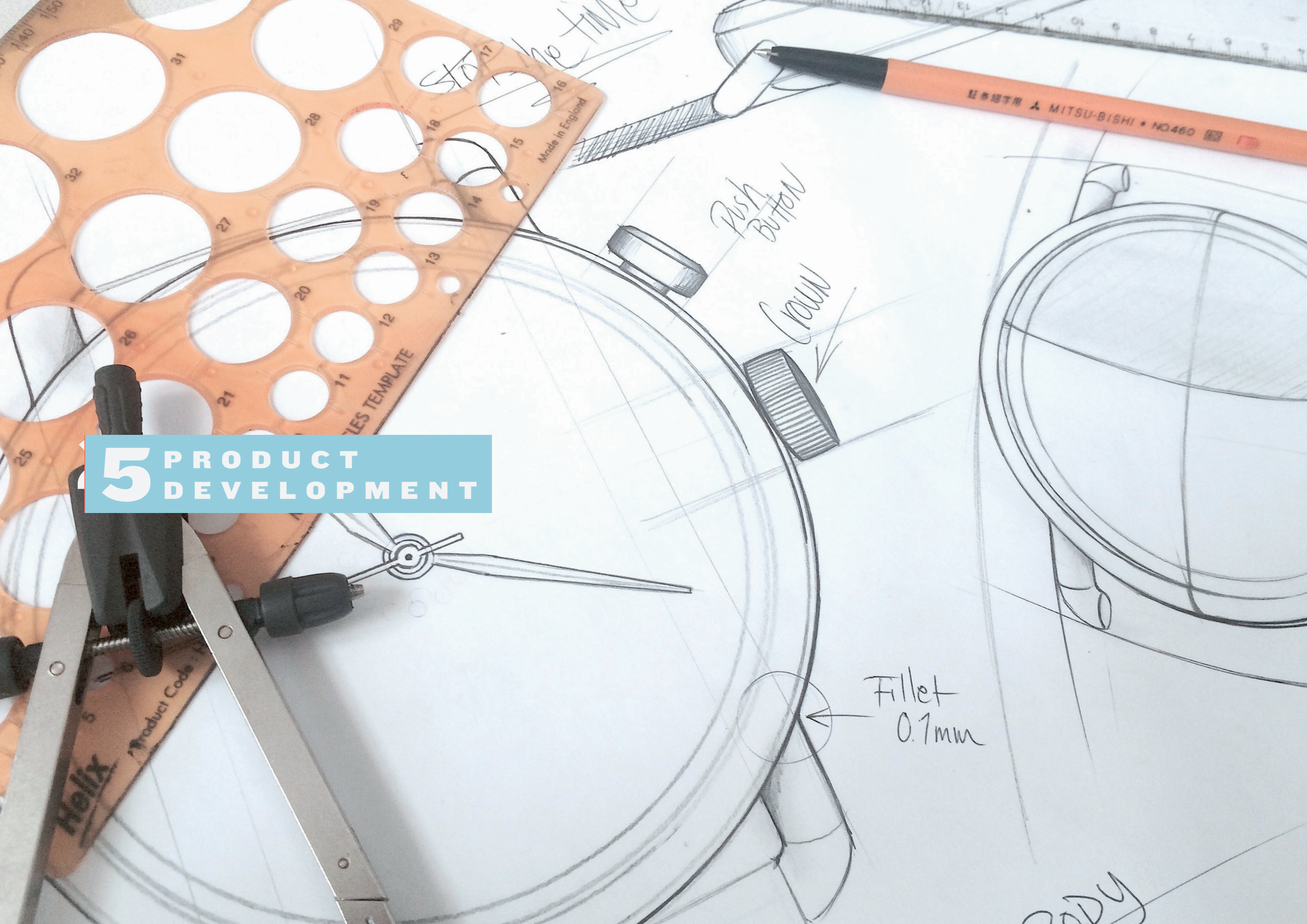
We started the development of the UI by defining the wireframes, strategy and the content for the mobile app. Next we defined the look, feel, responsiveness and interactivity of the UI, where I was involved with Graziano. The development of the application took 7 months since the extended production time of the first watch samples. Since we did not have possibility to test both the watches and the app, it was challenging to find bugs and other failures from both products.

When we received the first PVT 1 production samples, 10 watches and TestFlight permissions were given for user testers. They were asked to describe their experience with the watch and the app during the testing period of two months. All feedback was compared and then implemented if any contradictions were discovered from those experiences. The What?Now app works with iOS and Android platforms.



The What?Now App

5 PRODUCT DEVELOPMENT



SAMPLE REVIEWS

The lead product designer Daniel Julier defined and specified all the colors of each watch model and their parts individually before they were ordered from the manufacturer. After the tooling was ready and the watch part samples were ordered, my main task was to be in charge of the sample reviews and the quality of production outcomes. The parts were ordered individually or assembled so that I could review the materials and their touch, the colors and overall quality of all external parts. The parts were always photographed and then communicated back to the factory in case of any required improvements.

All parts in all the watch models required minor or bigger improvement. Plastic parts, especially with straps it was important to find the right density for the plastic to be ergonomic enough around the arm. This took time, since to find the right plastic combination with the first try usually was not the case. This always had an impact on the time schedules since lead time to order new parts with improved material combinations or new colors were always at least 2 to 3 weeks. In some cases, I still needed to do minor modifications on to the final approved 3D ID. This type of actions always led to tool modifications and in the worst case to a new tool.

The sample reviews form a crucial phase of the product development process since they define the quality and product reliability.



6 PRODUCTION

PROCESS FLOW & FMEA

Quality, reliability and performance of products and manufacturing processes are critical to a good manufacturing outcome. To ensure the best product quality, an efficient and clear quality system should be established in the beginning of the product development.

After the approval of our preliminary design, a process flowchart was prepared by Chipital Ltd.. It is a graphical representation of all processing activities performed on the production line. (04)

In the beginning of the production, many of our assembled watches had small mistakes and dust particles in between parts. My task with Chipital OY during all factory visits was to check all the production steps during manufacturing, detect risks and failures and improve the line to be as productive and efficient as possible.

After we identified all the failures and their effects on the parts, we created a ‘‘process failure and effect analysis’’ (FMEA) for DXG’s engineers to track and prevent future failures on the production line. The FMEA was helpful for DXG as well because it defines the way the parts are received by the factory from its suppliers, parts handled, how the materials and tools stored. (04)

When the watches were being assembled, all parts went through their own specific assembly phase. Each stage of the production line was equipped well with proper tools, jigs and machinery for the assembly workers to work with. The workers were trained by the engineers and then introduced to the process flow chart. They all worked individually in their own work space. We used only one production line with 11 to 14 various assembly steps and it was optimised to work with all the watches.

PRODUCT VERIFICATION TESTING (PVT)

The product or design verification testing is an important step in the development of any new product. It ensures that the product follows the original design like it was intended to be. PVT samples are implemented always to the first products, which comes out from the production line and its executed several times before mass production until the product is completely approved by the designers or the engineers. (16)

During our factory visits, my job was to do PVT reviews every second month where I needed to check that the parts do not have scratches, they use right parts and that they work. If I detected any mistakes or other failures on the samples, the FMEA was updated and discussed with DXG's engineers.

The first prototypes the factory assembled (PVT1) had wrong parts, mistakes on printings and dust particles between the assembled parts. In PVT2, only one watch model from three was accepted but as for the rest of the models, I did not see much improvements compared to the PVT1. In PVT3, we received improved watch assemblies. After PVT3, we entered to the pilot phase, where the final prototypes are assembled, drop, pressure and heat tested. We started the final mass production of all watches in September 2015.

QUALITY CONTROL

The quality control was executed during all the PVT1, PVT2 and PVT3 stages. My task was to mark all the external parts like leather straps and assembled watches individually. The idea was to find the ones which were not accepted and which were accepted.

All parts were inspected by the factory workers beforehand so the time to go through numerous samples was cut down. All external parts were marked with the "NG" (no go) and "OK" stickers so that the factory workers know where to compare when incoming parts arrive to the factory and how would the final assembled watch should look like.

PILOT & MP

The pilot stage comes after the final PVT stage is stable, failures are prevented, and the final quality of each model defined by one "golden master sample". In the pilot stage, adjustments of tools and equipment are minimised because the idea was to replicate the golden master sample as many times as possible. The goal was to create 8 out of 10 watches which were comparable to the final sample before proceeding to the mass production.

7 CONCLUSION



THOUGHTS & LEARNING

When I started my career in TBWA\Helsinki I never thought that I could have so much responsibility and experience straight from day one I started working.

I first started as a trainee and my common supposition was that the trainees mostly make coffee during the mornings and then the rest of the day they sit on the lobby waiting to get that someone asks them to help them with some little tasks. It was quite different at least in TBWA\Helsinki. I had the opportunity to start working right away for clients like Paulig and What? with large budgets and almost with free hands.

During the What? Stop the time - project I had an opportunity to play a role as a product manager, product designer, concept designer and engineer which opened my view from the whole industry a lot. I understood that the responsibility a product designer has on a new product development process is much larger than I even understood at school.

All these experiences came to me as a huge opportunity since the senior designer at TBWA\Helsinki, Daniel Julier left the company a year after I started my work so I kind of heritage most of the work he started and it become my task to finish the project until the product was on the markets.

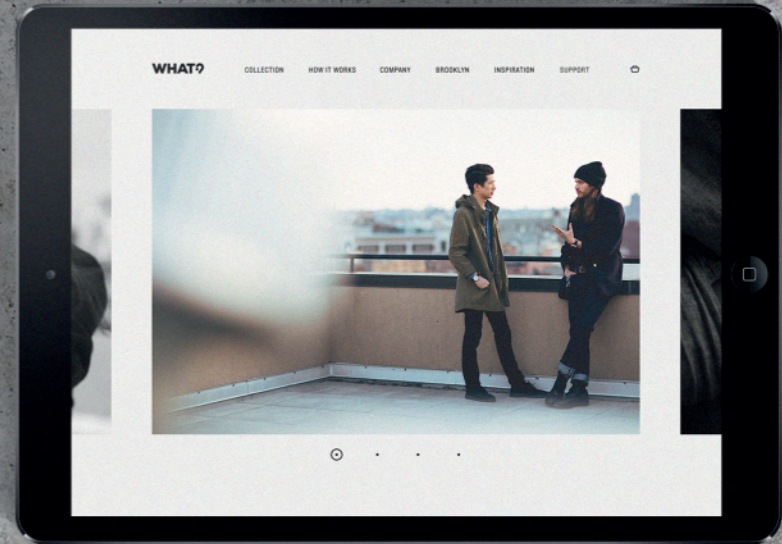
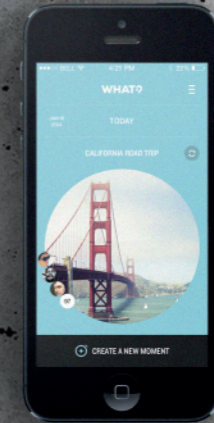
This project gave me a full understanding what does it actually mean to design and manufacture consumer products. It is a lot of work, problem solving, long flights and most of all constant learning. It is a rapidly changing world where designers need to be always on top of new innovations and their own surroundings.

S E L F E V A L U A T I O N

In my own point of view, the experiences I have had through my current employee and from the projects have made me more professional towards my own occupation. I have learned to use design disciplines from my colleagues and through my work. I have been in situations most of the time during my career where quick decision making has been crucial to save time, clients resources and to maintain a good quality of the end product. It has been challenging since constant jet lags, tight timetables and the knowledge I had when I started was only in school level so it has been important that I have had to learn in my own time and from my colleagues.

I think I have performed really well compared to my circumstances, namely the way I engaged in the projects. . I have learned a lot and I have gained a lot of new interests and thoughts about my future career path. I have grown a lot as a professional and three years have already passed. I still know I am in the right industry since I think I can function really well in situations where fast thinking and problems solving are sometimes really crucial.

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PHOTOS

All pictures and graphics are property of the author, unless otherwise indicated.

A. - Robert Lindstrom Photography (cover)

B. - Mikko Ryhänen Photography

C. - Sami Salmenkivi

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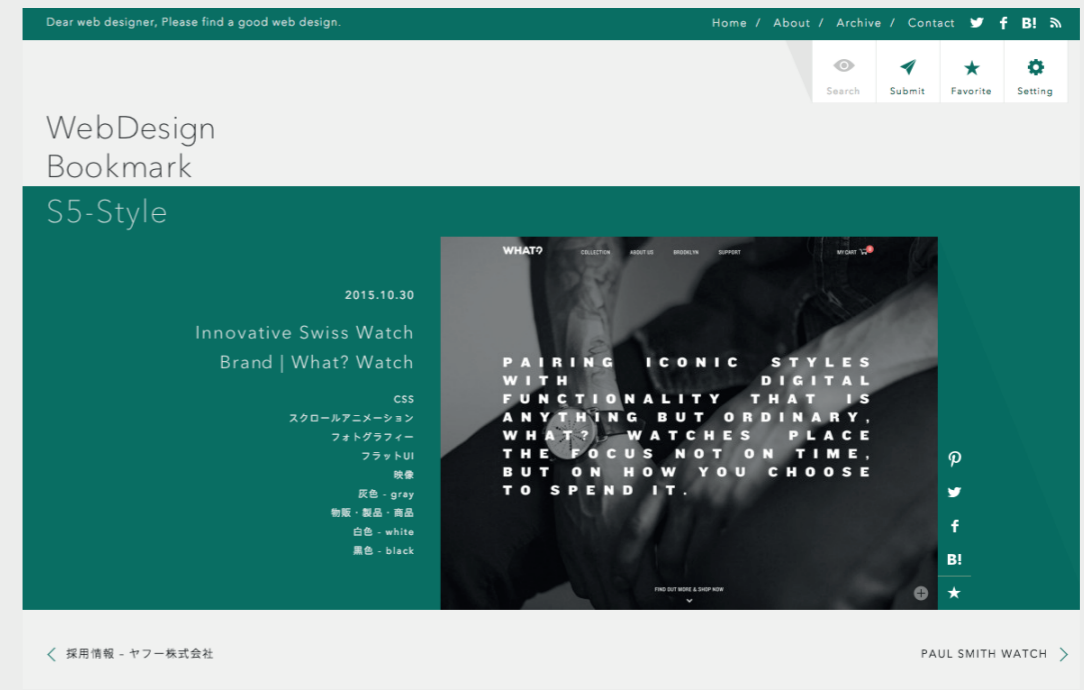
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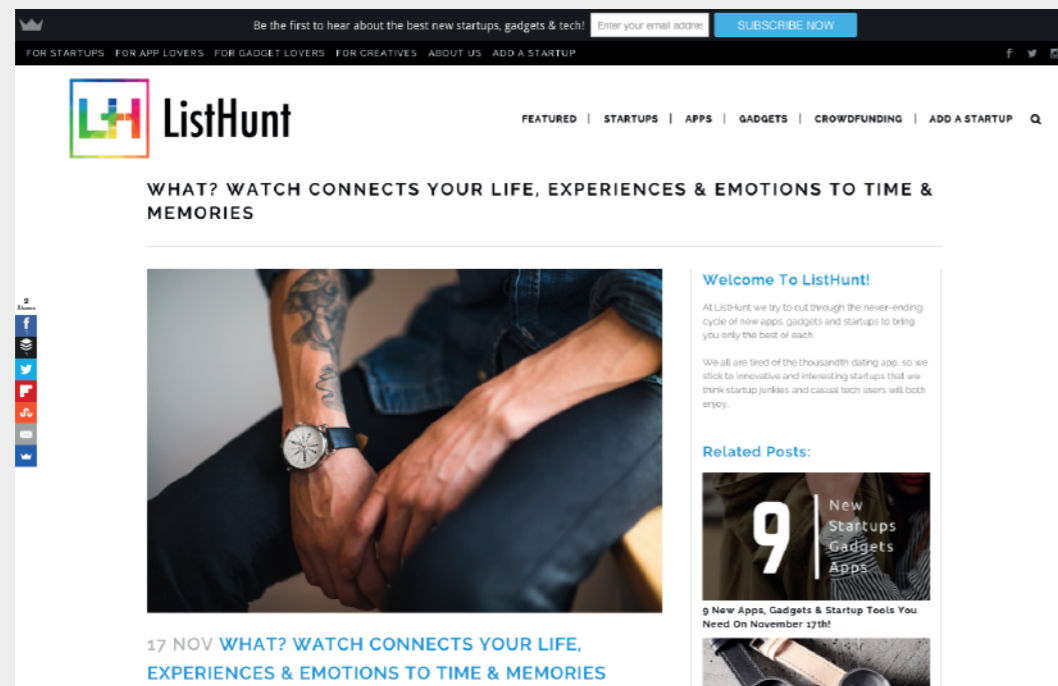




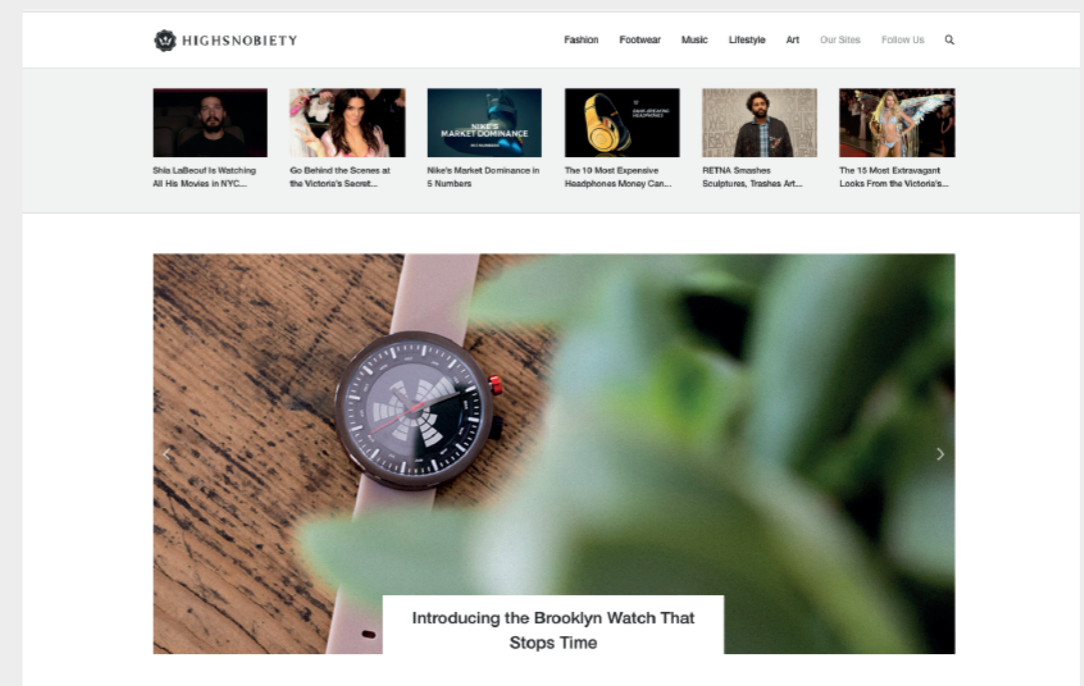
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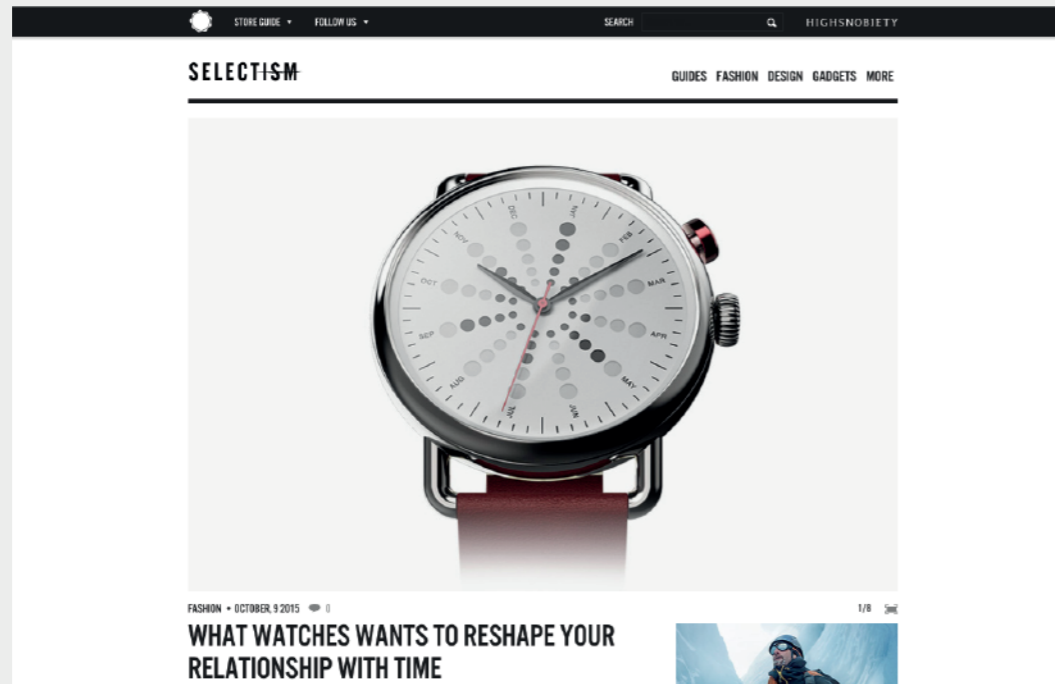
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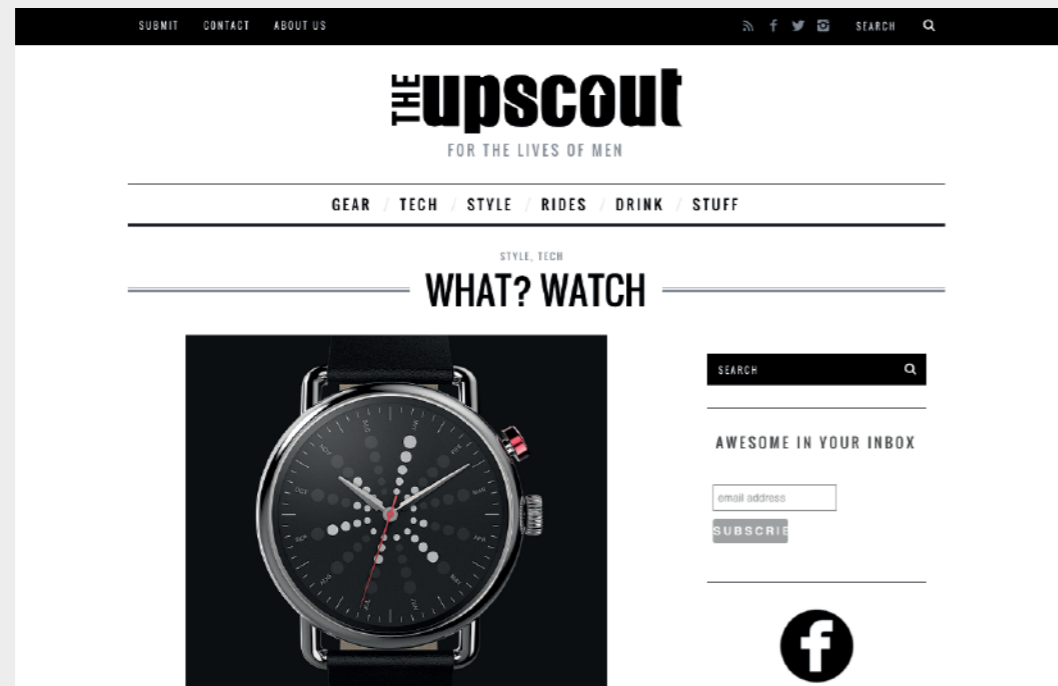
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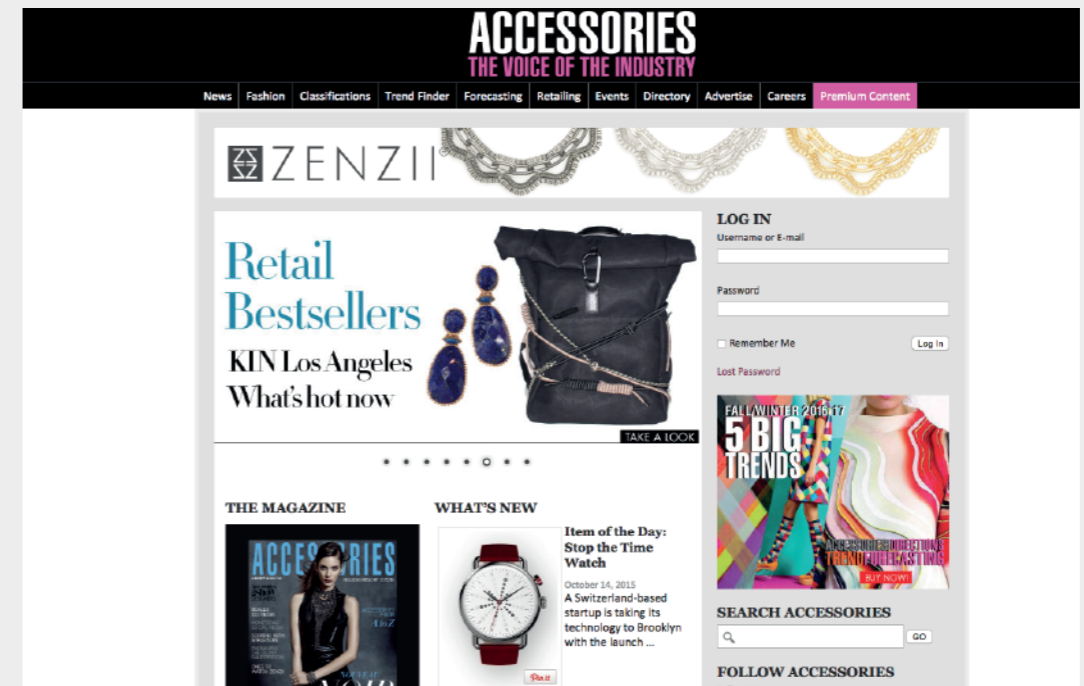
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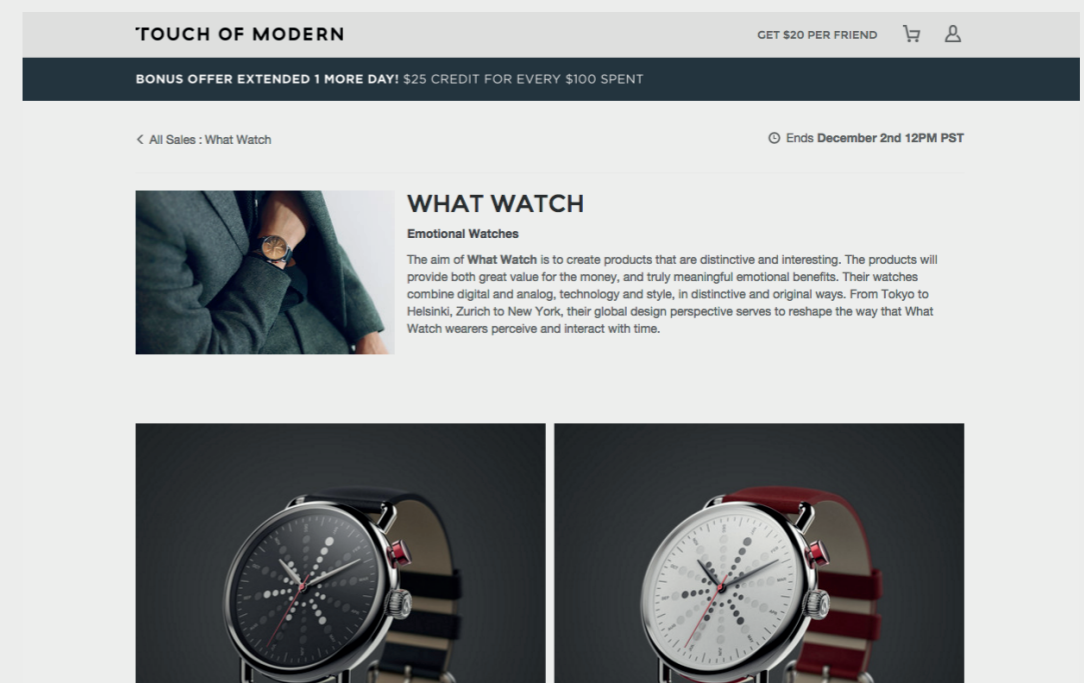
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By [Laura Rosenfeld](#), Tech Times | October 1, 11:00 AM

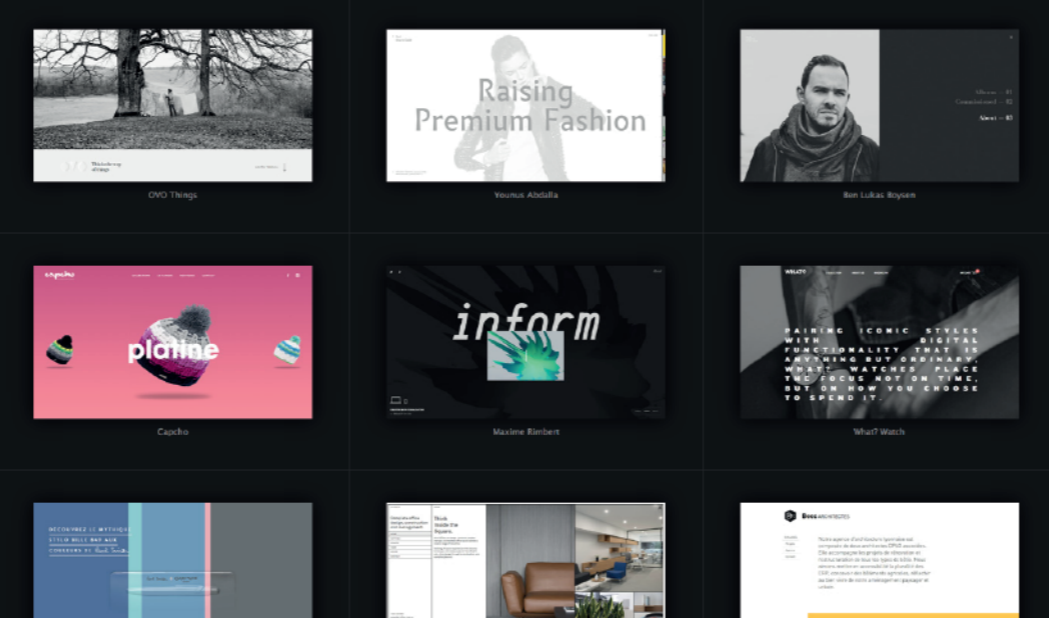
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Constantly looking at your watch usually means that you're not enjoying yourself, counting down the seconds until something more interesting comes along. However, what if looking at your

R.

CSSDSGN Browse Random Submit



The grid contains the following items:

- DVO Things**: A landscape photo with a person in the distance.
- Yousou Abiola**: A person in a white shirt with the text "Raising Premium Fashion".
- Sam Lukas Bryson**: A person in a dark jacket with a white scarf.
- Casho**: A pink background with a colorful abstract shape and the text "plafine".
- Maxime Ribard**: A dark background with a green hand icon and the text "inform".
- What? Watch**: A dark background with white text: "RAISING ICONIC STYLES WITH DIGITAL FUNCTIONALITY THAT IS ANYTHING BUT ORDINARY. WHAT? WATCHES PLACE THE FOCUS NOT ON TIME, BUT ON HOW YOU CHOOSE TO SPEND IT."
- Blue and Yellow**: A blue and yellow abstract design.
- Blue and Yellow**: A blue and yellow abstract design.
- Blue and Yellow**: A blue and yellow abstract design.

S.