

Developing DIVE, a design-led futures technique for SMEs

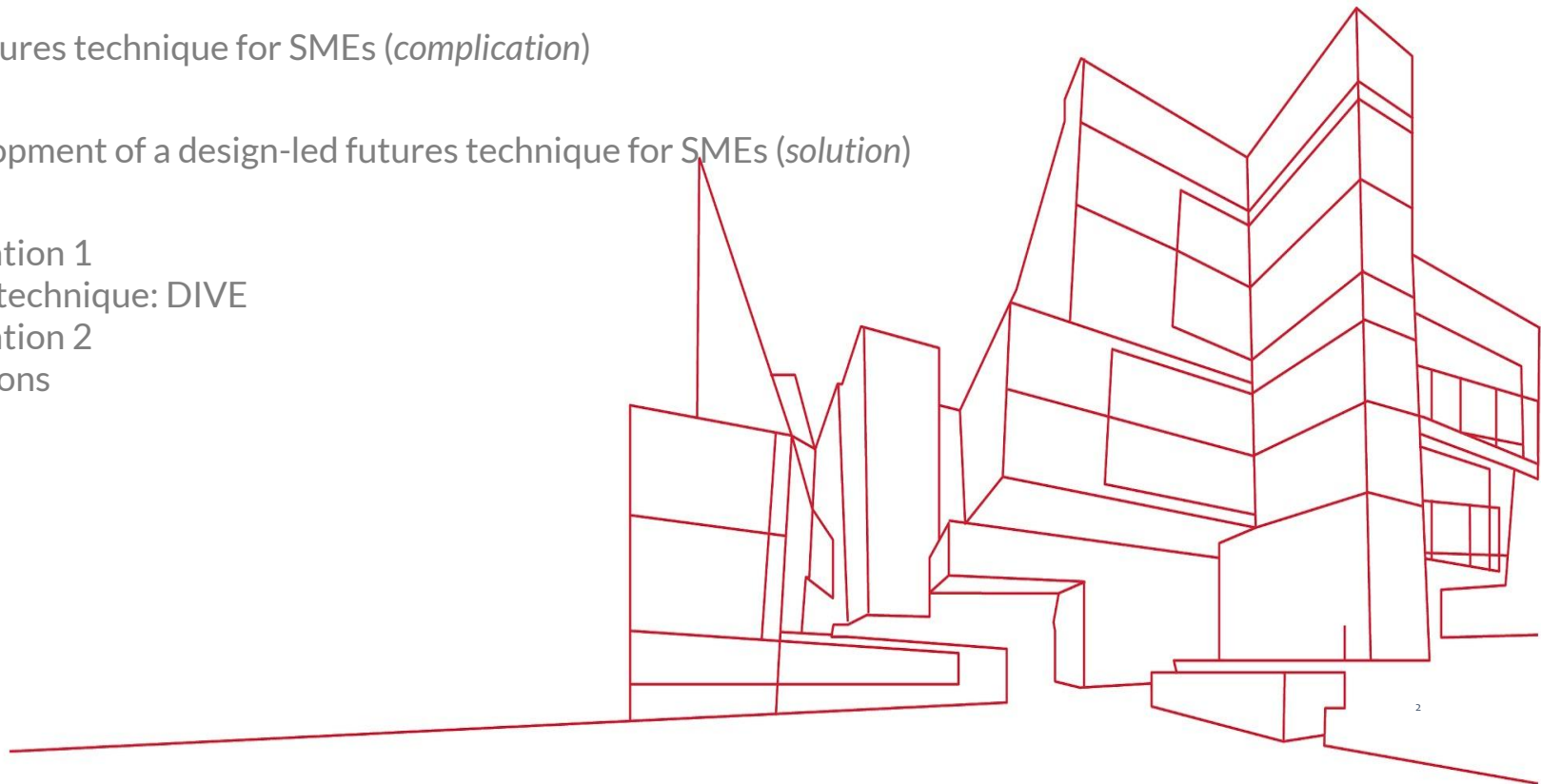
Ricardo Mejia, Gert Pasman, Erik Jan Hultink, & Pieter Jan Stappers
IDStudioLab Delft University of Technology, Delft, The Netherlands



CONTENT



1. SMEs (*situation*)
2. Lack of futures technique for SMEs (*complication*)
3. The development of a design-led futures technique for SMEs (*solution*)
 - a. Iteration 1
 - b. The technique: DIVE
 - c. Iteration 2
 - d. Lessons



SMEs

small- and medium-sized enterprises

< 250 employees & < EUR 50 million of annual turnover



María, general manager & owner

fictional character


Marlioü
FORMULACIÓN EXPERTA



A Colombian medium-sized enterprise focused on hair care products.



Goncho, general manager

fictional character

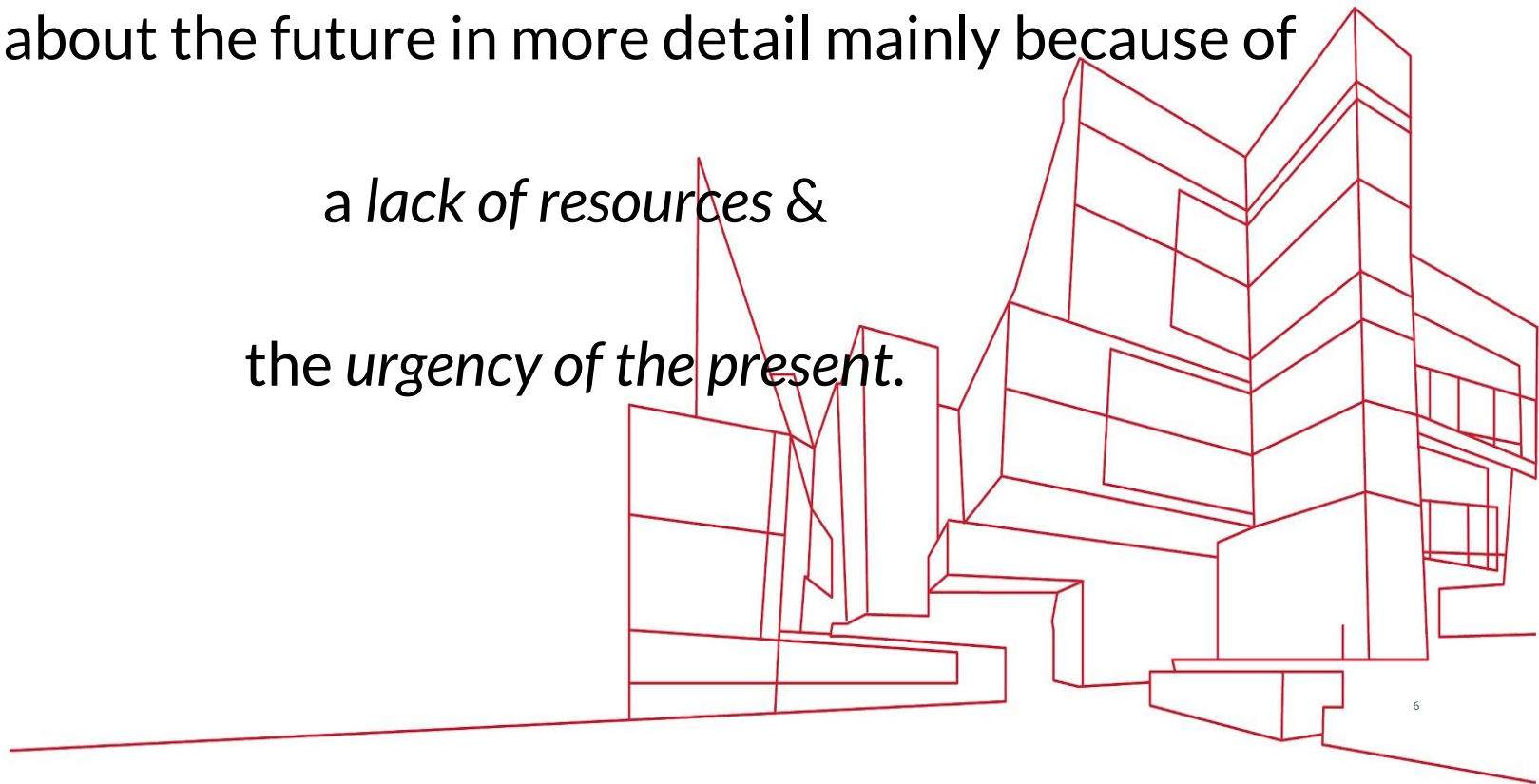


A Colombian small-sized family enterprise focused on the manufacture and delivery of steam boilers, hot water systems, and heat exchangers.

Although SMEs are concerned about the future and want to leave a legacy to their families and communities, they rarely think about the future in more detail mainly because of

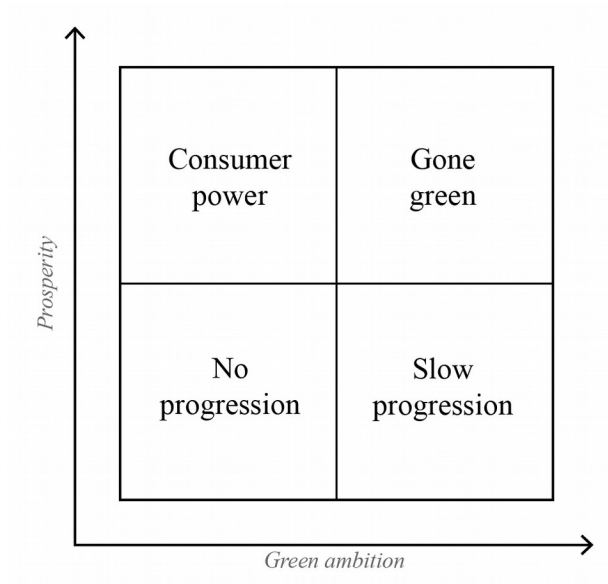
a lack of resources &

the urgency of the present.



Futures studies

the variety of ways to think, map, and influence the future (Hines, 2016)



Future energy scenarios by Stewart (2016)

management-led

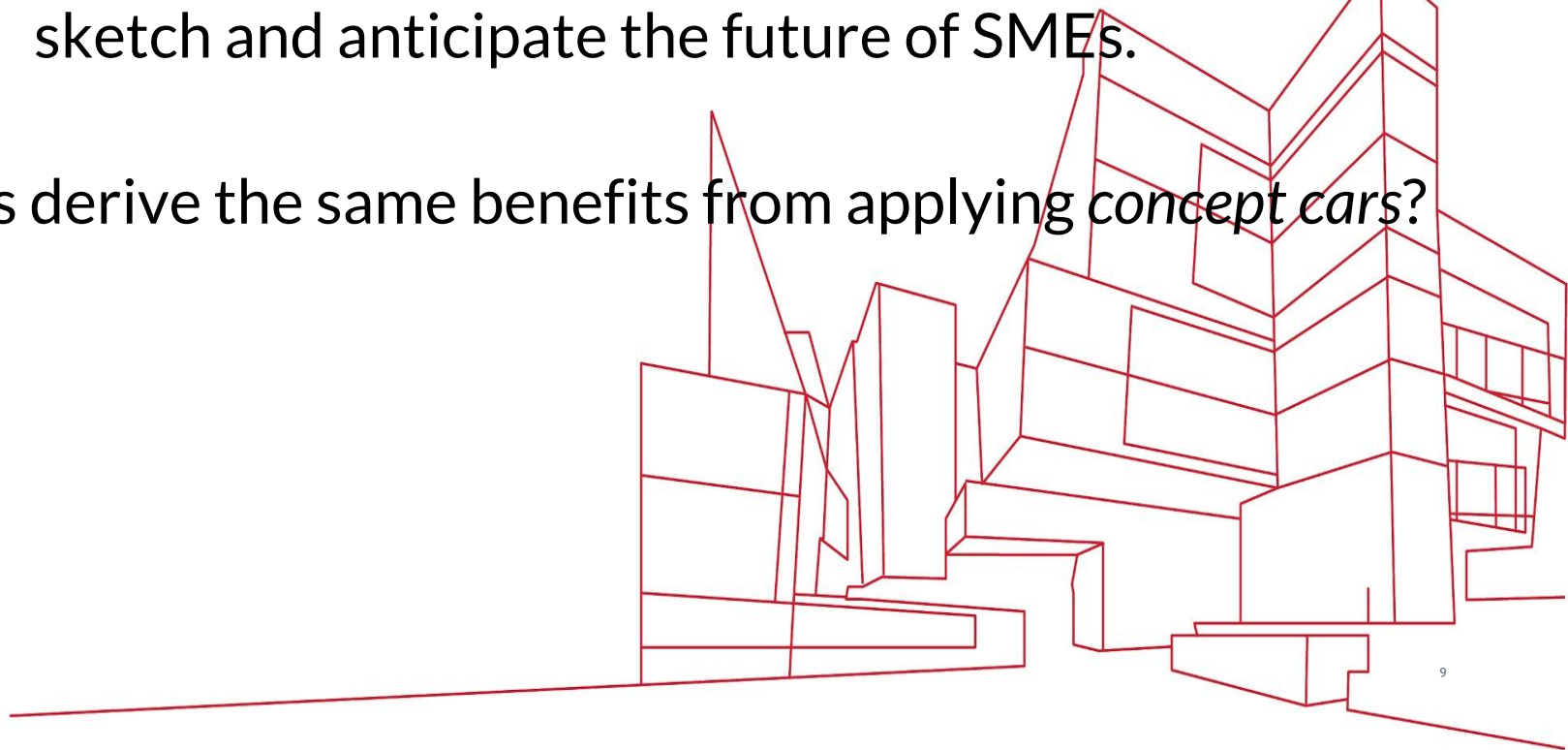


Concept car Buick Y-Job by General Motors (1938)

design-led

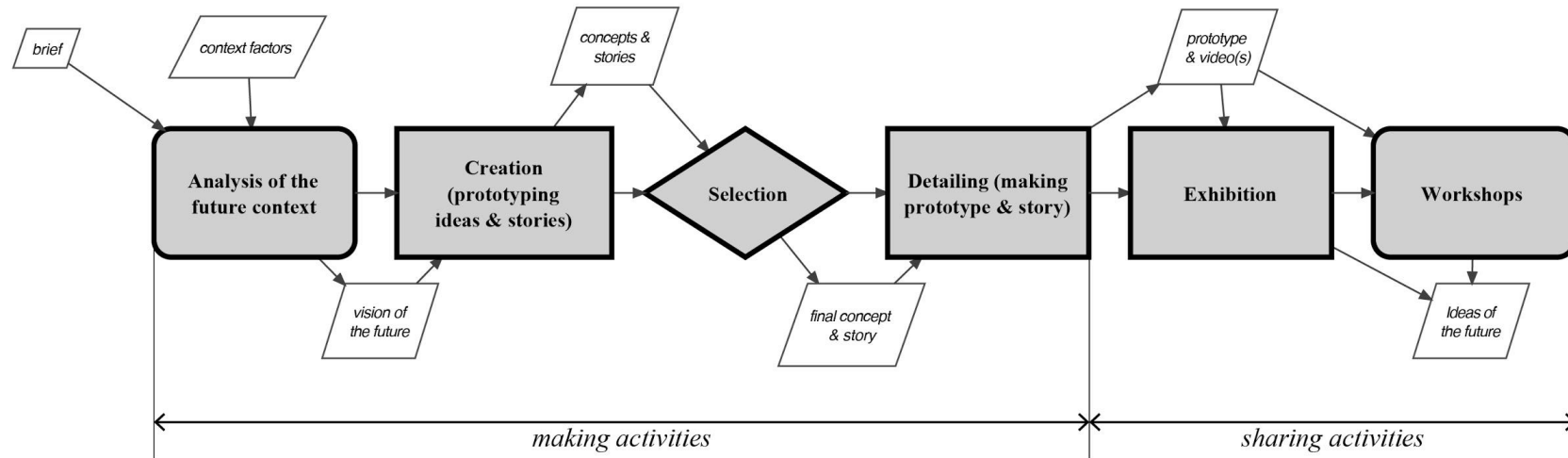
Design-led futures techniques appear to be a promising way to sketch and anticipate the future of SMEs.

Can SMEs derive the same benefits from applying *concept cars*?



The development of a design-led futures technique for SMEs

A hands-on process to explore and share the future



Concept cars / process

Visual synthesis, prototyping, and storytelling.

An experimental artifact of the future, unrestricted by constraints imposed by the present



Concept cars / outcomes

Exhibition of the Peugeot Exalt concept car at the 85th International Motor Show, Geneva, 2015.

The Alchemist Club 2025

a concept car for Marliou'



A network of beauty consultants assisted by a kit of hair products; an input device which interacts with tablets and cellphones to measure, compare, and experiment with the hair products; and a do-it-yourself apron.

Me



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Me

**Yuly @hairexpert**

a beauty technician looking 4 a job...

Bogota | Colombia



You retweeted

02.04.2025

**Sergio Zuluaga @sergiozuluaga**

@hairexpert hey friend, whar happend, are u ok? xxx love u...

**Yuly @hair expert**@sergiozuluaga I cannot work full time in a beauty saloon, need time 4 #mySon ||| but need the money [#bankruptcy](#) |||



Tweet



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Me



Yuly

@hairexpert

:) since today I'm a **#BeautyConsultant**
@AlchemistClub2025 tx @Marliou I'll do my best



07.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

I got the [#AlchKit](#) today... so anxious,
tx [@AlchemistClub2025](#)



It's a kit with the instructions to make my own apron, a bag and the alchemist table...

07.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

#AlchKit is awesome



13.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

makin my apron following the instructions of the [#AlchLab](#)



12.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

so proud, made my uniform (DIY, lol)
tx [#AlchLab](#) such an easy app, love it...



12.05.2025

1 RETWEET





Tweet



Home



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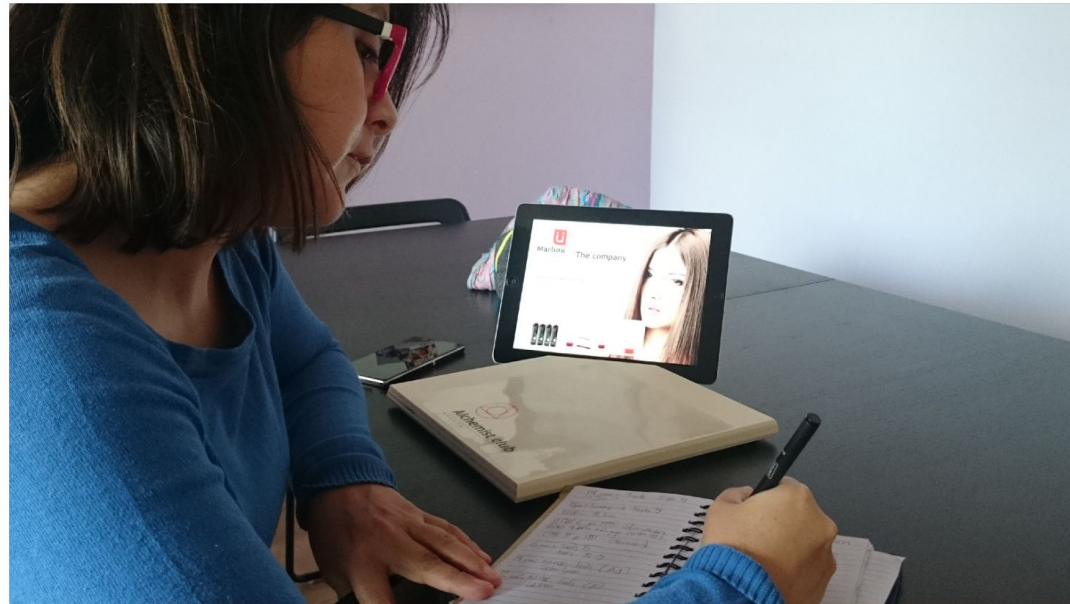
Me



Yuly

@hairexpert

...online... learning how to use my **#AlchKit** & **#AlchTable** all I need to attend my clients



13.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



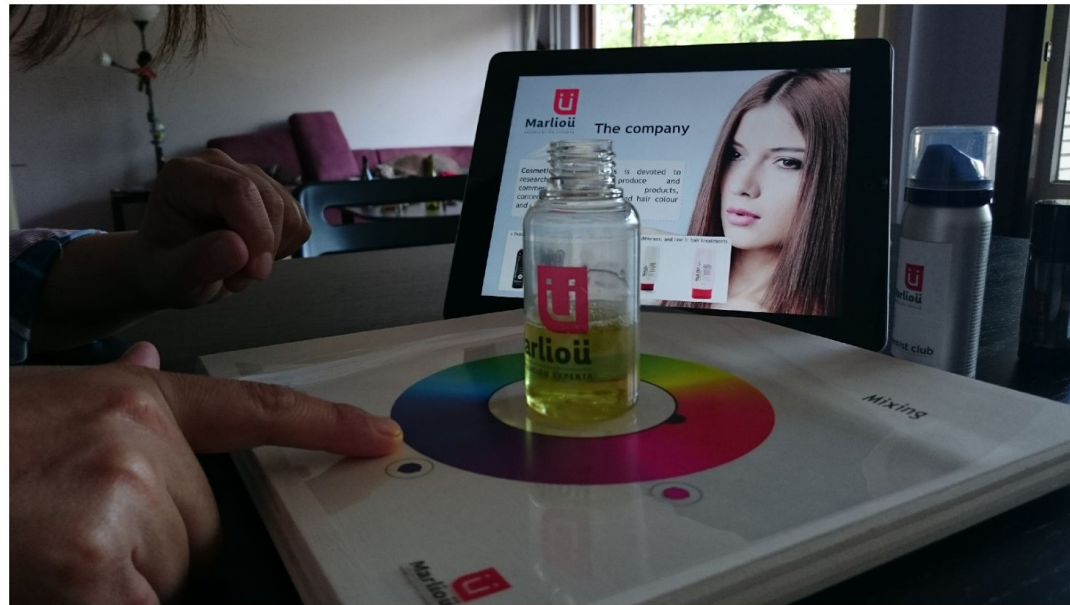
Me



Yuly

@hairexpert

so anxious, my first client, already studied her wishes online & now playing with colours...



14.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



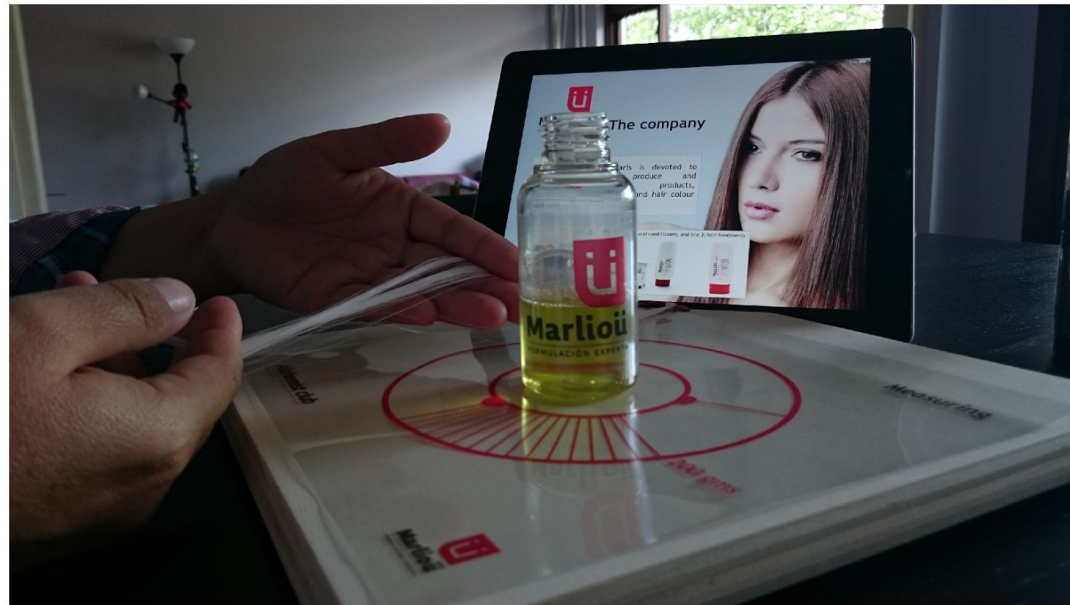
Me



Yuly

@hairexpert

200 gms of love :P ||| I'm not cooking meth
I swear lol, love my work |||



preparing the color for my first client, measuring like a pro...

14.05.2025

1 RETWEET





Tweet



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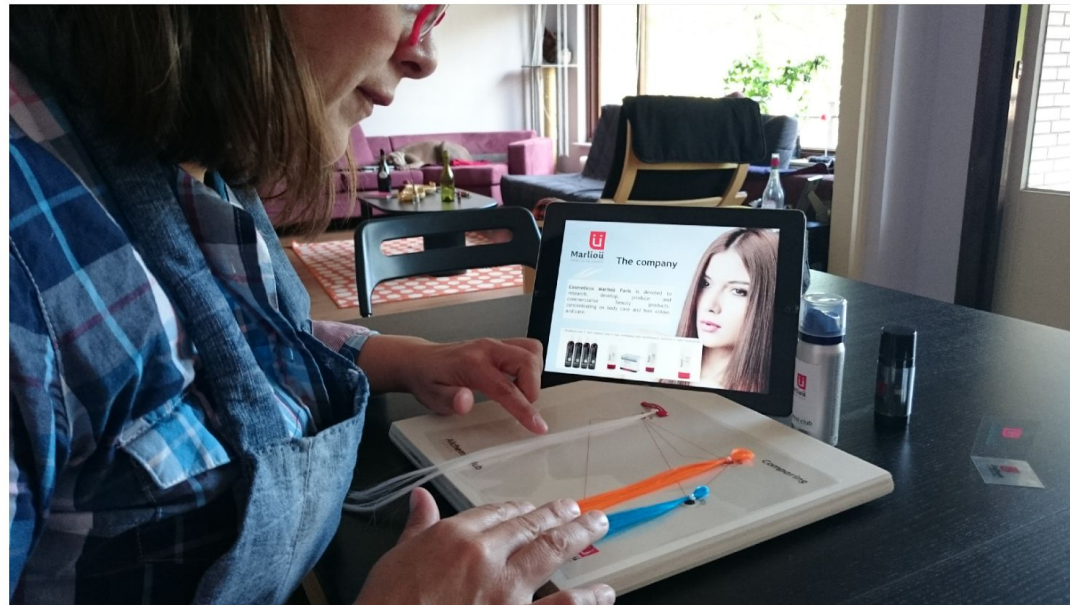
Me



Yuly

@hairexpert

comparing colours... she will be happy with
the unique colour that I've mixed for her...



14.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

in a hurry, going to the house of my first client,
I'm a **#BeautyConsultant**



16.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

hate this city, traffic, traffic and more traffic...
WTF

16.05.2025

1 RETWEET





Home



Notifications



Discover



Me



Tweet



Yuly

@hairexpert

with my client deciding the colour [#AlchTable](#)
...tx for the online support on [#AlchLab](#)



16.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

ok... *yellowish orange* will be... now it is
a matter of time, *(song) reloj no marques las horas (song)*



16.05.2025

1 RETWEET





Tweet



Home



Notifications



Discover



Me



Yuly

@hairexpert

after a beautiful result making a video with her feedback... you can see it on [#AlchLab](#) & [myblog](#)



16.05.2025

1 RETWEET



Me



Home



Notifications



Discover



Me

**Yuly @hairexpert***a* **#BeautyConsultant @AlchemistClub2025****@Marliou** ||| **#Entrepreneur** |||

Bogota | Colombia



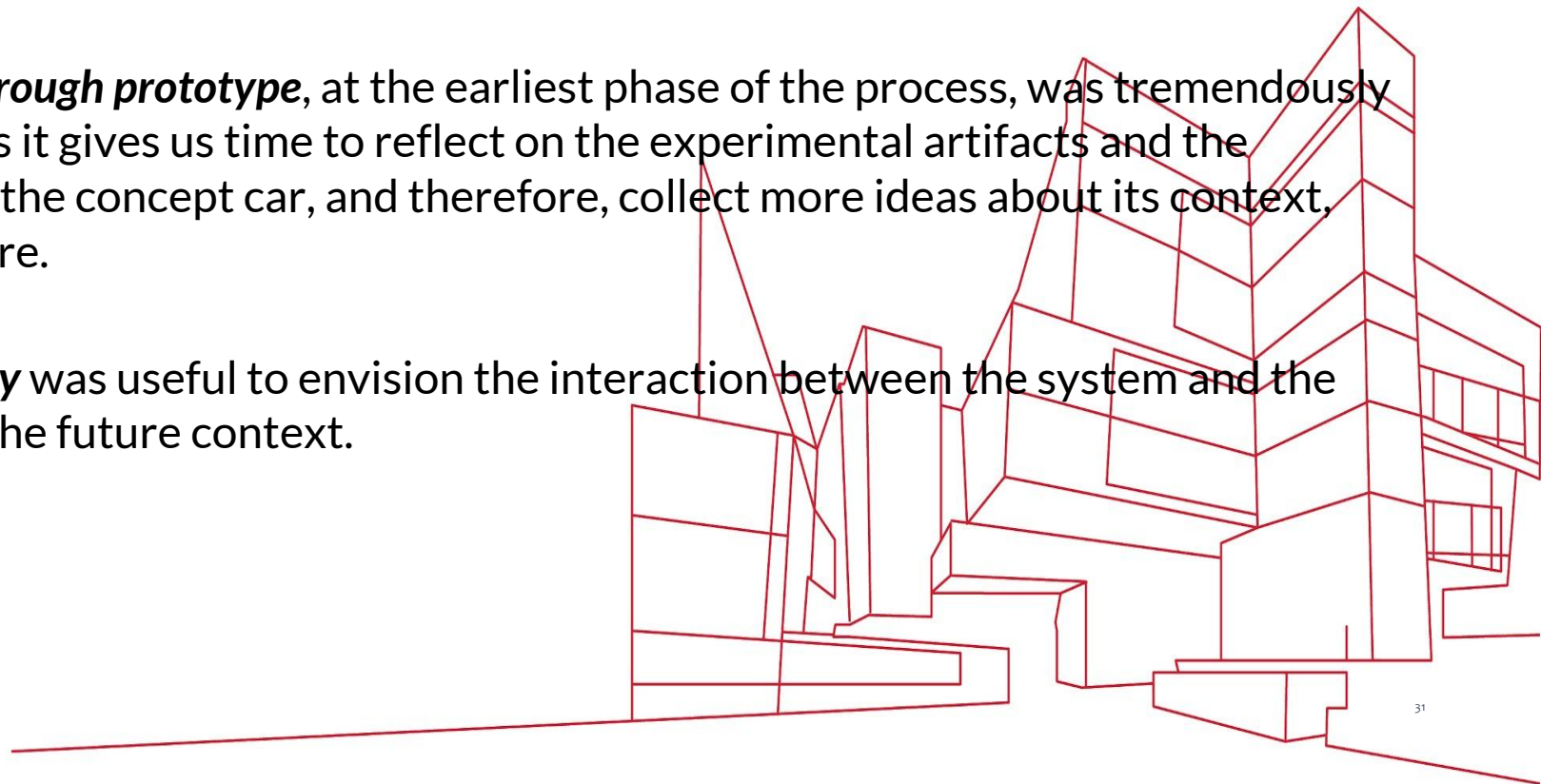
You retweeted

09.07.2025

**Sergio Zuluaga @sergiozuluaga***@hairexpert* love to see u happy, party mood? xxx**Yuly @hair expert***@sergiozuluaga* sure, now I'm an expert with my **#AlchKit**
tx to the support of **#AlchLab**, love **@Marliou**,
btw do u need hair treatment? lol

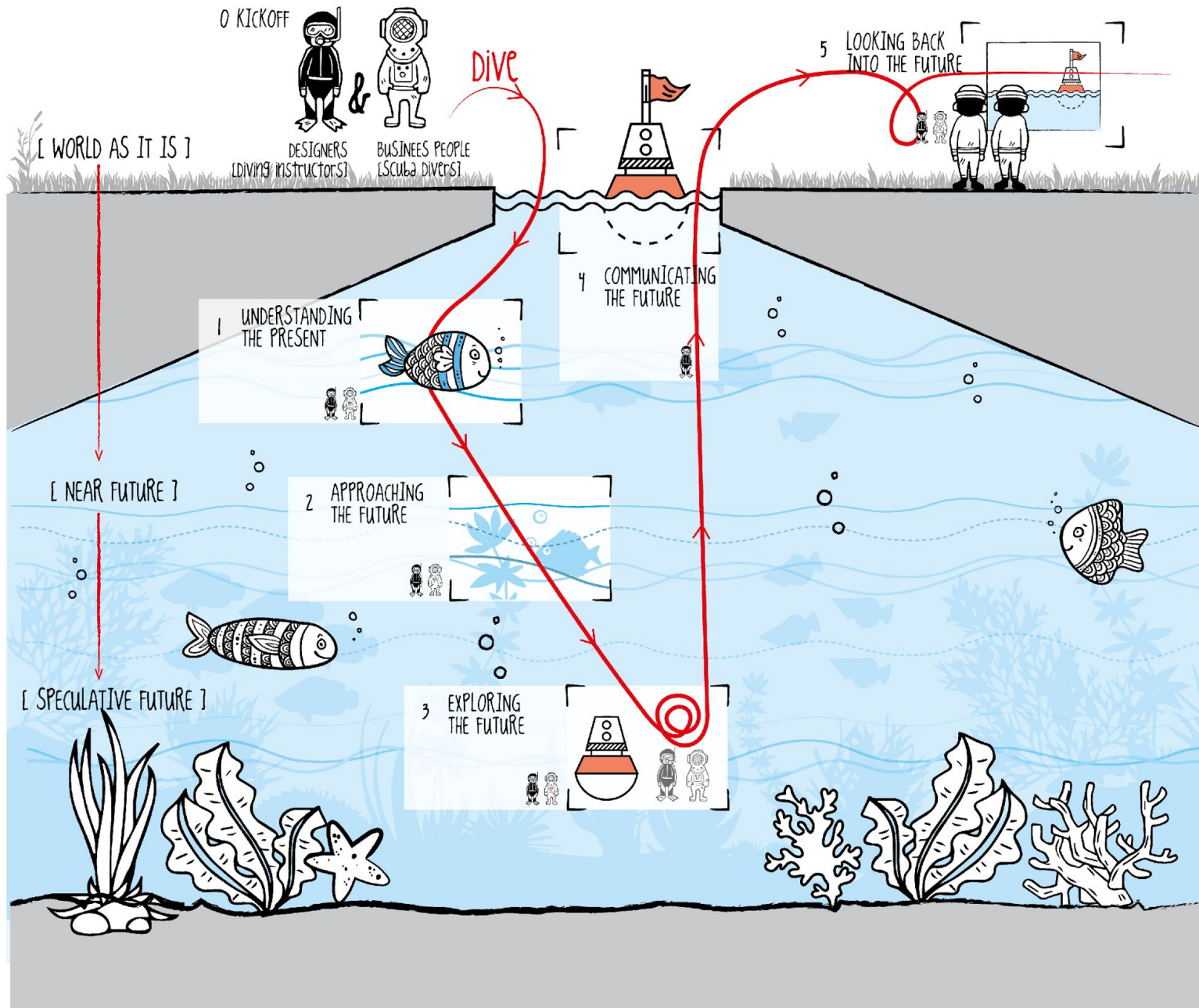
Lessons

- The activities were sufficient to make the concept car with few resources: ***forty hours of a senior designer.***
- Using a ***rough prototype***, at the earliest phase of the process, was tremendously useful as it gives us time to reflect on the experimental artifacts and the service, the concept car, and therefore, collect more ideas about its context, the future.
- The ***story*** was useful to envision the interaction between the system and the user in the future context.



DIVE

A design-led futures technique that assists designers in making and sharing vision concepts for SMEs.



Continental Energy 2030

a concept car for Continental Boilers

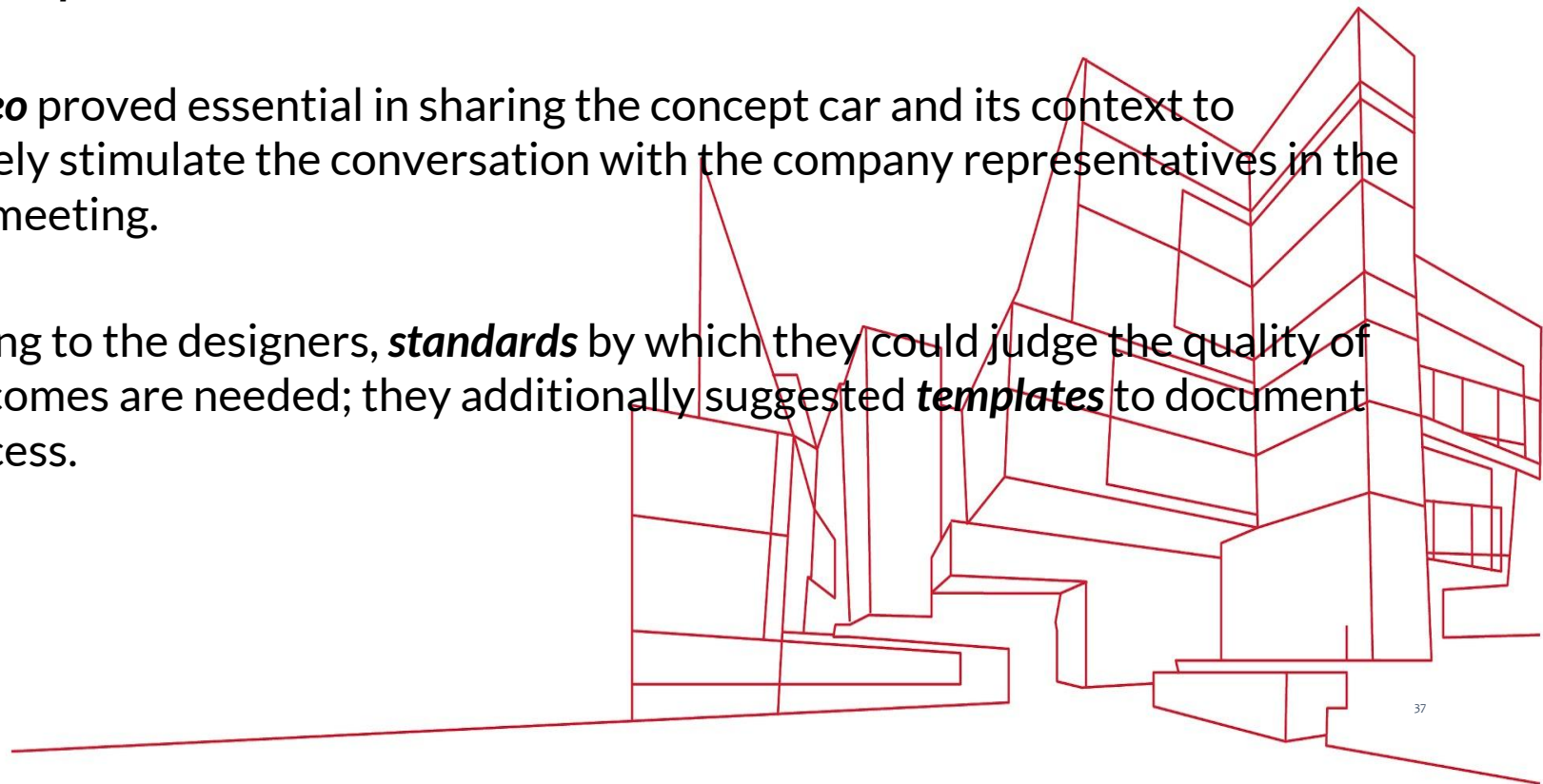


A service that includes the selling of steam and hot water and the renting of portable boilers and heat exchangers. To support this service, the company will offer the client a mobile app to control its consumption and receive technical support.



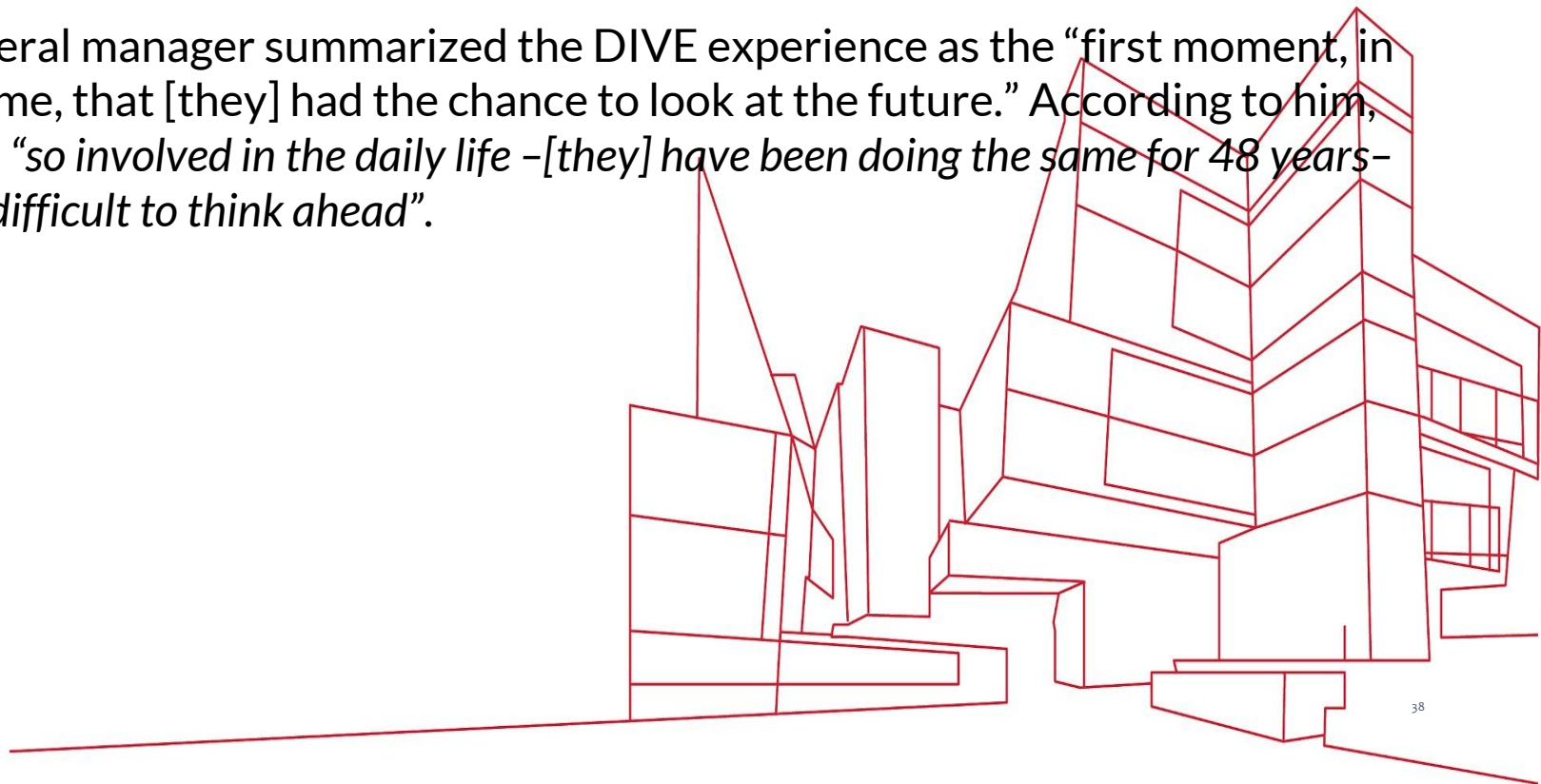
Lessons

- This iteration was useful to consolidate the definitive activities and the technique's resources: *forty hours of the senior designers' time & ten hours of the company representatives' time.*
- The **video** proved essential in sharing the concept car and its context to effectively stimulate the conversation with the company representatives in the closing meeting.
- According to the designers, **standards** by which they could judge the quality of the outcomes are needed; they additionally suggested **templates** to document the process.



Lessons

- The general manager summarized the DIVE experience as the “first moment, in a long time, that [they] had the chance to look at the future.” According to him, they are “*so involved in the daily life –[they] have been doing the same for 48 years– that it’s difficult to think ahead*”.



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SMEs are defined as organizations employing fewer than 250 people and with an annual turnover of less than EUR 50 million (European Commission, 2003). They represent the vast majority of the global productive sector, giving jobs to two-thirds of the world's population (United Nations Environment Programme, 2003).



**María, general
manager & owner**

fictional character


Marliou
FORMULACIÓN EXPERTA



A Colombian medium-sized enterprise focused on hair care products.



Goncho, general manager

fictional character



A Colombian small-sized family enterprise focused on the manufacture and delivery of steam boilers, hot water systems, and heat exchangers.

Although SMEs are concerned about the future and want to leave a legacy to their families and communities, they rarely think about the future in more detail mainly because of

*a lack of resources &
the urgency of the present.*





Futures techniques -the variety of ways to think, map, and influence the future (Hines, 2016)- can be classified into two categories: management-led and design-led (Mejia, Pasman, & Stappers, 2016).



Future energy scenarios by Stewart (2016)

Concept car Buick Y-Job by General Motors (1938)

management-led

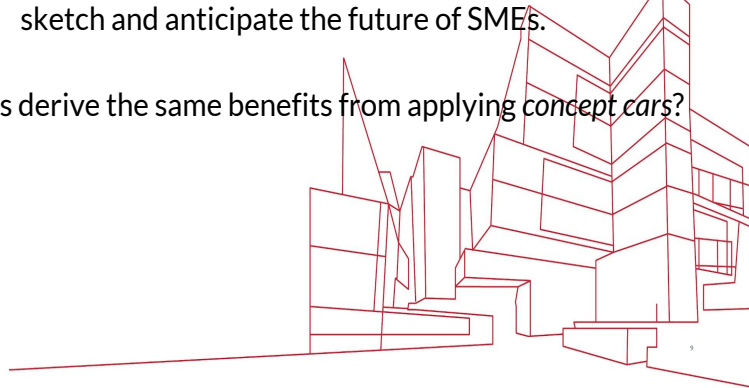
design-led

Management-led futures techniques pursue a systematic, analytical and verbal process, which usually ends in rational outcomes targeted at specialized audiences. Typical examples of these techniques are technology roadmapping, scenario thinking, and trend analysis.

By contrast, design-led futures techniques “engage people more viscerally in futures conversations” (Candy & Dunagan, 2016), bringing futures techniques “out of the abstraction and into the experience; into the body” (Candy, 2010). These futures techniques do not follow a cognitive reasoning process but instead use the designerly way of knowing, which translates abstract questions into concrete objects (Cross, 1982), to creatively explore speculative futures.

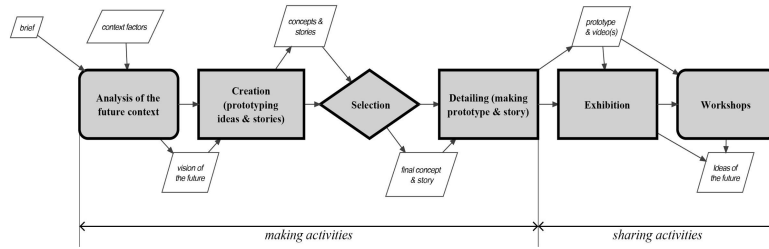
Design-led futures techniques appear to be a promising way to sketch and anticipate the future of SMEs.

Can SMEs derive the same benefits from applying *concept cars*?



The development of a design-led futures technique for SMEs

A hands-on process to explore and share the future



Concept cars / process

Visual synthesis, prototyping, and storytelling.

**An experimental artifact of the future, unrestricted by constraints
imposed by the present**

prototype

video

audience

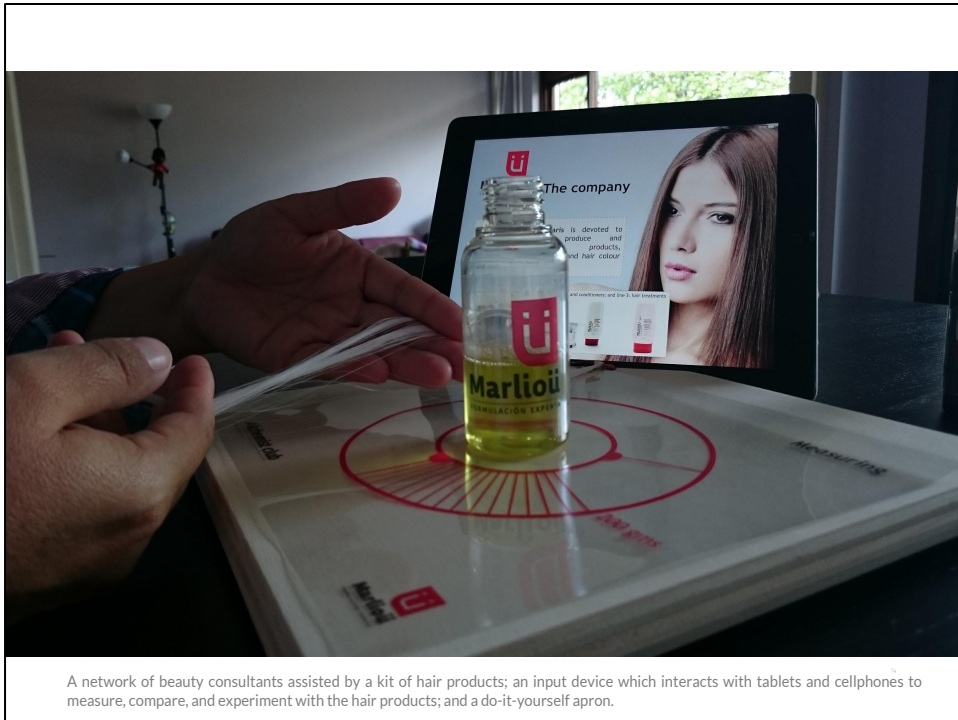


Concept cars / outcomes

Exhibition of the Peugeot Exalt concept car at the 85th
International Motor Show, Geneva, 2015.

The Alchemist Club 2025

a concept car for Marliou[®]

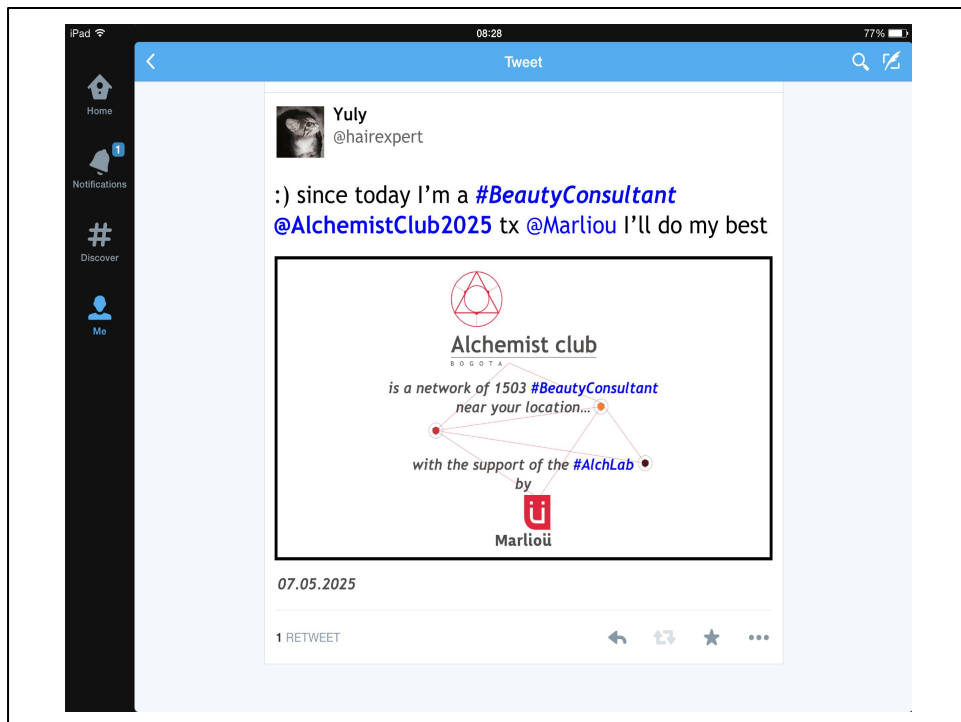


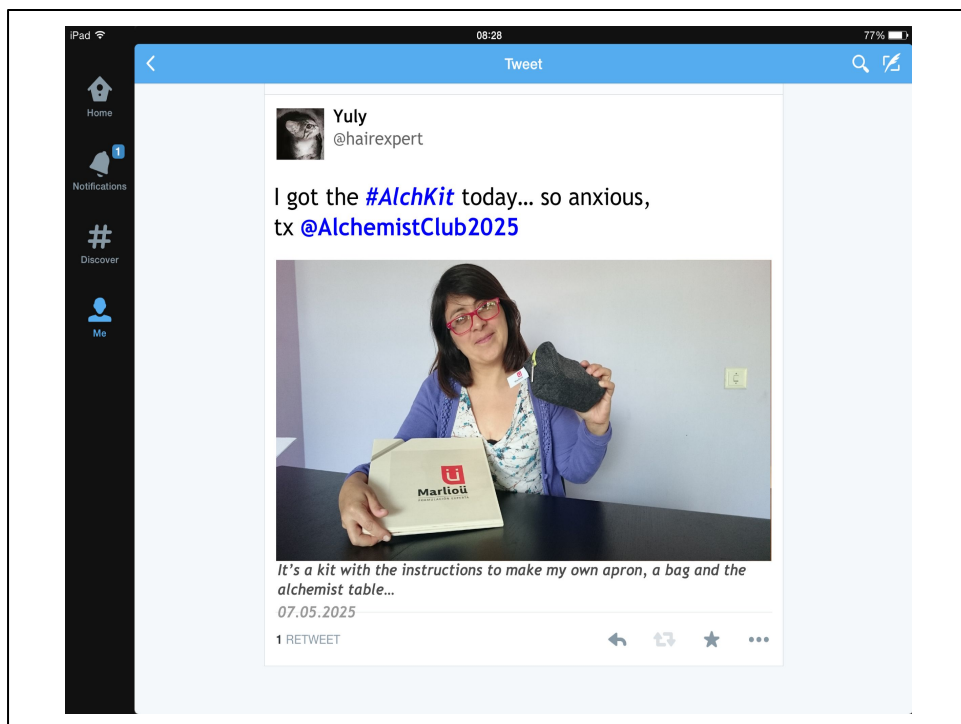
A network of beauty consultants assisted by a kit of hair products; an input device which interacts with tablets and cellphones to measure, compare, and experiment with the hair products; and a do-it-yourself apron.

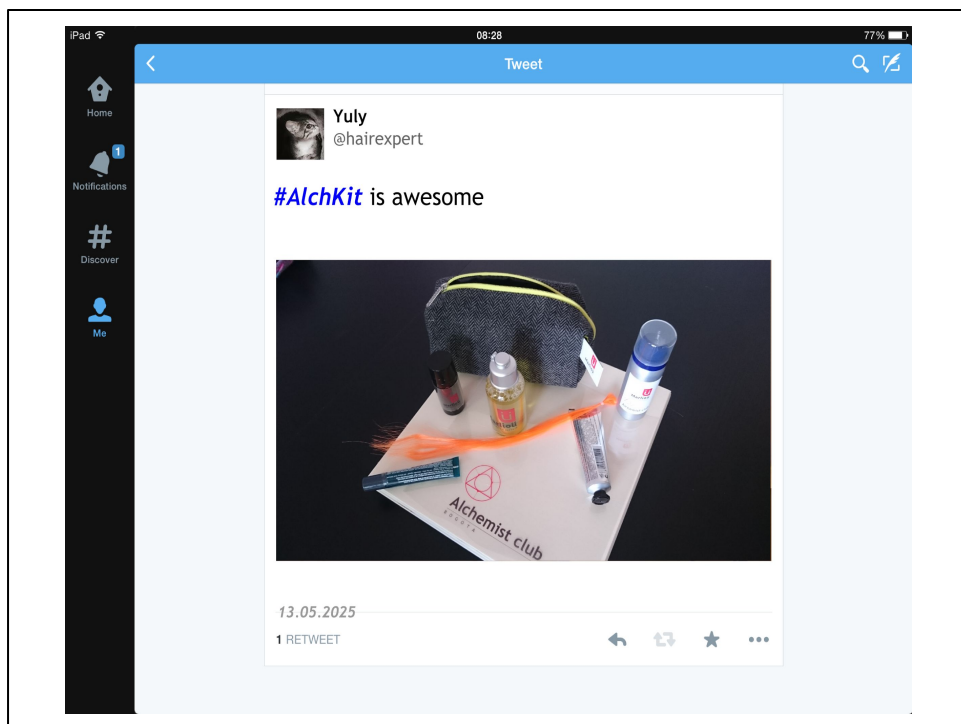
The Alchemist Club 2025 is a network of beauty consultants assisted by a kit of hair products; an input device which interacts with tablets and cellphones to measure, compare, and experiment with the hair products; and a do-it-yourself apron. All these elements are supported by a mobile app which trains the beauty consultants and collects insights from the clients.



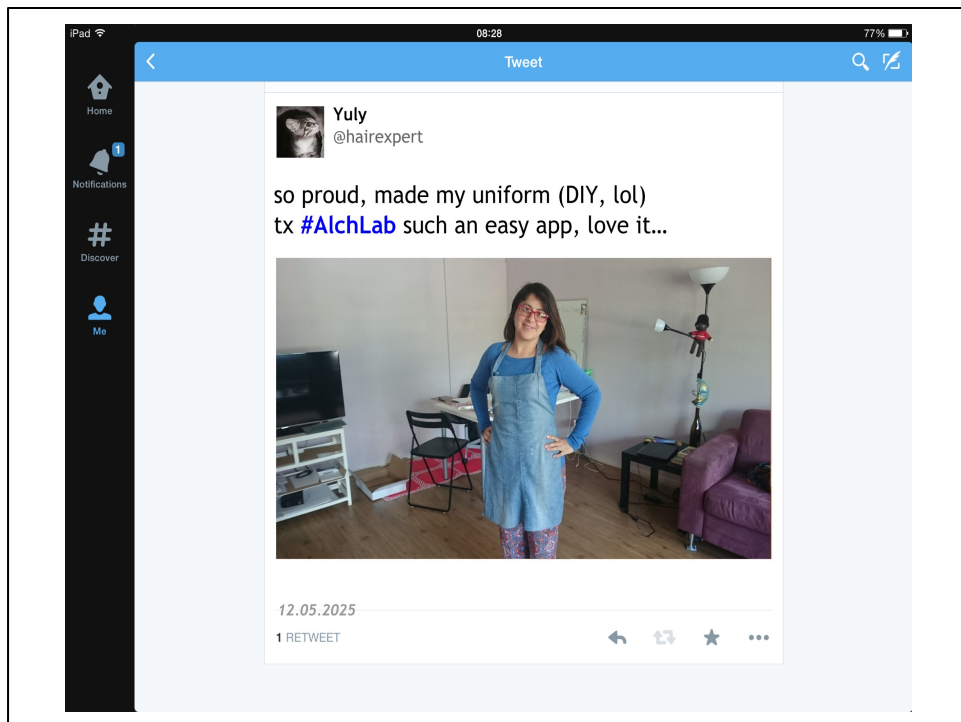
Finally, I developed a sequence of screenshots of a Twitter account to share the concept car. The sequence of tweets presents the story of a fictional beauty consultant, part of The Alchemist Club, in 2025.

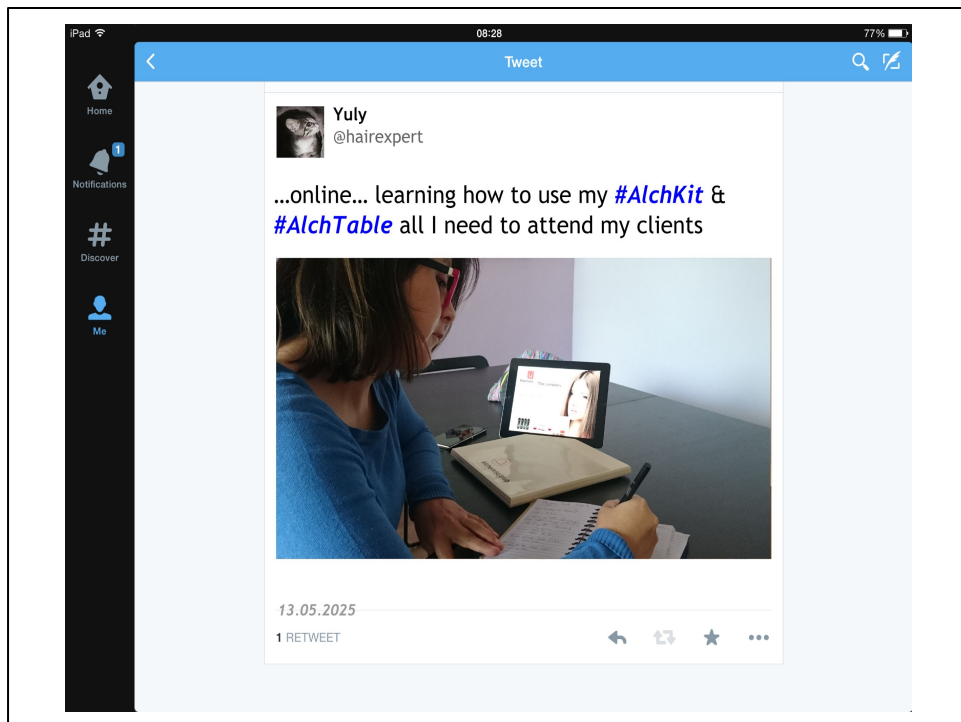


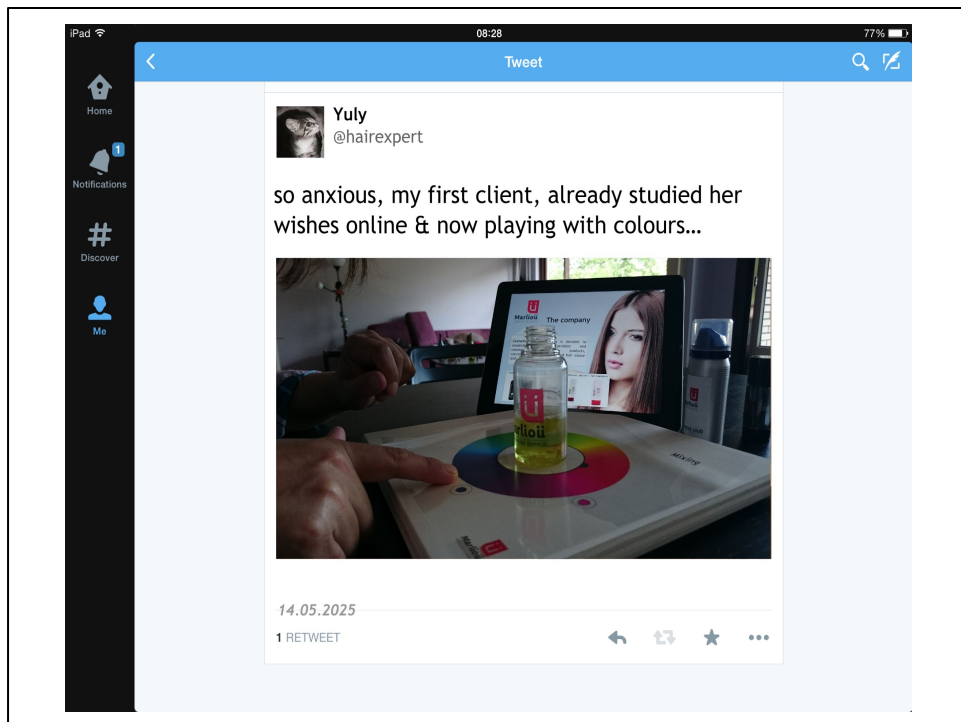


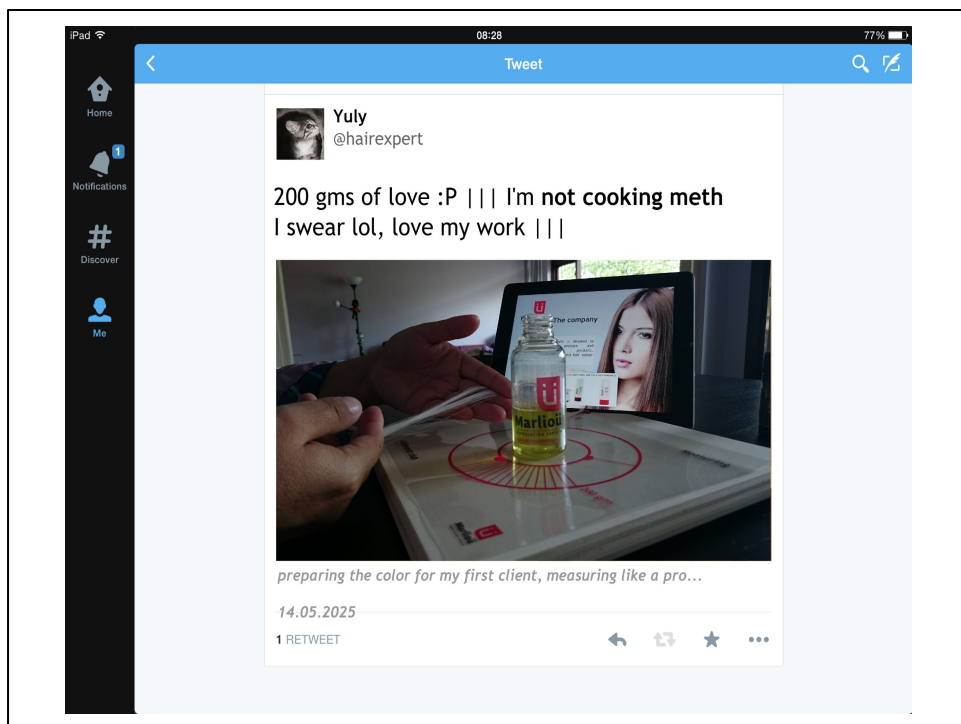


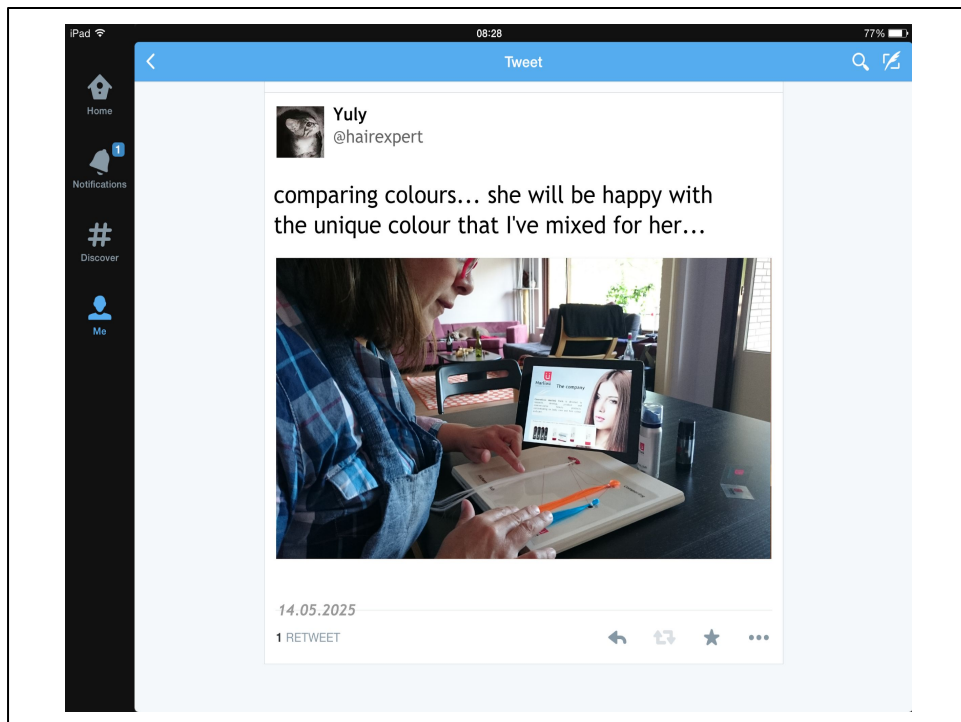


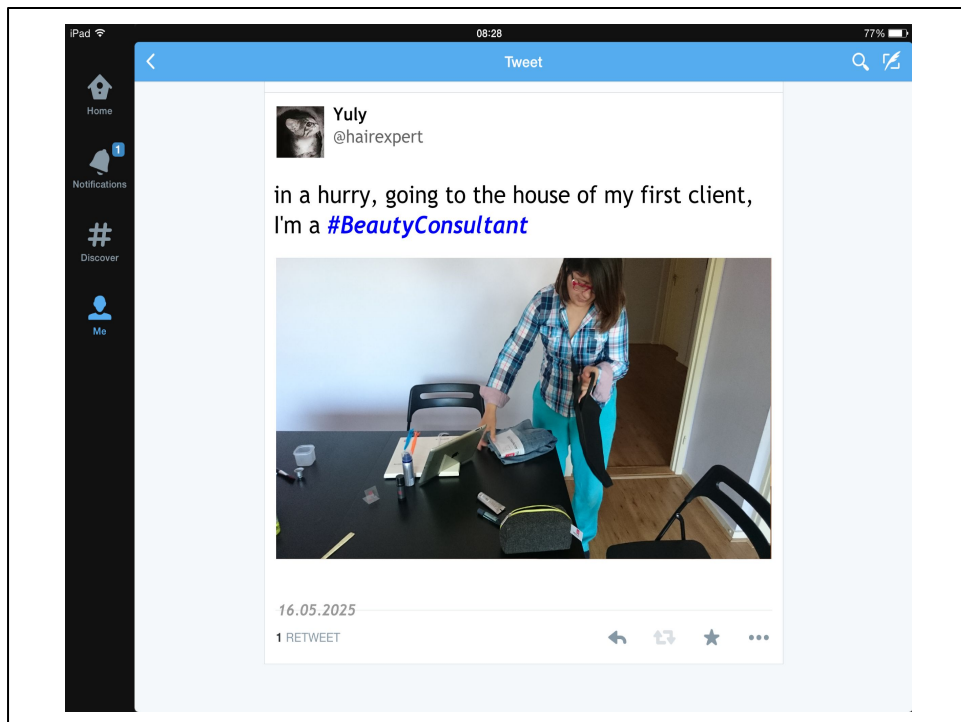


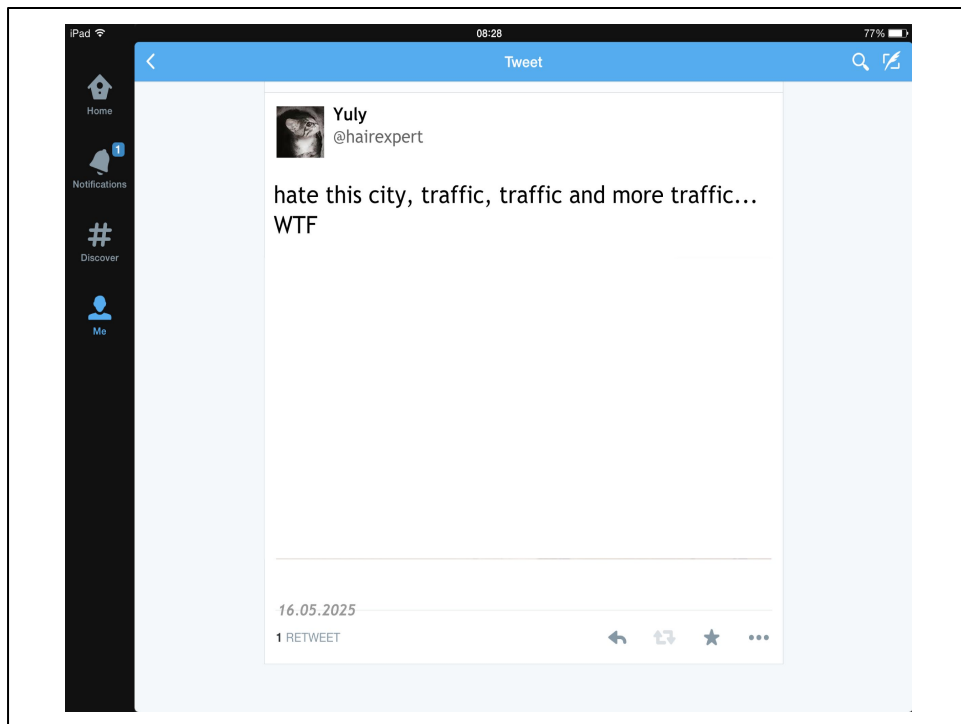


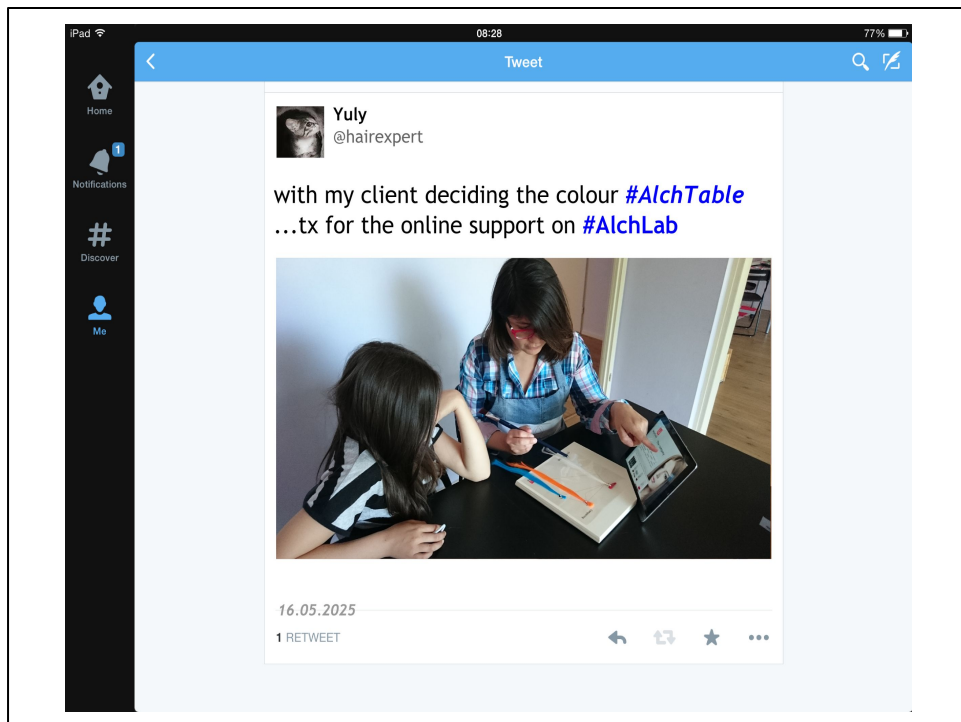


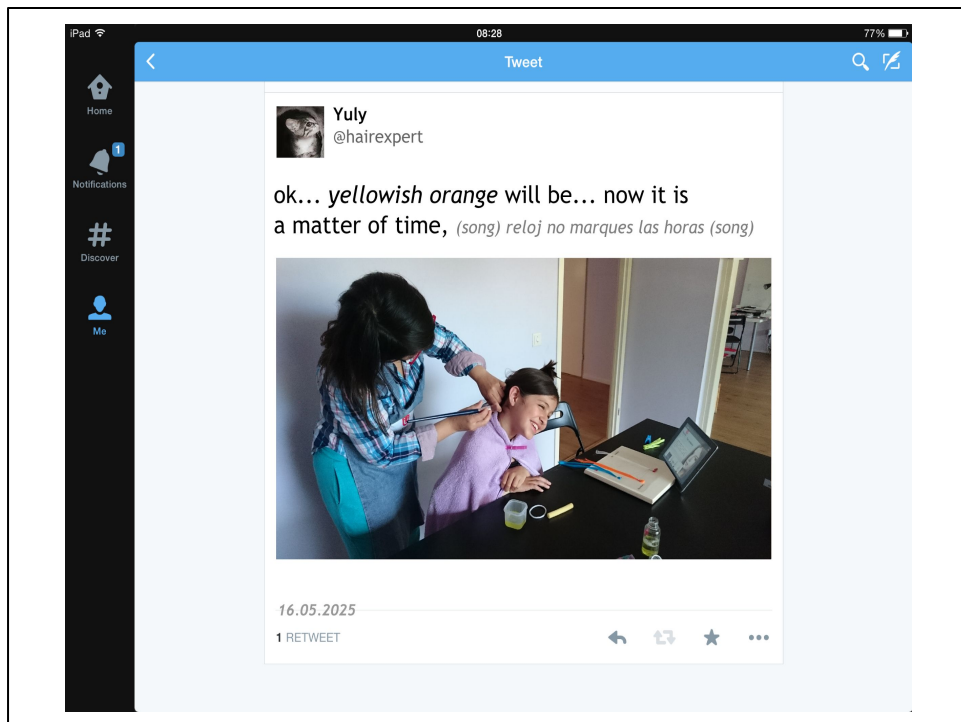


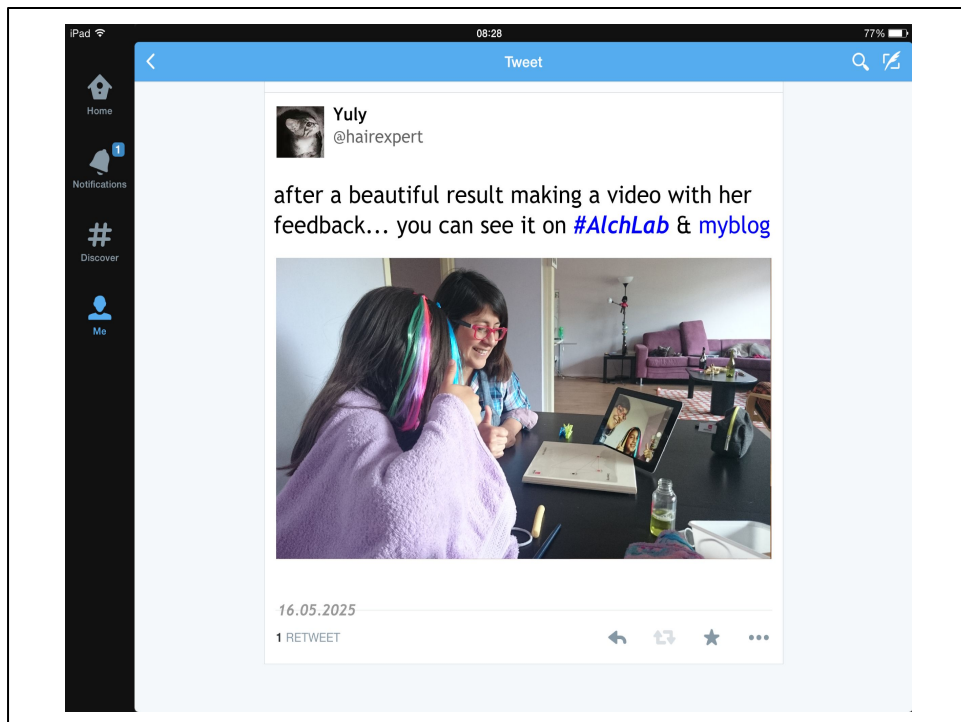








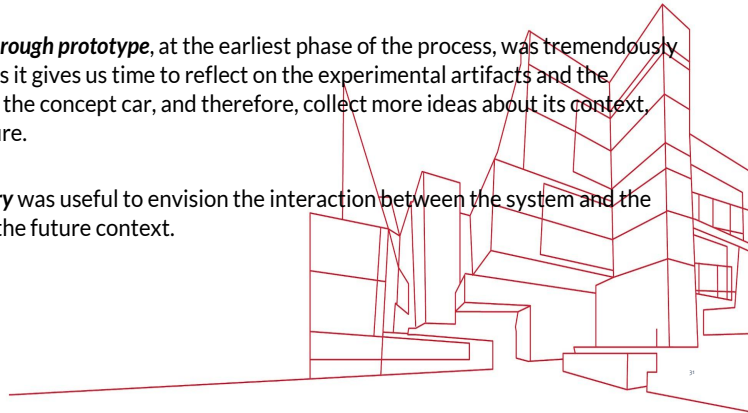






Lessons

- The activities were sufficient to make the concept car with few resources: **forty hours of a senior designer**.
- Using a **rough prototype**, at the earliest phase of the process, was tremendously useful as it gives us time to reflect on the experimental artifacts and the service, the concept car, and therefore, collect more ideas about its context, the future.
- The **story** was useful to envision the interaction between the system and the user in the future context.



The activities were sufficient to make the concept car with few resources: forty hours of a senior designer.

He incorporated a company evaluation, prior to the future context analysis. In this activity, the first author was guided by a powerful analogy that, with little time, brought plentiful insights into the company. However, a visual aid is needed to reinforce this analogy. To formulate a vision, a simplified STEEP analysis social, technological, economic, environmental, and political was sufficient.

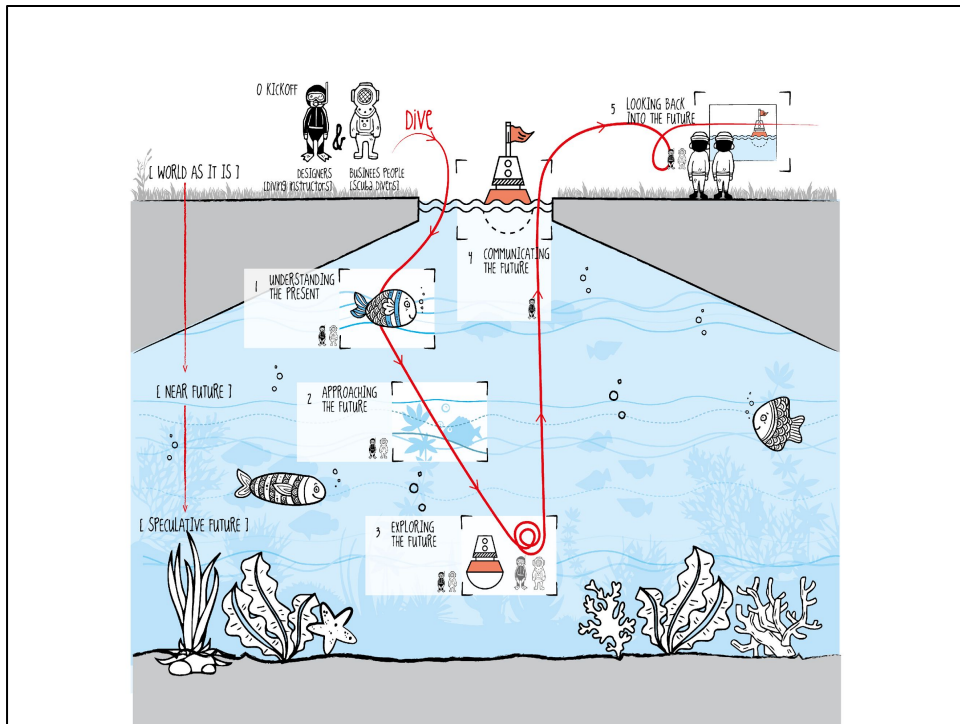
After that, again with little time, the first author tested the initial idea using rough prototypes in a role play. This leap out of the abstraction of the company's diagnosis and the context factors into the concept car, at the earliest phase of the process, was tremendously useful as it gives us time to reflect on the experimental artifacts and the service, the concept car, and therefore, collect more ideas about its context, the future. However, we needed a closing meeting where the enterprise gets to implement the concept car, and the recommendations emerge in

consensus with the company representatives, instead of just from the designers.

At a content level, this iteration gave evidence that DIVE starts by analyzing the company values and continues by identifying the values of the human beings, who are or will be related to the enterprise. The technique ends with a concept car, an artifact that explores the desirable interactions, deeply informed by those values, between the company and these people in the speculative future.

DIVE

A design-led futures technique that assists
designers in making and sharing vision concepts for SMEs.



DIVE: Design, Innovation, Vision, and Exploration

The technique consists of a quick dive into the depths of speculative futures and a swim back to the world as it is. During this journey, designers act as instructors and the company representatives as scuba divers.

Initially, underwater, the company is seen as a fish that swims in calm or troubled waters.

Instructors then accompany the divers in envisioning future waters and defining a vision.

Using this vision as an inspiration, instructors and divers draw, make prototypes, and create stories to set up the vision concept, resulting in a rough prototype and a video.

Finally, on land, the instructors use these artefacts to spark a conversation among several people about the future of the fish, shining a light on the decision-making in the present.

Continental Energy 2030

a concept car for Continental Boilers



A service that includes the selling of steam and hot water and the renting of portable boilers and heat exchangers. To support this service, the company will offer the client a mobile app to control its consumption and receive technical support.

Continental Energy 2030, a service that includes the selling of steam and hot water and the renting of portable boilers and heat exchangers. To support this service, the company will offer the client a mobile app to control its consumption and receive technical support.

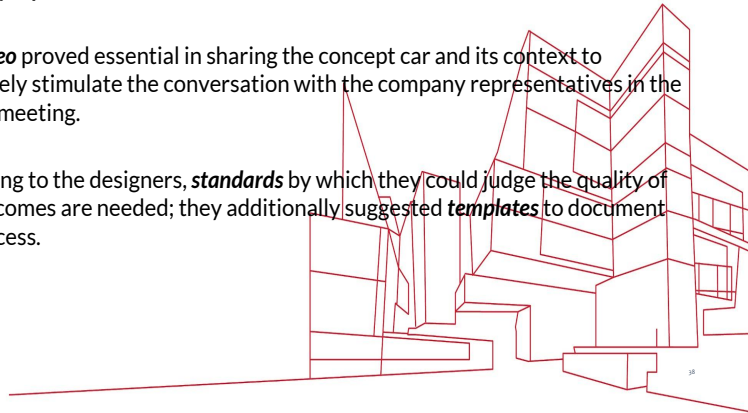


https://www.youtube.com/watch?list=PL1Mmw93_pO4jAicv1TQHaFUF57EB4dNY1&v=idd8AfZIW6U

Continental Energy 2030, a service that includes the selling of steam and hot water and the renting of portable boilers and heat exchangers. To support this service, the company will offer the client a mobile app to control its consumption and receive technical support.

Lessons

- This iteration was useful to consolidate the definitive activities and the technique's resources: *forty hours of the senior designers' time & ten hours of the company representatives' time.*
- The **video** proved essential in sharing the concept car and its context to effectively stimulate the conversation with the company representatives in the closing meeting.
- According to the designers, **standards** by which they could judge the quality of the outcomes are needed; they additionally suggested **templates** to document the process.



This iteration was useful to consolidate the definitive activities and the technique's resources: forty hours of the senior designers' time and ten hours of the company representatives' time. Although this iteration needed an extra activity –a closing meeting– and more resources than the previous one, the consolidated activities were sufficient to make and share the vision concept within the limitations of an SME.

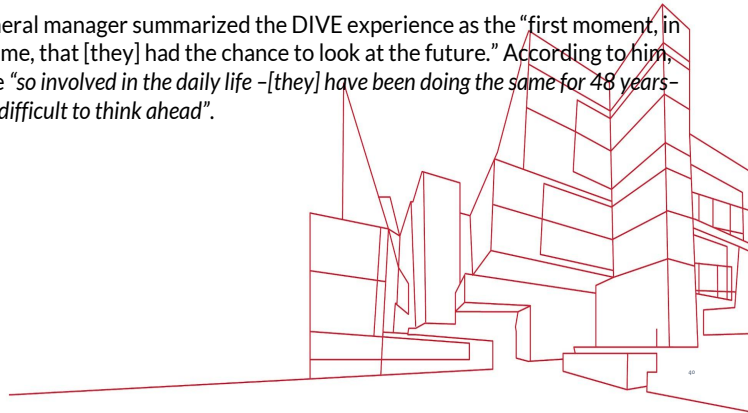
Both the initial analysis and making the video took longer than expected, but the video proved essential in sharing the concept car and its context to effectively stimulate the conversation with the company representatives in the closing meeting.

According to the designers, standards by which they could judge the quality of the outcomes are needed; they additionally suggested templates to document the process. Considering that not all designers have the same skills facilitating workshops, they also proposed incorporating recommendations on how to deal with the company representatives, who tend to talk mostly about the present instead of the future, especially during the closing

meeting.

Lessons

- The general manager summarized the DIVE experience as the “first moment, in a long time, that [they] had the chance to look at the future.” According to him, they are “so involved in the daily life –[they] have been doing the same for 48 years– that it’s difficult to think ahead”.



The company representatives were positively surprised by the way the designers incorporated the company values within the concept car, and the insights delivered by this exercise that they described as “design for strategic innovation.” They considered that DIVE is beneficial to identify short-term challenges; some of them related to the product, such as the question phrased by the general manager: “how do our boilers adapt to different types of energy?”; and others to the general business strategy, such as the value proposition formulated by the director of marketing and sales: “I don’t sell boilers, I sell energy solutions.” Having identified these challenges, company representatives put them on the agenda, stimulating their feeling of urgency motivated by the way the ‘world as it is’ is changing. They also identified potential alliances and allies that help the enterprise face this change. The general manager summarized the DIVE experience as the “first moment, in a long time, that [they] had the chance to look at the future.” According to him, they are “so involved in the daily life –[they] have been doing the same for 48 years– that it’s difficult to think ahead”. However, he identified that “it’s hard to manage change within the

enterprise's culture, in particular when it involves family members' interests. But this exercise was useful to see the company in the light of international trends and understand their potential effect on the business." He also mentioned that "it was nice to see a concrete example of our environmental values in practice and guiding our future actions."

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