Tulip chandelier (2015)

During an internship at Monolyt interior and product design in 2015, I designed the initial basis of the tulip chandelier for the Keukenhof restaurant the Blooming Dutch. After an ideation process involving sketching and making low fidelity mockups, a handcrafted prototype was made. Later on, iterative changes were made to the design by Monolyt to make the design more in line with the interior of the restaurant.

//IMAGES OF END PRODUCT
//IMAGE OF PROTOTYPE BUILDING

Restaurant imagery: Daphne van de Velde **// LINK TO** www.daphnevandevelde.nl

Sprinqle (2018)

For my bachelor's graduation in 2018, I developed the primary design of the Sprinqle; the first commercial interactive water splash pad for at home. The Sprinqle features multiple interlocking water play tiles with addressable water nozzles. These nozzles shoot out water jets in various patterns. By tapping on the 'control box', children can change the water game patterns. The water games can also be changed via an application that is connected via Bluetooth to the control box.

//RENDERING IMAGE IN GARDERN

Fast iterative development
For the realization of the Sprinqle, a plethora of technical solutions, both mechanical and electrical systems were devised to create a system with (inter)changeable water patterns. After fast iterative steps, the electrical system - the most promising - was chosen to be elaborated in more detail. The electrical system consists of nine individual addressable solenoid valves and a singular piezoelectric element for user force detection. The location of the individual components was centralized, thus creating the basis of the control module with a water ingress protection of at least IP44.

//IMAGE OF SKETCH OF SPRINQLE CONCEPT
// BLUEPRINTS IMAGES ELECTRICITY AND TECHNOLOGY

Prototyping
After iterative connecting, a functional prototype was made. The primary objective of the prototype is to verify the setup, both from a technical as well from a usability standpoint. The overall aesthetics of the prototype were seen as rather insignificant or secondary.

//PROTOTYPING PICS
//PROTOTYPE VIDEO Sprinqle project (https://www.youtube.com/watch?v=gNmRVVdVR6Y)

User tests
Multiple user tests were executed to validate the usability and the degree of 'playing value'. A phenomenon that - opinion-wise - is sometimes hard to grasp. During the multiple user tests, some valuable usability problems were exposed, leaving room for overall design optimization in both soft- and hardware.

Market introduction
After iterative refinement steps regarding manufacturing and software application development, the Sprinqle was commercially introduced in the spring of 2020 for the European market. Besides the introduction of an application, the initial design setup remained unchanged.

//END PRODUCT EXIT TOYS IMAGE

Product presentation imagery: Dutch Toys group **//LINK TO THEIR WEBSITE www.exittoys.com**

The R-Pack (2019)

The R-Pack is a paper-based thermal parcel protector for e-commerce (B2B & B2C). This concept was created for the Smurfit Kappa design challenge 2019. The R-Pack is a fully paper-based product that can be recyclable, which is not the case with similar EPS or XPS solutions. The R-Pack consists out of stamped sheets of cellulose and single-wall corrugated board type b-flute.

//RENDERING IMAGES

//SKETCHING IMAGES

Prototype testing
During the challenge, multiple prototypes were fabricated and tested against the insulation properties of 20 mm EPS, showing promising results were the overall insulation properties (r-value) matching or even better.

//IMAGE OF GRAPH

R-Pack assembly

//TEXT ALONGSIDE LONG BANNER IMAGE WITH THE ASSEMBLY STEPS 1-5

1. The R-Pack arrives flat on a Euro pallet and is compressed to save volume.
2. A warehouse worker folds the sides of the R-Pack inwards as depicted in the imagery.
3. The R-Pack is then inserted in a size matching corrugated box
4. The warehouse worker places the clients' thermal sensitive orders (e.g. pharmacy or food).
5. The box is sealed with paper tape to make the packaging 'fully' paper-based.

Conimex Street Food to go (2019)

Conimex Street Food to go is a circular service concept for the retail environment. The concept was created during the design challenge collaboration with Conimex (Unilever) and the University of Twente. The service concept introduces the Conimex brand into the retail environment with a live cooking supermarket service collaboration. The concept revolves around a centralized place that makes on-to-go meals efficiently and effectively without any additional packaging.

//IMAGE OF THE RESTAURANT

//IMAGE OF THE CIRCLE OF CONIMEX

//VIDEO OF THE CONIMEX PROJECT TO GO (https://www.youtube.com/watch?v=65TQX5uvJlQ)

The 'Sustainabowl'
The meal of the customer at Street Food to go is served in a returnable and reusable bowl made from mono materials. The TPU lid is easy to open and seals properly to avoid any leaking. The bowl is made out of ABS and gives a 'premium' look and feel that is following the Conimex brand style guidelines. Additionally, the Sustainabowl is optimized for collomodularity.

//IMAGE OF THE SUSTAINABOWL ON A TABLE

//IMAGES OF THE SUSTAINABOWL BEGINNING WITH THE FRONT VIEW AND TOP VIEW

Group members: Deny Albers, Twan Defesche, Nort Denissen, Ruben Peters, Koen Mulder, Thijs Mulling

ONYX Ultra

The ONYX Ultra is a fully integrated and interactive system for soccer training. The Ultra is a 360-degree environment that helps players train their soccer skills such as agility, accuracy, and shooting velocity. The dome is equipped with 24 addressable ball target modules that sense the force of the ball impact and measure ball speed using affordable radar sensors. The suspended tensioned 360-degree net provides direct reverberation, creating dynamic feedback similar to a soccer match. The functions and training settings can be operated with a gentle tap on the control module or with the additional software application. Multiple stereo speakers create additional feedback to the user(s) if the destined module is hit or not. The ONYX Ultra dome is destined for the business market (B2B) and can be installed indoors as well as outdoors.

//IMAGE OF ULTRA SEEING FROM THE FRONT
//IMAGES OF BIRD VIEW ULTRA
//IMAGES OF DETAILS OF THE ULTRA

The target module
The Ultra has 24 addressable target modules that are capable of measuring ball force with the use of piezocoaxial cable. Piezocoaxial cables, mostly seen in fence detection systems, are capable of extremely accurate measurements. The custom PCBA has integrated high-power RGB LEDs and radar sensors able to measure ball speed using the Doppler effect. The combination of high power LED, the sunshade cover, and a targeted rating of IP44 makes it possible to use the Ultra in almost any weather environment.

//CLOSEUP OF THE TARGET MODULE WITH LIGHT ON
// EXPLODED VIEW OF THE TARGET MODULE WITH ALL THE COMPONENTS
// SLOMO VIDEO OF THE TARGET MODULE (https://www.youtube.com/watch?v=4XwDRv0RK9Y)

Software application
The additional software application makes it possible to interact with the dome and creates a more immersive experience. The user is capable of changing settings, train specific soccer skills or give insight into personal skills development. Furthermore, the software application also enables to share results or be connected with social peers.

//SOFTWARE IPHONE APPLICATION UX DESIGN IMAGE

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//DARK OVERVIEW OF ALL THE ITERATE DESIGN SKETCHES

Collaborative design
The primary idea was not devised personally but initiated by children during multiple co-design sessions. For this, a co-design setup was devised in detail substantiated in academic knowledge. Additionally, academic knowledge was amassed to develop an abstract understanding of play and related subjects (e.g. how to design for interactivity).

Iterative prototype development

The soccer training concept was elaborated in detail by many iterative steps. Multiple prototypes were created in detail, each with many days of troubleshooting. Eventually, a prototype with developed hard- and software was fully functional and reliable enough to be tested met users.

//VIDEO OF DEMO TEST: https://www.youtube.com/watch?v=05eztXr4_Rg
//IMAGES OF PROTOTYPE DEVELOPMENT
//IMAGE OF ELECTRIC CIRCUITRY

User tests
Multiple user tests were carried out in different environments and users. The device was tested at a local soccer club as well as in a domestic environment with different kinds of users, ranging from skillful experts to young beginners. During the multiple user tests, some valuable usability problems were exposed, leaving room for overall design optimization in both soft- and hardware.

// IMAGES OF USER TESTS AT THE SOCCER FIELD
//VIDEO OF USER TESTS:

Project in collaboration with Stijn van Cuijk. **// DIRECT LINK TO https://stijnvancuijk.com**

About

Curious about almost everything, creative and open-minded.
Likes to reveal technology based on matter, form, agent and purpose.
Shaves himself every morning with Occam's razor

//IMAGE OF ME ON THE RIGHT SIDE NEXT TO ABOUT

Image: Gijs Ebben **//Link to: https://ebben.gd**

Education

2018 - 2020
Master Industrial Design Engineering (MSc)
University of Twente

2014 - 2018
Bachelor Industrial Product Design (BSc)
Hogeschool van Arnhem en Nijmegen

Experience

2020 - present
Industrial Design Engineer at EXIT Toys
www.exittoys.com

2020
9 months
Graduation internship at EXIT Toys
www.exittoys.com

2018
1 month
Summer design engineer at SIL Products
www.silproducts.com

2018
9 months

Graduation internship at EXIT Toys
www.exittoys.nl

2017
6 months
Internship at SIL Products
www.silproducts.com

2015
6 months
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Tilburg, 2021

Colophon

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