Foresight in corporates
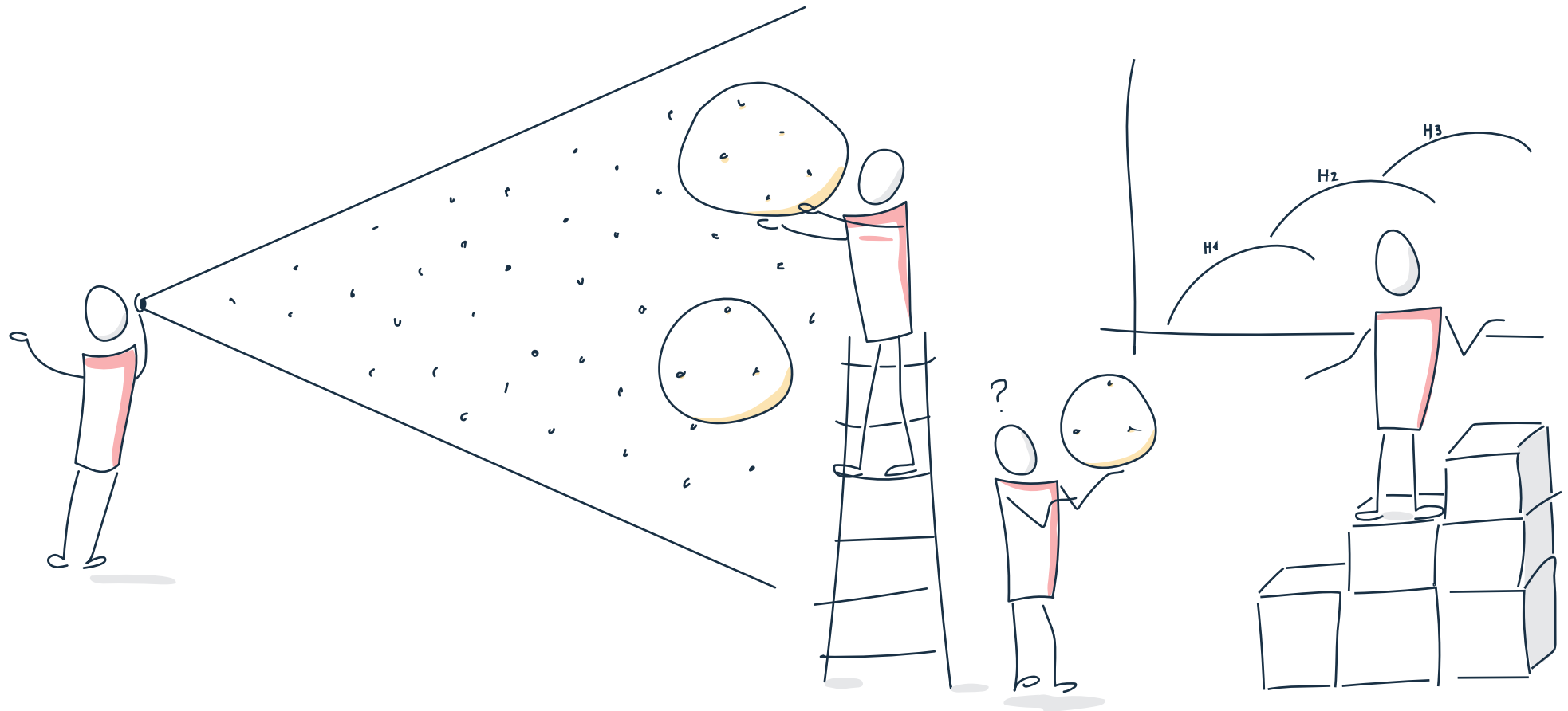
A framework that combines design thinking and foresight activities to support corporates in fast-paced innovation times

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Foresight in corporates

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Framework and workshop

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Preface

During the second semester of my master studies in Strategic Product Design, in Autumn 2017, I had the chance to get to know the company Barco and Guy van Wijmeersch, the Director of Innovation and Design Thinking. My first work for Barco, executed with three more SPD colleagues was focused on the improvement of the "landing" of customer feedback in Barco, and it was a success. Although the project was presented on a very conceptual level, it brought inspiration in Barco. And with this, my willingness to continue supporting the organization with their challenges.

During the first talks with Guy, it was possible to see that the company was facing a big change, but I couldn't imagine how big it would turn out to be (the firm was reorganized in the middle of my graduation time-frame). Since two years ago Barco counts with a new leader, the CEO Jan De Witte, and together with him, a renewed strategy. All these upgrades are definitely initiating a change in mindset in the organization, and are making employees and top-managers reconsider the way they approach innovation.

While defining the graduation project, the first ideas came, and the topic of corporate foresight and validation arose as priorities for Guy and for Barco. Since last year, I developed a special affection for trends and megatrends and for finding inspiration in other businesses and innovations. While working at The Young, I designed proposals of creative brand strategies for clients, based on trends and innovations that I researched, and I enjoyed that way of working very much. Therefore, when I started reading about foresight and The Corporate Startup (Viki, Toma and Gons, 2017), recommended by Guy, I knew that the topic was for me.

First of all, I would like to thank my supervisory team for accompanying me along the journey. To Christine and Gert Hans for their big effort to make me focus and be concrete at every step of the process. The constructive criticism and asking me about every little detail helped me enormously in sharpening my research focus, the solution and the way to make it possible in Barco. Thank you for understanding the complexities I had to deal with and for giving me the best tips ever.

I would like to thank Guy Van Wijmeersch for making this project possible, for all the support and for finding the right connections I needed in Barco. The space and freedom given to me at any time during the project have been very valuable for my personal development.

Finally, thanks to my SPD friends for the support in moments of uncertainty. To my family, for carefully listening to my challenges and for their huge and daily support. And thanks especially to you, dad, for being willing to read until the last coma of this project; to Inés, my sister, for the amazing help with the audio processing of the animation and to Thomas for the great pictures and support.

I'm excited to present my master thesis to you! Enjoy the reading,

Blanca Fernández Hernando

Executive summary

This master thesis is written for the master program Strategic Product Design with the Belgian company Barco NV as a client. At the beginning, the main objective was to gain a better understanding on the current situation of the organization around foresight activities, their barriers and challenges. The aim was to later develop a solution that could help them to overcome those challenges discovered and to have a more proactive attitude towards the future.

Barco NV is a well-known technology company with a tradition as a hardware manufacturer. Barco is currently going through a digital transformation and counts on a renewed strategy that also considers customer centricity and business innovation as starting points for innovation as relevant as technology. However, in practice this is much more complex, and the firm is step by step evolving into that ideal. The company tends to end up focusing mostly in the short term. This happens, among other reasons, because of a lack of skills, a non-tangible or workable company vision, and the self-pressure on meeting their economic plans. This causes the proposition of short-term businesses and therefore limits the explorative attitude in the firm.

To support in this challenge, the initial phase of the thesis was focused on gaining a better understanding on the current challenges in Barco around foresight activities. As such, literature study in corporate foresight and some of its methods like scenario planning was employed. In parallel, internal research based on interviews with Barco employees gave the first keys to discover the barriers that the firm was facing and the feeling towards them.

Thanks to the research done and the insights gained in Barco, the focus was on defining and co-creating a workshop. This workshop would enable Barco teams to shape future scenarios and improve their foresight skills. However, due to certain events that were taking place in Barco, this solution couldn't be pursued and a new opportunity emerged.

The Scenario Creation workshop was upgraded into a theoretical framework, which was developed with the input of three technology corporates and the recommendations of two consultants. All these professionals had links and personal interest in topics around innovation, foresight, design thinking and strategy. This framework was created to support Barco in having a better and holistic understanding on the business context in which the firm operates and its surroundings. In this way, it will help them in anticipating to changes in the three horizons of innovation. At the same time, it brings a change in mindset where the validation of hypotheses about future innovations plays a crucial role by involving external experts and end users in the scenario creation process. Finally, it brings a better way to communicate innovation and to test future scenarios: externally, to get them challenged by experts, and internally, to create a shared language for innovation.

The foresight framework is characterized for combining design thinking principles, like user-centeredness, iteration, validation, creativity, inspiration and abstract and concrete thinking, with deep knowledge in foresight activities and scenario planning.

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"We want to fail earlier. The sooner and faster we learn from the insights, the less expensive it is for us"

Guy Van Wijmeersch, Director Innovation & Design Thinking at Barco

1
Introduction

The chapter 'Introduction' is divided in two sections. The first one elaborates on the company Barco and its current situation and context. It finishes with relevant conclusions that will constitute an important part of the basis of the project.

The second section focuses on explaining the project scope, the desired outcome and the approach and methodologies used for the project.

The relevance of this chapter lies on the deeper understanding gained around what the organization theoretically aims to achieve. What they have already tried and in what direction does top-management thinking go. Some challenges to achieve that ideal status start to arise in this chapter, which will be fulfilled in Chapter 2.

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1.1
Barco

Barco is a technology corporate founded in 1934 in the town of Poperinge by Lucien de Puydt, in the Flemish-speaking region of Belgium. In the beginning, the initial business was focused on assembling radios from parts imported from the United States, which gave the name to the company, the Belgium American Radio Corporation, now known as "Barco" (Barco, 2018).

Today, Barco is present in a "world where data and rich content are expanding exponentially" and the firm responds to it by designing technology to provide visualization and collaboration solutions that empower their customers to make "meaningful connections". In this world they have set their mission in "Enable Bright Outcomes" (Barco, 2018).

Barco businesses are based on offering different types of technology (Figure 1.1) (Barco Annual Report, 2017):

Display technology: from high resolution medical displays to video walls and LED solutions.

Projection technology: a wide range of projectors used for meetings rooms, digital cinema and virtual reality among others.

Collaboration technology: connectivity platforms including networking and cloud-based capabilities to facilitate uninterrupted and shared access to data anytime and anywhere.

Image processing: their portfolio includes image processing tools and servers to guarantee "the perfect image playback and management".

The company focuses on three main business areas (Figure 1.2): Entertainment, Enterprise and Healthcare. Barco enables the creation of magical moments and breathtaking experiences within the Entertainment division. The Enterprise division is dedicated to help companies achieve their goals and facilitate collaborative work by supporting people to work smarter together. Finally, Barco is also an enabler of shared insights in the Healthcare sector, with the aim to protect the health and safety of millions. Entertainment represents 48% of the total revenue, Enterprise 30% and Healthcare 22%.

To conclude, Barco has global presence with more than 3.500 employees in 90 countries, clustered in four regions: America (Americas), Asia-Pacific (APAC), Europe and Middle East (EMEA) and China.
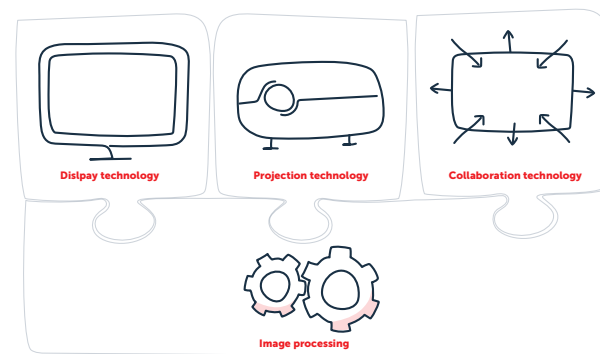

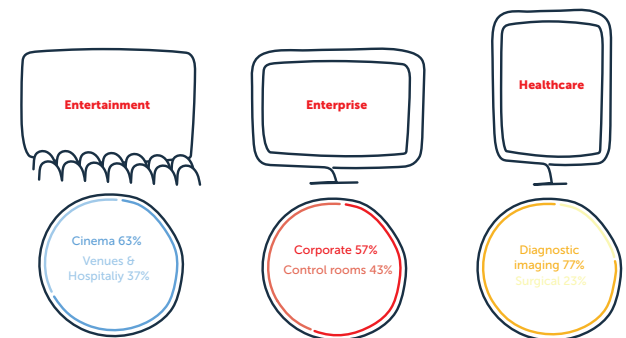*Figure 1.1: Barco technology. Adapted from "Our technology" Barco Annual Report (2017)*

Figure 1.2: Barco business areas. Adapted from "Our activities" Barco Annual Report (2017)

Company structure

Barco is divided into three divisions. According to Stoimenova, Niya (2017), an MSc SPD student who graduated at Barco in 2017, "the three main business units work primarily in their own silos and thus, the collaboration among different internal stakeholders can be difficult".

The siloed organization has an effect even on the way Barco products are sold to current customers. As Niya reflects in her thesis (Stoimenova, 2017), if an IT manager of a hospital sees a salesperson of Healthcare using ClickShare (an Enterprise product) and wants to purchase it for the hospital, the salesperson would not be able to help that customer directly because products from different business units belong to different cost

centers. In addition to this, because there is a big focus on the product lines, different go-to-market strategies are created for them. Which means that if the same customer wants two products that belong to different divisions, probably they will have different go-to-market strategies and will be purchased differently. This is because, in words of Guy Van Wijmeersch "we don't see the hospital as one account, we don't look at the go-to-market strategy from a customer point of view but from a product line point of view". This is just one example of the consequences that operations in a siloed organization might have. However, there are advantages like higher independence which usually speeds decision making processes in large organizations.

Since there are no official documents available in relation to this subject, the structure presented in Figure 1.3 is a combination of Niya's visual and some changes applied thanks to the input of Guy van Wijmeersch, the graduation project company mentor.

Figure 1.3: High level company structure. Adapted with changes from "Unlocking innovation. Building a design-led ambidextrous organization" by Stoimenova, N. (2017) (Unpublished master thesis). Delft University of Technology, Delft, The Netherlands.
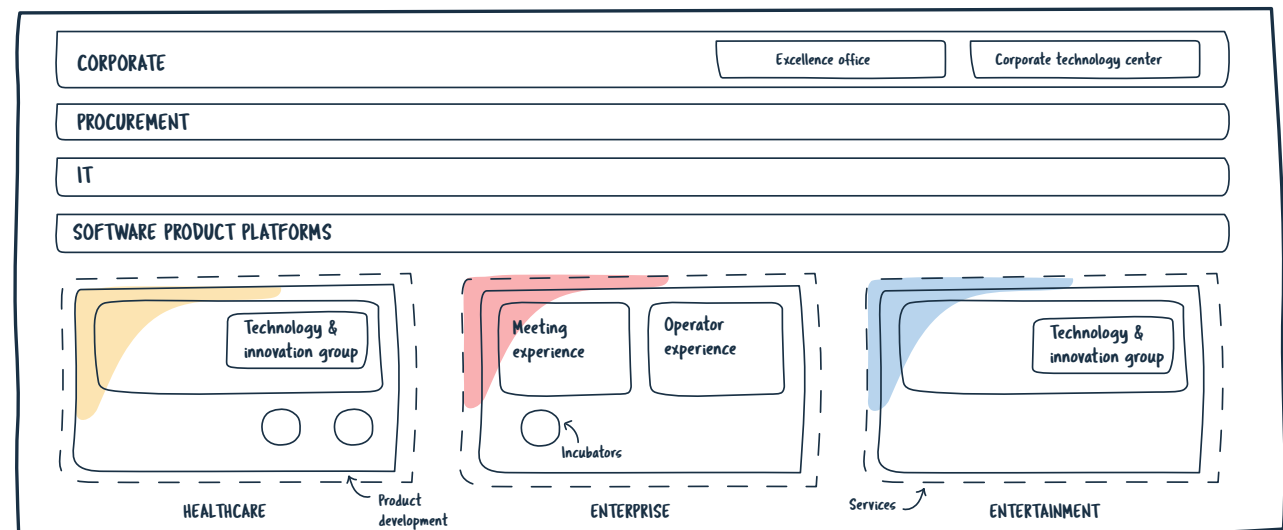
As a technology-driven company, 24% of the employees fall under the research and development title (engineers) in a firm that employs 3.590 people. Without considering manufacturing and logistics roles, R&D constitutes the most numerous workforce in Barco (840 people) followed by sales (517).

Barco collaborates with its partners like distributors and customers such as resellers, installers and integrators in the definition of new value propositions. The firm also stays in close contact and works together with universities and research institutions like the Delft University of Technology and IMEC, and its suppliers by establishing Strategic Alliances.

Customer or end user?

Barco has a considerable variety of clients that range from public institutions to private companies spread across the world. Its clients vary from stadium owners to consultancies, hospitals, and airports, being some of its products used by the 40% of global fortune 1000 companies. Remarkable clients include Shell, Kinepolis, Reliance, NOS, Yokogawa, GE and Philips among others.

The way that Barco brings solutions to the market varies in three ways. Barco products can be marketed through a 'two tier model', 'one tier model' or 'direct channels'. In the case of the 'two

tier model', Barco's customer is the distributor who then offers the solutions to the reseller who, accordingly, offers them to the final customer who purchases the offerings. This implies that there exists a considerable distance between Barco and its final customers, and even more with the end users. These models provoke that Barco cannot have the full control over how its products flow in this chain, and how they finally reach the end user. This is even more challenging in industries in which the end user rarely is the end customer, which is, in fact, the majority of the

cases. For example, an IT manager of a hospital or corporate might purchase Barco products from a Barco reseller, but actually, the end users of those products are people like the radiologist or an executive assistant. This brings big challenges to the firm since it means that direct contact with the end user is scarce or at least difficult to manage and resources consuming, thus making the access to end-user insights more difficult. This complexity is visualized in Figure 1.4, representing a Barco Two-Tier model.
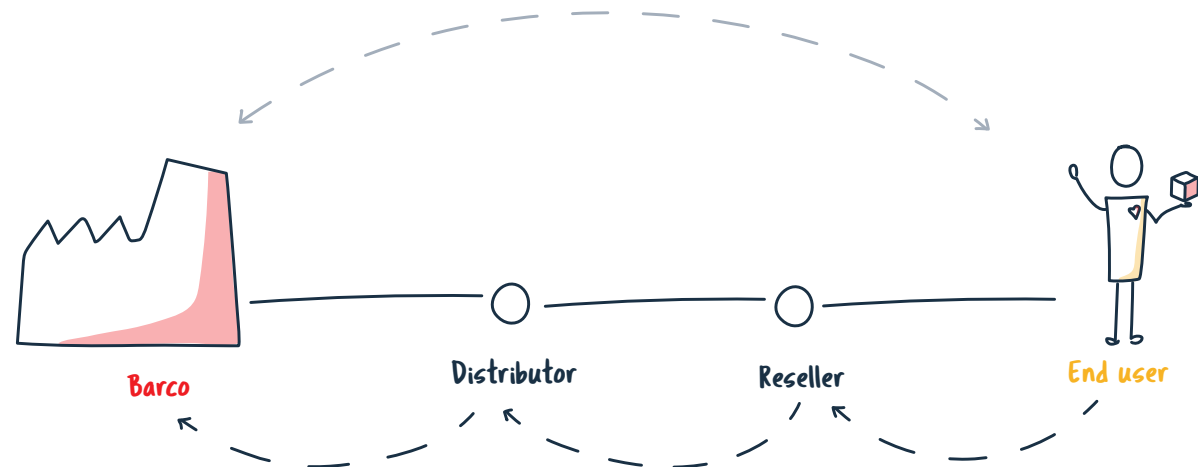

Figure 1.4: Two-Tier model at Barco. Adapted from the brochure "Enabling Bright Outcomes Together" (2017), one of the deliverables for the 'Design Strategy Project' course by Fernández, B., Fokker, R., Holierhoek, S., Van Selm, M., (2017).

Changing fast

We live in a rapidly changing world in which technology plays a crucial role. The expectations of people about everything surrounding their lives has shifted to demand for outcomes and seamless experiences rather than products. Barco sees technology as the enabler of these new ways of living, being reflected in the Barco Annual Report (2017), although believing in the power of combining these technologies with new business models and reframed value propositions.

Reeves & Deimler (2011) point out that adaptability and agility are the new competitive advantages for firms. In this era of risk and instability, where globalization, new technologies, and greater transparency create more complex challenges than ever, companies must learn to read weak signals from the external environment and act on them. They should act as if they had "antennae", that facilitate the capturing of those weak signals and quickly translate what they will imply for the organization.

In a world where people's attitudes, values and beliefs shift even faster than new inventions come to life, organizations must be prepared for the future. With the aim to ensure that today they make the right rational decisions because those will influence their own future. Even if studying the future might seem problematic at first sight, as Sardar (2013) mentions in his work, it isn't that different from arts, law, philosophy and other abstract disciplines, as it can also be studied in a disciplined and systematic manner. However, the study of the future does not have well-designated areas of research or fixed boundaries like other disciplines, and this makes it difficult to approach.

The combination of this changing world, the difficulty that big companies with heritage experience in adapting to the new environment and the challenges that the study of its future evolution brings, has remarkable consequences for big companies. As a result, many of them feel often paralyzed, unable to keep the pace of innovation.

Beyond hardware

Barco's new CEO, Jan De Witte, who took the lead in 2016, brought with him the willingness to go above and beyond, introducing the new strategy called "Say.Do." in 2017 (Figure 1.6). The firm is currently experiencing a big shift both in mindset and operations because of this renewed strategy, which is focused on delivering outcomes "beyond hardware". This implies software-related skills among other things as part of the company resources and will allow the entry of more service solutions in their portfolio.

Innovation has always been at the core of Barco, and technology is still its stronghold tool for the engineering minds to invent the next product that will set the tone in its market. Barco takes pride in its history as a production powerhouse, but the firm starts to put emphasis in the fact that innovation should go beyond products, including more customer-oriented practices and rethinking processes and business models (Barco Annual Report, 2017).

Figure 1.5: One of the struggles of well-established companies in adapting to the current pace of innovation

2013 - 2014
Gear up for growth in networked visualization global leadership

2015 - 2017
Strenghten global leadership in three target markets

2017 - 2020
Focus on innovation, performance and outcomes

Figure 1.6: Evolution of the strategy of Barco. Adapted from "Our Strategy" Barco Annual Report (2017)
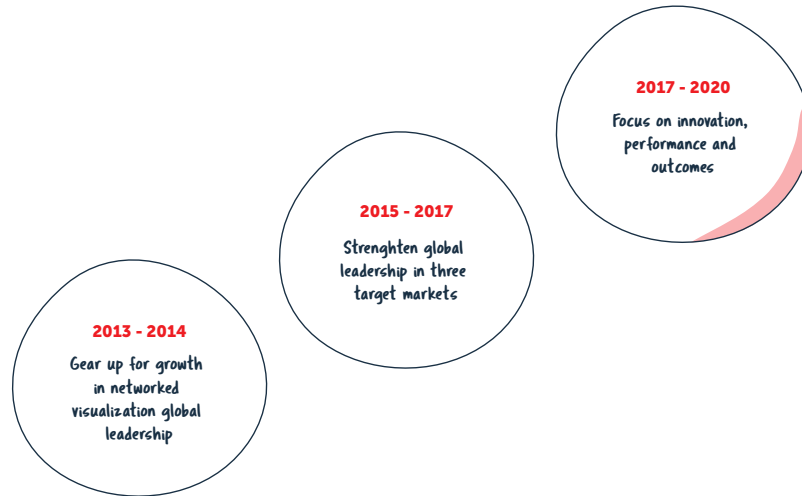
Introducing Design Thinking

The traditional way in which Barco has been innovating centered around technology applications, hardware, products (or how they call it, "selling boxes"), based on an inside-out innovation approach, brings today a big challenge for the company. Barco now needs to change its mindset and see innovation from a different perspective. In order to have a holistic understanding of its customers' needs and be able to offer meaningful outcomes to their end users. The introduction of software and services in their portfolio offer will imply new processes, different types of insights, new ways of collecting data and even rethinking the ways their products are marketed.

**"To ensure true innovation, we have to start from the customer's point of view"
-Barco Annual Report'17-**

According to the results of Mckinsey's latest design-related research (in what they claim to be "the most extensive and rigorous research undertaken anywhere to study the design actions that leaders can make to unlock business value"), companies need stronger design capabilities than ever before in this time when consumer expectations rise unstoppable and when the line between products, services and software is more and more blurred. Their results suggest that good design matters whether your company focuses on physical goods, digital products, services, or some combination of these. The results reveal that over a five-year

period, the design practices in the companies with Top-quartile Mckinsey Design Index scores (MDI rates companies by how strong they are at design), resulted in 32 percentage points higher revenue growth and 56 percentage points higher shareholder return growth compared with other industry peers. Some of their most significant conclusions are that design flourishes best in environments that encourage learning, testing, and iterating with users. They highlight the necessity to measure design performance as accurate as revenue, time or costs (McKinsey Design, 2018).

And Barco is aware of this, and as mentioned before, the firm has understood that innovation

goes beyond applying technology for technology's sake. The new strategy "Say. Do" talks about an innovation that starts "from the consumer's point of view". In this way of innovation, guided by Design Thinking principles, Barco steps in the shoes of their customers and partners to have a better understanding of their necessities and contexts. And once these insights have been understood, they are combined with the possibilities that the technology offers and with the requisites to achieve business success (Barco Annual Report, 2017).

"Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success."
- Tim Brown -

Design Thinking in action

Design Thinking is not only present in paper in Barco, but has come to life in different initiatives, many of them lead by Guy Van Wijmeersch, Director Innovation and Design Thinking. Some examples are the TexTalks, the Smart Innovation Days, design sprints and Hangar K, a cross-business co-creation platform where Barco has a couple of incubators. Barco is also introducing an agile way of working, which at the moment is mainly focusing around the software development scrum teams.

Guy is part of two programs of the governance board, which is in charge of the transformation that Barco is doing. One of the programs is focused on the digital transformation and the other one "is related to embedding agile way of working in our product development, for products and services, but also introducing design thinking as a methodology". In addition to Guy's role and as mentioned, Niya Stoimenova, a graduate MSc Strategic Product Design student, focused her thesis on "unlocking the potential for continuous human-centered innovation in Barco by building the foundations for a Design-Led Ambidextrous (DLA) organization" (Stoimenova, 2017).

Guy is a believer of experimenting and learning faster, in order to become smarter. However, after all the changes caused by the reorganization, he reflects:
"Our definition of innovation is changing. I introduced the 'Smart Innovation Days', which had the focus on having innovations that are smarter, but probably I am now thinking that it is more about creating meaningful innovations for our customers. Which is probably saying much more than just smart innovations. Because meaning is directly connecting to the outcome, to the purpose [...] you need to have a fast understanding of what different technologies could mean for different customers".
When he talks about learning faster he says *"we want to fail earlier, the sooner and faster we learn*

about the insights the less expensive it is for us". Barco has a strong engineering culture of making and developing, of making working prototypes. But according to Guy the opportunity lies in *"the sooner and the faster you learn, the sooner the faster people can start building their prototypes in a more meaningful way [...] We have to have faster iterations at the beginning to have these better insights.* **Faster would mean less detail but also less waste**". Talking about the fast pace of learning he is sure that *"the pressure of time, makes you make faster decisions. And it is not always gonna be the right one but at least the decision to test something else, very fast and then you go back and say "okay it wasn't the right one"".* For him it is directly linked to their "making culture" but also to the necessity of "making sure things" and this shift will need a cultural change.
"Before we were debating a lot about what we should do, but we didn't try. And now before we debate and keep us stuck in the discussion, the mindset should be "no, no let's try this experiment, let's go out and see what sticks. So there is a completely different way of working".

Sustainable growth

The current focus for Barco as an established company is on scaling the markets as a growth strategy, since investors are asking Barco to have a much higher return on investment (ROI).

According to investors' numbers, Barco is investing in engineering 2.5 points higher than similar peers in their sector. Guy points out that this is very linked to their focus on different niche markets and even niche products in those markets. As mentioned by the CEO during a recent interview to Jan de Witte, the target for Barco is *"to achieve higher profitability by capturing more market share and not just the front end of the market"* says Guy. This traditional focus on niche markets brings lots of specifications and overcomplexity in the processes, which is something that is being reconsidered. It was one of the main points that Jan referred to when announcing the reorganization of the company in November. Guy believes that the success of operating in niche markets will be to *"simplify the way we look at the markets. We should not look into the segments as we sometimes do. I think we should look at what is connecting those markets rather than what is diving them. Because then will again stick to the niche developments that do not bring a high ROI"*.

Conclusions

Barco is a company with more than 80 years of trajectory facing now the challenges on innovating in a rapidly changing environment. Research insights indicate the advantage that adaptability can offer to companies performing in these environments, and the need to understand them in order to translate what their changes and evolutions could mean for the (not so far) future of the organization. Talking about the future of a company and its adaptability comes together with the activities of 'learning' and 'experimenting'.

Barco is also aware of the necessity to innovate in a different way, focusing much more on the value of understanding user needs and new business models, in order to find the right applications for the technology. They have embedded design thinking principles in the formulation of their strategy and other initiatives, but there are still some obstacles. The siloed character of the organization and the distance between Barco and the end users of their products could bring difficulties when trying to execute this change. Barco has relatively easy access to its customers but being a B2B company does not bring them closer to those who experiments their solutions.

"It is not time, is a mindset, is training. Is when in technology businesses, when the people who do your product management are more engineer than business leaders, then everything, strategies looks like the next version of that box that you are selling already"

This project aims to apply design practices (supported by their proven advantages they have demonstrated in companies) to facilitate the change in mindset that companies suffering this "paralysis" need. Established companies need to understand better their fast-changing environment today, to plan strategically better their future.

High-level management in Barco has a clear opinion on the need to change the mindset. *"It is not time, is a mindset, is training. Is when in technology businesses, when the people who do your product management are more engineer than business leaders, then everything, strategies looks like the next version of that box that you are selling already"* says Jan De Witte, the CEO.

These words give relevance to the project and because of them, support from high management is expected along the journey.

1.2
Project Scope

This section contains the definition of the project as it was described in the project brief, the characteristics of the desired outcome, the project approach, its methodologies and concludes with the relevance of the project.

Problem shaping

The project, as it was defined in the project brief (see Appendix A), has as a first focus to "understand the different practices and steps that Barco teams do in order to determine what is the direction that Barco should take, to guarantee a sustainable and successful business". The following four steps (see Figure 1.7) were from the beginning defined together with Guy Van Wijmeersch, for being potential key steps that could have a role in determining the strategic direction of the organization: 1. Capturing insights, 2. Translating insights into future strategy, 3. Validation of strategies, 4. Implementation of strategies in Barco's portfolio.

After defining those steps, some dependencies and barriers were identified. Dependencies like the reliability of the insights gathered, their validation, the traceability of the ideas and decisions made along the way, etc. The barriers

1. CAPTURING INSIGHTS

2. TRANSLATING INSIGHTS INTO FUTURE STRATEGY

3. VALIDATING THE STRATEGIES

4. IMPLEMENTING THE STRATEGIES IN PORTFOLIO

Figure 1.7: Initial opportunity as defined in the project brief

identified where the means that Barco managers have been using until now for the communication of strategic options. Another barrier identified is for example how comfortable they feel when talking about the future of their business. Other aspects that were highlighted to be carefully observed were: the focus of Barco in niche markets, which makes them sometimes miss the big picture and not focus on developments in other industries.

In addition to the feeling of security due to being a market leader in many of their markets. The engineering "pride" and confidence sometimes causes that many assumptions are not validated. This is even more accentuated since they stepped into software and service offerings, which demands new skills and capabilities. It is relevant to mention that since the beginning there was a special focus on how design practices could
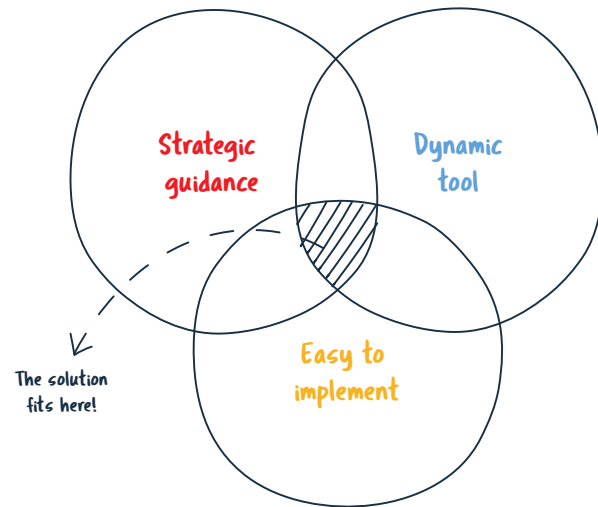
Figure 1.8: Solution space

support the company in validating strategies. At the start of the project, there was no specific research question, besides having a better understanding of their current strategic practices. The initial goal was to get internal insights that would facilitate finding which of the phases previously identified needed more attention and could have a bigger impact. *"What could support product managers and strategic marketers in the best way, while simultaneously facilitating a change in mindset in the organization?"*.

After the project was started, the decision was also made that **the solutions should fall under all three key requisites** (Figure 1.8):

"What could support product managers and strategic marketers in the best way, while simultaneously facilitating a change in mindset in the organization? "

The solution should be (1) **easy to implement** within current Barco operations and shouldn't feel like a burden or seen as "another change".

It should serve as (2) **strategic guidance** for the organization, to support in projecting the company towards the future. Finally, the solution should fit in a (3) **dynamic tool** in which the content could be updated, iterated and discarded if necessary (as quickly as the demands on the technology that Barco operates with shifts) to facilitate validation and encourage a continuous learning attitude.

Desired outcome

The solution is also **expected to create strategic, operational and human value for the organization**. At the end of the project, once the solution is designed, it will be evaluated under all the requisites mentioned in this section:

1. Operational value
Make better-informed decisions
See the big picture
Embrace uncertainty
Effective planning of resources
Solve real problems, focus and be more efficient.
"Designing the right thing, and designing things right"

2. Strategic value
Project the company in the future
Engage more employees in strategic conversations
Stand out from competitors
Knowledge of foresight as an internal asset

3. Human value
Perform better, be smarter
Learn and increase skill set
Understand better the possibilities of your business environment
Freedom to think beyond

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Approach

The 'Approach' section comprises the model and methods followed during the project. The double diamond model developed by the British Design Council (2005) has been used to structure the project and is visualized in the following Figure 1.9.

The activities are divided into seven phases shown in figure 1.9. The project started with the research phase (Chapter 2) in which I consulted different sources of knowledge and got a better understanding of Barco's current situation by interviewing employees. With this knowledge, I created the theoretical foundation of the project. Since there was no specific research question, the synthesis phase (Chapter 3) consists on defining the focus for the project after having processed all the insights gathered. The design phase (Chapter 4) was divided into two phases as a consequence of reframing the solution space. In parallel to the design phase, external validation took place, which helped to define many elements present in the final solution. The internal validation at Barco happened after the design was finished and in parallel, the feedback and conclusions were synthesized and added to the report. This constituted Chapter 5. The preparation of the final presentation took the last week of the project, once the report was handed in.
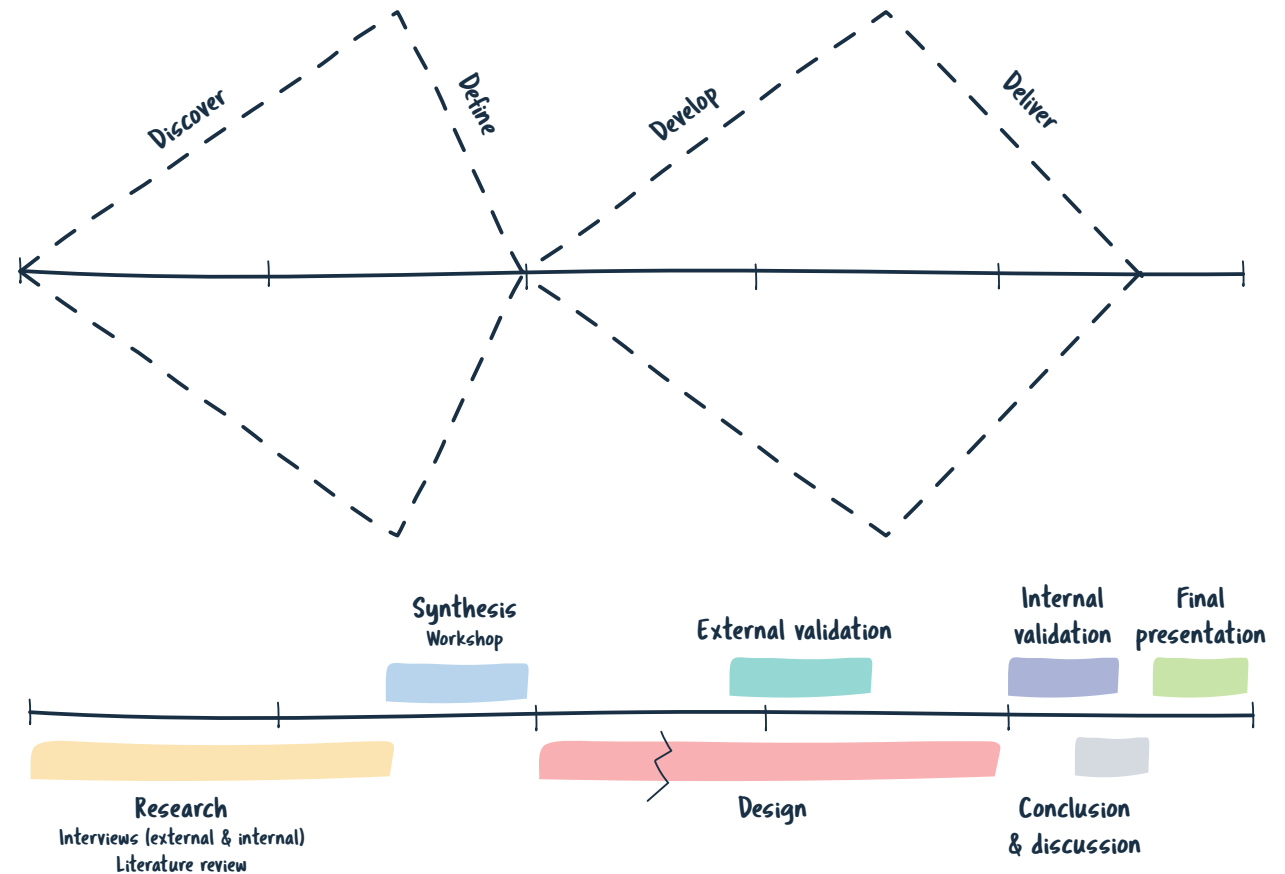

Figure 1.9: Double diamond model in this project. Adapted from British Design Council (2005)

Other methods exercised along the project have been design thinking, lean innovation principles and interaction vision development.

Design Thinking

Because the project wants to bring design practices closer to Barco, it is also a requisite that the solution provided meets the design thinking criteria. In the words of Tim Brown, *"design thinking brings together what is desirable from a human point of view with what is technologically feasible and economically viable"*. Therefore, the potential desirability, viability and feasibility of the solution are addressed in this section (Figure 1.10). In this analysis Barco is the 'client' of the solution provided, and therefore the feasibility and viability are focused on the solution provided to the firm.
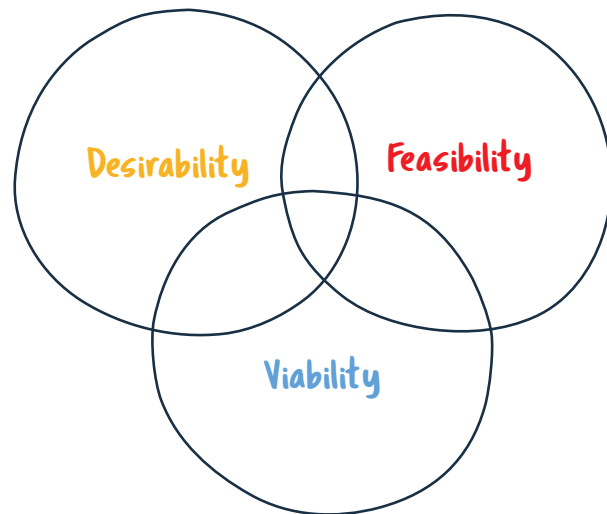
Desirability: to bring a solution to Barco that would satisfy the necessities of marketers and strategic managers, 13 internal interviews with employees from CEO to Product Managers were conducted. As mentioned at the beginning, the initial research question was not specific enough but more explorative, with the aim to find which was the right spot where to act and therefore solve the right customer problem. The opportunity or solution space was iterated twice thanks to these interviews, one workshop and some conversations with Barco teams, in order to find the right area in which a solution would be more desirable and create more impact.

Feasibility: *How can my capabilities as a strategic designer be strengthened?* With this project, there was a personal focus to bring strategic design practices to a corporate struggling with the current fast pace of innovation and the light speed shift of customer needs, and learn from

it. Barco has the potential to be used as a case study, thanks to which the outcome could mean an applicable method or framework relevant for me as a professional and applicable to other companies in the same situation.

Viability: the solution provided to Barco should fit in their practices and strategic operations in the long term. Before my project is finished I had to make sure that the solution met the requirements to be implemented and executed as part of their processes, and not just as a workshop or exercise during the graduation project. Therefore, the link between the solution and its contribution to the strategy as well as its fit within their current strategic operations needed to be showcased.

There will be references to these three pillars also at the end of the project, once the solution has been designed.

Figure 1.10: The three lenses of design thinking

Lean innovation

Many decisions and steps have been validated following the methodology of the Lean Startup (Figure 1.11). Being one of the mentors of the project, a Lean Innovation coach made these practices a requisite in which hypotheses were elaborated, experiments were built to validate them and metrics were used to analyze the result. In the beginning, many questions were difficult to answer because of the scale of the solution space. Elaborating hypotheses to later test them with the internal interviews helped to step by step have ideas about the direction that seemed to be more promising for both parties, Barco and myself, which Ries (2011) calls 'validated learning'.
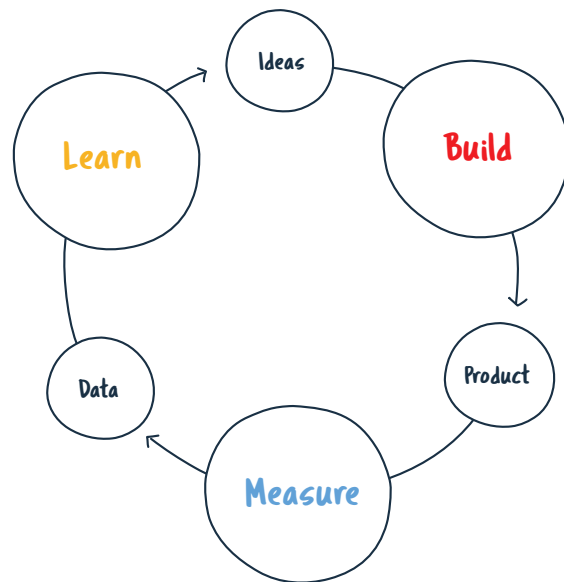
Figure 1.11: The lean startup. Adapted from Ries (2005)

Interaction vision

The initial intent was to develop an interaction vision. However, due to the lack of testing and feedback of the final solution, in the end, the idea was postponed. The aim was to get feedback on the usage of the final design and with this feedback develop the right interaction. However, some ideas have been considered from the beginning and, after having finalized the design, they can be briefly explained here.

1. **The planetarium:** The final design, the theoretical framework, would be used as a map to guide you through the experience of discovering the constellations in the planetarium. By following the tips and tricks, the participants (or visitors) will be able to make connections between the stars and therefore find their patterns and interrelations. Those are the dependencies that connect the different drivers of change in scenario creation.

2. **The map of Mercator:** Gerardus Mercator was a 16th-century Southern Dutch cartographer, geographer and cosmographer. He is known for creating the 1569 world map. As such, the map of Mercator could be the metaphor for the theoretical framework as well.

3. **The playbook:** in American football, the coach uses a playbook to plan several strategies and courses of action for his players depending on how the match and the adversary evolve. In the same way, the theoretical framework design could be used a playbook for Barco that contains different courses of action depending on how innovations and trends evolve. This will facilitate a much faster response in any strategic changes needed.

The next step, when the final design/solution is tested (after the graduation deadline), will be to finally develop the interaction vision using some of these ideas as inspiration.

Figure 1.12: The planetarium metaphor

Methodologies

Various methodologies and different sources of data are used throughout the project, to increase the validity of the research. The methodologies used are literature study, internal interviews, expert interviews, one internal workshop and a questionnaire. The icons represented next to them will be used throughout the report to indicate the origin of the insights.

Literature study

The second most important source of insights has been the literature study. The research was focused on a startup mindset in corporates, foresight in corporates, foresight and scenario planning, ambidextrous organizations and interaction vision development. Other topics were also analyzed like technology roadmapping but because of their low relevance for the outcome they are not addressed in this document.

Internal interviews

Thirteen internal interviews have been conducted with Barco employees. These interviews constitute one of the most relevant sources of information and insights, especially during the first two months of the project. They can mainly be divided into two rounds: a first one to get a rough understanding on the situation and elaborate some hypotheses and a second round to test those hypotheses, draw conclusions and define a more narrow and focused opportunity space.

Expert interviews

Experts were consulted in two different moments throughout the project. Hanne Caspersen (Creative Director Trends at Philips) and Farid Tabarki (CEO Studio Zeitgeist*) were interviewed in parallel to the literature review, to get an understanding on what foresight meant for them and how they experience it in their professional roles, internally in a corporate like Philips and as a consultant in Studio Zeitgeist. Five more external interviews took place in the ideation phase, three of them to people with roles closely linked to innovation and design in corporates and the other two with design consultants. With the first three, the focus was on getting feedback on the framework that was being developed and getting a better understanding of their best practices and learnings in their corporates. With the last two interviews, the goal was to get recommendations based on their personal experience as innovation consultants, with close link to strategic design, on how to make the framework land better in a company like Barco.

*Studio Zeitgeist "catches the driving forces on a global scale through research, exchange, creation and travel. This creates a unique way of looking at the world. This forms the inspirational basis from which we connect the driving forces to organizations".

Internal workshop

The internal workshop took place in the second month of the project during the definition phase. It involved four managers who operate in their respective three divisions, and the goal was to validate some latest insights and narrow the scope. The outcome allowed to find the most interesting direction to take thanks to their insights and what they said they expected from Barco in relation to foresight practices.
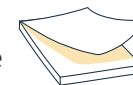
Questionnaires

In the last phase of the project, a questionnaire was sent to people participating in one of the solutions executed, the internal campaign (See Appendix D). The purpose of the questionnaire was to validate the hypotheses previously defined on the effect the internal campaign could have in Barco.

Relevance of the project

The 'Relevance of the project' section justifies the need for this project and its potential impact. The most important aspects that highlight the relevance of the project are:

1. This project has the opportunity to support the renewed strategy of Barco and make it more tangible and accessible for employees, by creating methods and a framework that are valued and embraced by product managers and strategic marketers, and therefore applied.

2. For other companies that are living the same innovation "paralysis" as Barco, the project learnings and the framework or model developed can serve as a reference and as a starting point for their own change in mindset. Companies that due to the highly changing and interconnected environments in which they operate and the complex challenges that they bring.

3. The academic relevance of this project resides on the application of design practices, supported by the proved advantages that they have demonstrated in companies. With the aim to facilitate the change in mindset that companies suffering this "paralysis" in this rapidly changing world need, in order to understand better their environment today, to plan strategically better their future. The combination of "scenario creation" and design thinking put into practice in a corporate setting is also an added value of the project, a research field little explored so far from the design perspective.

4. For future graduating students, this project can be an example that illustrates how to define the focus and research question of a graduation assignment within the time frame given to a graduation project. Not having an already phrased research question (in this case asked by the company), it is not an impediment to finish a graduation project on time and with satisfactory and workable results for both parties.

"In the world of today is much more about business models and new user experience. If you are stuck in technology, you never jump far enough"

Jan De Witte, CEO at Barco

2
Discover

The chapter 'Discover' starts with a review of the principles of the book that inspired this project. It continues with a literature review on ambidexterity and corporate foresight, concluding with solid insights that will define the basis of the project. The literature review is followed by internal research focused on interviews with Barco employees.

This second part of the chapter dives deeper in the current status and feeling of Barco in relation to foresight activities. The lack of skills, the internal culture and the rigid processes built around innovation are highlighted as barriers. These barriers would be hindering Barco from achieving the ideal attitude and practices around foresight that are previously reflected in the first part of this chapter dedicated to the literature review.

2.1
Literature review

The topics under study in the literature review start with the influence that The Corporate Startup book has had on the starting of this project. This is followed by an overview of the latest research on ambidextrous organizations and the relevance of building learning cultures in corporates. To conclude the section, extensive research on corporate foresight is elaborated and combined with the latest results on the analysis of foresight activities within corporates around the world, by the Hamburg University of Technology in 2017.
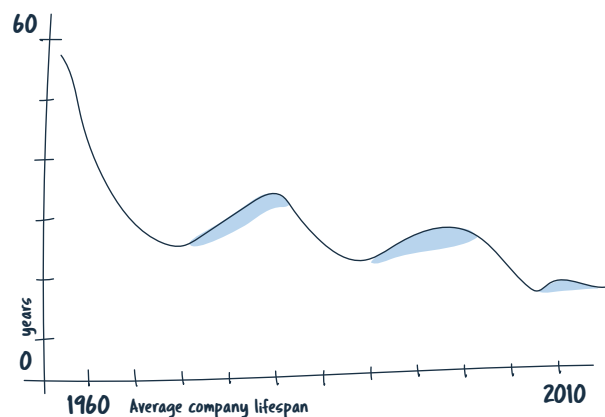
Figure 2.1: Average company lifespan

The Corporate Startup

The Corporate Startup (Viki, Toma and Gons, 2017) has been a referent since the starting of this project. It is full of key insights about corporate innovation, based on learnings from experiences of well known companies that could or could not succeed anymore due to the past pace of innovation. It offers several principles and tools for medium and large companies that want to stay relevant and develop a sustainable competitive advantage, by being as innovative as startups.

The context of today

The world in which we live is changing faster than ever. Trends, economic factors and technology have a sheer pace of change. Because of this, corporate leadership has to stop "keeping their head in the sand", and realize that innovation is imperative today. They have to continuously keep an eye on these changes in order to predict how they could impact their businesses and be able to respond to it. Part of the responsibility of these changes lies on startups that became billion dollar companies like Google, Facebook, Amazon, Dropbox, Uber and Airbnb, "which have transformed traditional industries and business models" (Viki et al., 2017).

How traditional companies play here

Traditional companies are suffering this situation much more than emerging startups. It seems that being already a successful company before this new innovation pace got a decent rhythm that deserves attention, is now being their 'Achilles' heel for innovation". These companies still feel comfortable if they are profitable. However, this can mean a disadvantage because they tend to deny that this change is relevant to them. In successful medium and large companies, the focus is on obtaining high revenue from the "cash cow products", their core business. Especially if they are publicly stocked companies, like in the case of Barco, meeting the quarterly goals is the first priority for executives. This can be resumed in a high focus on the short-term performance, and less attention to how the business environment could affect the future of the company.

Exploitation and exploration

Of course established companies cannot start acting like startups, because they have a legacy, their own way to do business and customers behind. But what is sure and recognized by contemporary management is that "the idea of a stable and long competitive advantage is a fallacy". The management of companies with this 'legacy' should focus on exploiting the current competitive advantages and moving on to the next advantage. But in order to do that, what established companies should learn from startups is the "explorative" attitude, and combine it with exploiting the core business. The key lies in finding the balance between 'exploiting' enough the core business, to ensure current viability, and putting enough time and resources into 'exploring', in order to ensure future viability (Figure 2.2).

These different practices to ensure the viability, of course, need different ways to be managed and measured. Core products can be managed with the traditional and well-known tools for these companies, while the searching activity should, according to Viki et al. (2017), be managed using startup methodologies like design thinking, customer development and experimentation. This distinction implies that established companies need to find their best way to be searching for new profitable business models and new products while they are executing the established core products. This capacity of

searching while executing is the basis of the ambidextrous organization, and the following section Ambidexterity is dedicated to elaborate on its principles.

Where is the right place for this innovation?

As said, managers should build the right managerial processes around the searching activity in the organization. The tendency is to expect innovation to happen in innovation labs, isolated from the rest of the organization, but this fails because they do not build the right management process for them. And the key insight about this for Viki et al. (2017) is that "no matter what you do or where you start, innovative products will always need someone from the main business to make decisions about their future". To manage innovation Viki et al. (2017) propose five principles that inform how organizations manage innovation complexities: innovation thesis, innovation portfolio, innovation framework, innovation accounting and innovation practice. For the purpose of this thesis, some more attention will be given to the 'Innovation Thesis' in the following section, a practice that inspired this project.
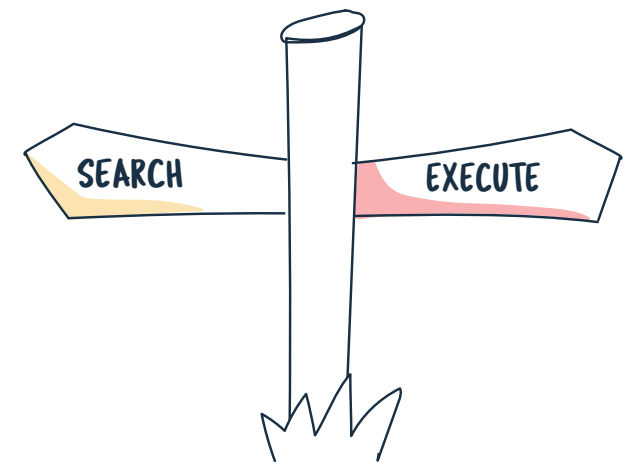

Figure 2.2: Exploiting VS exploring. Adapted from Viki et al., 2017).

The innovation thesis

The function of an innovation thesis y to "clearly set out a company's view on the future and the strategic objectives of innovation". It also sets the boundaries for innovation, delimiting which projects the company will or will not consider. The thesis is basically a compelling strategic narrative and to create it, companies should start answering some of the following questions visualized in Figure 2.3 (next page).

An innovation thesis consists on two parts:

1. **Clear articulation of the company's perspective of where the world is going and who will succeed in that world**
2. **Clear articulation of the types of ideas that a firm feels best suited to invest in**
But it can also serve other purposes, like being

an **"inspirational framework for ideation".** The thesis serves as guidelines for ideation, thanks to which people understand that the company has identified certain trends and wants to get ahead of them, to solve specific customer problems.

The innovation thesis can also be a good **"guide for success metrics"**, because by having established the strategic objectives of innovation in the thesis, it becomes easier to know whether the company has succeeded or failed.

Defining the thesis is a combination of "deliberate strategy" based on vision and "emergent strategy" based on learnings from the market. Emergent strategy is highly adaptable, something crucial in this changing landscape, and it allows manager to respond better and faster. Viki et al. (2017) view the innovation thesis as a **"set of hypotheses about the world and what works".**

The thesis also **has a validation component**, since experiments and customer conversation will provide feedback about the potential success of the strategic direction previously defined in the thesis.

Viki et al. (2017) reflect about the fact that it is not possible to be right the first time building the thesis, but because the markets will change and evolve, the company has the opportunity to learn new things. To conclude, it has been proved that "thesis-based investment brings the highest level of returns when compared to thematic-based or opportunistic investing".

Which are the emerging trends within society, the economy and technology?

Which new markets do we want to enter and grow in?

What future technologies are still in their infancy and may affect our industry in the long-term?

How do we expect innovation to help us respond to important emerging trends?

Are there any competitors from within or outside out industry?

Within these trends, what are the threats and opportunities for our business models?

Which arenas should we be exploring in order to find the next set of business models that can sustain our company?

Figure 2.3: Questions that support companies defining their innovation thesis. Adapted from Viki et al. (2017)

Insights

In the rapidly changing context in which established and new companies operate their business today, **trends, economic factors and technology are the elements that have the fastest pace of change**.

Established companies suffer with more impact the new fast pace of innovation and the changes it comprises. Usually because of their tendency to deny the relevance of the situation and that it could have an impact on their business. They consequently tend to focus on the core business and short-term performance.

These companies need to learn how to maintain their core business at the same time as they learn about the changes in the business environment. This capacity of learning while executing is the core of 'ambidexterity' and it aims to support companies in this task to ensure their future viability.

The searching activity requires the right management processes. This facilitates linking the searching activity to the rest of the organization, increasing its relevance.

The principle of **the 'innovation thesis' offers inspiration for this project**, being the first of five principles suggested to manage innovation in established organizations like Barco. It has several roles, among them:

- Defines the boundaries for innovation and to do so it first asks management to answer some key questions that will help to define the company view on the future.
- It can be used as an "inspirational framework for ideation" that facilitates managers to identify of which trends the firm wants to be ahead.
- Finally, it can also be used as a guide to establish the metrics that will determine the success of innovations (Innovation Accounting).
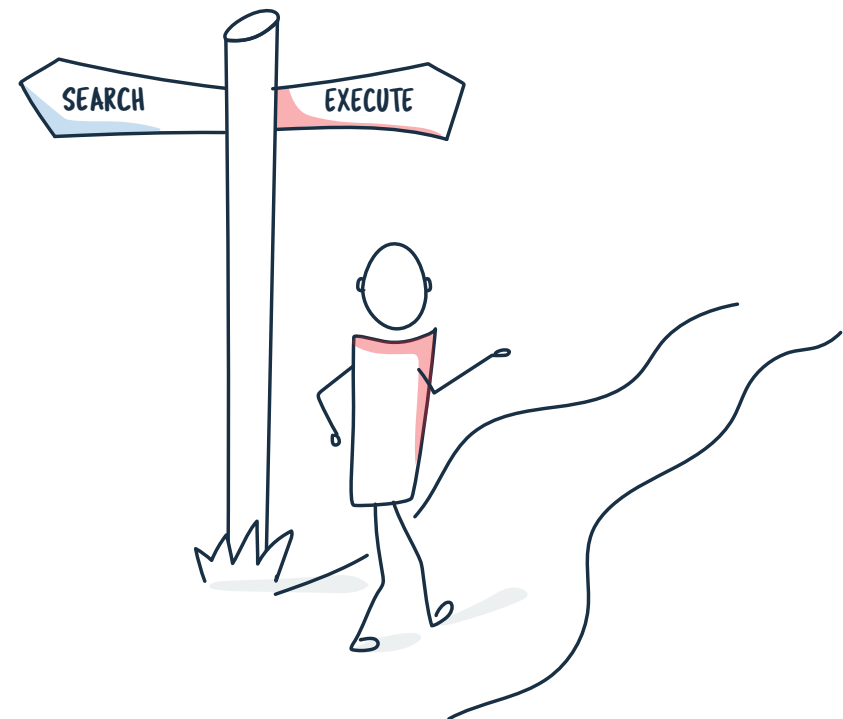
Figure 2.4: The innovation portfolio.
Adapted from Nagji and Tuff (2012).
Managing Your Innovation Portfolio

Ambidexterity

As introduced in the previous section, there are different practices to ensure the future viability of established companies. These companies need to find their best way to be searching for new profitable business models for new products while they are executing established core products. As said, the capacity that companies can have of searching while executing is the basis of the ambidextrous organization. Tushman and O'Reilly (1996) define ambidexterity as the capacity that an organization can have to both exploit and explore businesses at the same time. In order to compete in existing markets and technologies but also in new technologies and new markets successfully (Figure 2.5).
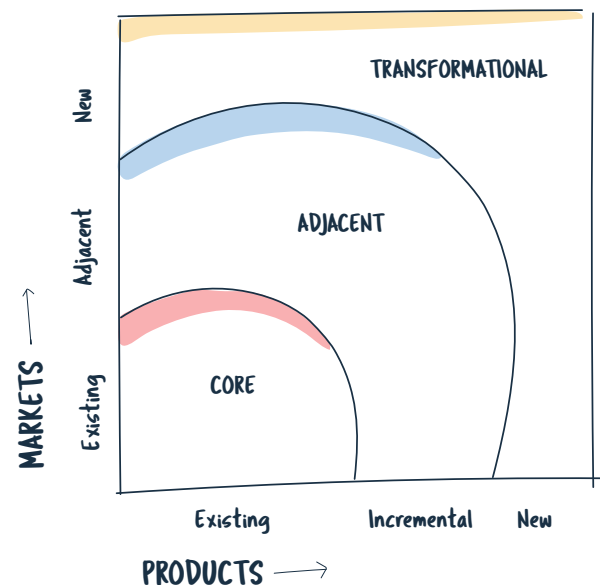

Adaptability and environment fit

Ambidexterity has gained popularity for being considered one of the most proclaimed capabilities that companies need in order to ensure their long term survival (Oehmichen, Heyden, Georgakakis, and Volberda, 2016). In the same line, and as mentioned in previous sections, Reeves & Deimler (2011) reveal that adaptability is the new competitive advantage for firms. In this era of risk and instability, where globalization, new technologies, and greater transparency create more complex challenges than ever, companies must learn to read weak signals from the external environment and act on them. They should act as if they had "antennae", that facilitate the capturing of those weak signals and quickly translate what they will imply for the organization. In addition, Curry and Hodgson

(2008) reflect that since ideas and expectations change over time due to the political, economic, cultural and regulations or organizational norms, the value propositions also loose fit with that environment. Therefore, companies should continuously keep an eye open in the business environment and the variables that shape it, in order to make a prediction of what might the future of their business look like. When this is the way to execute the business, companies are more likely to offer value propositions that fit better and therefore have a better response.

To maintain the fit between the value propositions and the demands and expectations of the environment, companies need to pursue a balanced portfolio, covering the three horizons of innovation (Curry and Hodgson, 2008; Viki et al., 2017).

Figure 2.5: The innovation portfolio.
Adapted from Nagji and Tuff (2012).
Managing Your Innovation Portfolio

Figure 2.6: Three horizons of innovation. Adapted from Baghai, Coley and White (1999)
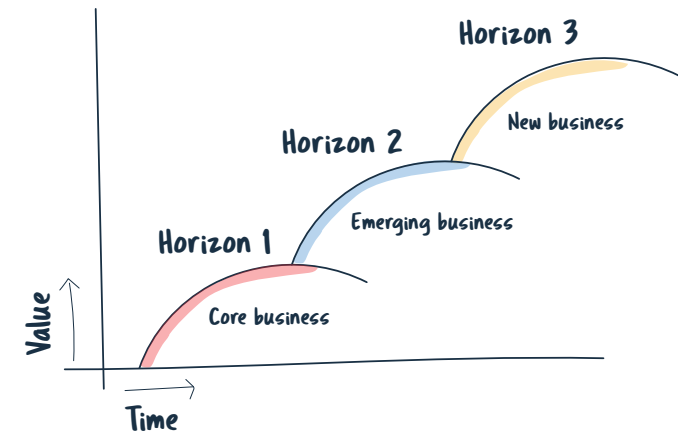
In Figure 2.6 the three horizons are represented. The principle behind it is that Horizon 1 loses 'fit' over time as the external environment changes. Whereas Horizon 3 contains ideas or arguments about potential future scenarios, representing value propositions that fit more the changing external environment. The second horizon is the intermediate space between the first and third horizon, focused on offering incremental products in adjacent markets. Companies should manage these three horizons at the same time to ensure their future viability.

Exploitation and exploration

Tushman and O'Reilly (1996) define ambidexterity as "the ability to simultaneously pursue both incremental and discontinuous innovation… hosting multiple contradictory structures, processes, and cultures within the same firm".

According to March (199) is about the ability to handle the current business (exploitation) when at the same time preparing for the future in which the firm will have a role (exploration). Exploitation is focused on efficiency when running the core and current business, with the aim to enhance productivity and efficiency. Whereas exploration is about engaging employees in search and experimentation. For Ries (2017), the importance of experimentation and learning is such, that it should be embedded in the entire company, and every employee -the people- should have the opportunity to experiment. Both activities have different natures, goals and structures, and therefore should be managed differently. When exploitation can be managed with traditional methods, exploration usually needs new structures, metrics and even the reallocation of resources (in large organization resources tend to be allocated to favor exploitation) and new

capabilities (Tushman and O'Reilly, 1996); Viki et al., 2017).

Securing exploration

Kotter (2014) emphasizes in the importance of having organizational leadership to initiate and maintain the exploration activity and its network -the people-. Ries (2017) agrees that the exploring activity should be treated as legitimate and part of the organization, with its dedicated space -the places-, processes and metrics -the practices-, as exploitation does. According to Viki et al. (2017), "an ambidextrous company needs senior management team that is comfortable with the paradox of maintaining multiple strategic agendas". The role of senior leadership is to initiate and create a dedicated place for the experimentation, to secure the learning activity in the organization.

Insights

Ambidexterity enables adaptability, a key capability that established companies need to master in order to stay relevant and **ensure their long term survival** in a rapidly changing environment.

Executing exploitation and exploration activities ensure companies that they will develop propositions that fit in an **environment that changes** because of the influence of the ideas and expectations of customers. These **customer expectations and the acceptance of certain ideas evolve over time due to political, economic, cultural and regulatory changes.**

Because of the **different natur**e of both activities, **different management practices** should be applied to both of them. Managing two different strategic agendas and mindsets in parallel is not an easy task for high management.

Senior management has the responsibility to ensure the people, the places and the practices that enable the experimentation in established organizations.

Corporate foresight

The current dynamics and the fast pace of changes that organizations are facing nowadays force them to innovate, to adapt and survive in their environment and to, ideally, be successful. Foresight activities are conducted by organizations to gain knowledge about things that are already happening or coming closer, with the intention to base their decisions of today (which will have an impact in their future) in more solid and available expertise (Beeton, Phaal and Probert, 2008).

However, because what occurs in the environment of organizations has a dynamic nature, it brings complexities and uncertainties about the future.

Definition of 'foresight'

For Klakurka and Irwin (2016), "Strategic foresight is about combining historical data, applying forecasting techniques and scenario planning, and working with cross-functional experts to arrive at various depictions of possible business futures". Foresight allows the evaluation of pros and cons of different courses of actions and uses those evaluations later in decision making. Therefore it can be said that foresight elaborates views of future options and offers the possibility to make choices (Beeton et al., 2008). Cuhls (2003) states clearly that foresight is used

in the sense of outlook as opposed to prediction, which makes a distinction with forecasting. Forecasting uses more quantitative techniques to predicts events, based on evidence from the past. However, foresight explores different outlooks more qualitatively and assumes that there is not a single future. Because of that, foresight is characterized for having a broader scope. Foresight also encourages having a more proactive attitude towards the future and recognizes that the choices made today have the potential to shape the future.

For Mintzberg (1994) foresight has a lot to do with creativity: "Strategic thinking is about synthesis. It involves intuition and creativity. The outcome of strategic thinking is an integrated perspective of the enterprise, a not-too-precisely articulated vision of direction ...". Also in words of Klakurka et al., (2016), using foresight in a creative way allows managers to effectively "overcome the usual errors in decision-making: overconfidence and tunnel vision".

Foresight in the corporate culture

According to (Thom 2010), foresight activities and their success are believed to be dependent on the corporate culture. This is because valuing foresight information, using it, and recognizing the need for changes are highly dependent on the internal attitude toward sharing insights and information. Beeton et al. (2008) add that participating in foresight activities promotes ownership, facilitates the assimilation of foresight results and creates a commitment to them.

In their study, Vecchiato and Roveda (2010) focus on companies that have established an organizational unit dedicated to strategic foresight, 'the strategic foresight team'. However, according to the findings of Thom (2010), corporate foresight can be "executed by a central foresight unit, as an additional task by existing units (e.g. R&D), decentralized within all organizational units, or as the responsibility of every employee".

Foresight as a process

Foresight can be considered as a process supported by a set of methodologies. Successful foresight processes should consist of three phases (Figure 2.7):

- The **first step** is concerned with the collection, collation and summarization of the information that is available (a wide range of sources and a variety of experts should be the source of this information, (see Sources of information).

- The **second step** is about the interpretation and translation of this information, to generate an understanding of the potential implications for the organization. This understanding is always from a specific point of view of a particular organization.

- The **third step** is about the assimilation, evaluation and utilization of that understanding. The aim is to create a commitment and a call for action for that particular organization (Thom, 2010; Beeton et al. 2008).

These are some of the **methods most frequently used in foresight** (Van der Duin, 2016):

1 Scenarios (more linked to the explorative approach)
2 Delphi method
3 Trend analysis
4 Technology forecasting (quantitative trend extrapolation, more linked to the predictive approach)
5 Technology assessment
6 Backcasting (more linked to the normative approach)
7 Roadmapping (more linked to the normative approach)

Figure 2.7: The steps in foresight

1. COLLECT

2. TRANSLATE

3. ASSIMILATE
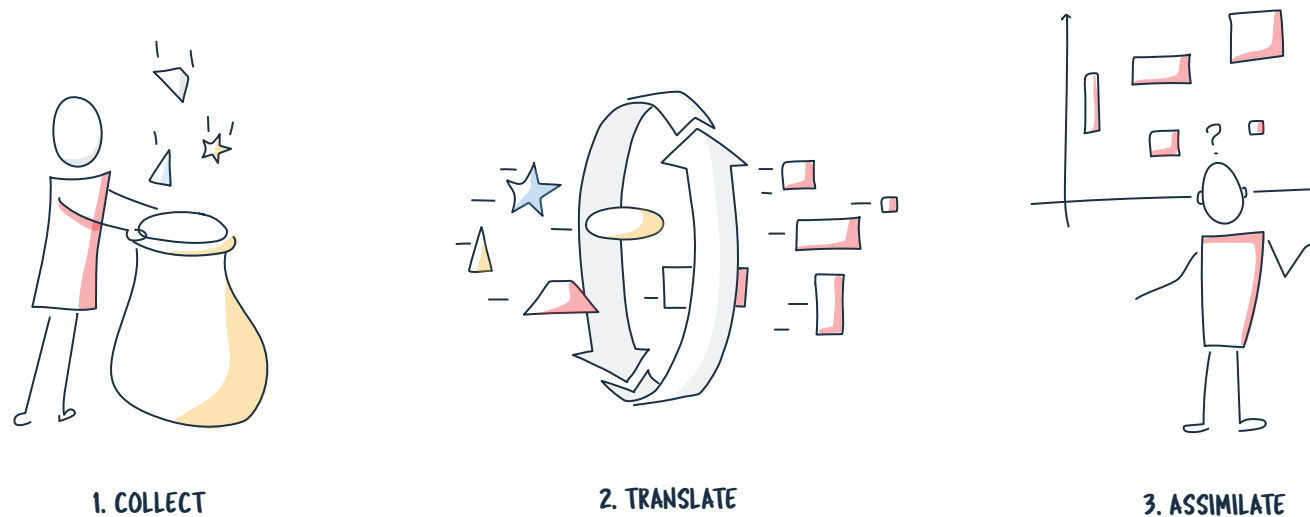
The type of information used in foresight

For Vecchiato and Roveda (2010) the external environment of a firm is the major source of uncertainty for managers. These are the ones on in charge of detecting emerging opportunities and threats and to respond to them on time. The type of information foresight activities should identify and use according to Thom (2010) are competition, customers, technology and politics as the company's context information but also adjacent businesses and white spots. Tech-driven organizations should not only focus on technological developments but also in the evolution of consumer behavior, changes in societies and cultures and the legislation and regulations of this environment. Vecchiato and Roveda (2010) name this changes and developments 'drivers of change', and they add to this list the economical and ecological landscapes that surround the industry of the organization.

These emerging drivers of change have the potential to affect the structure of the industry and therefore have an impact on the competitive position of the corporate. They highlight three different types of uncertainty concerning drivers of change: uncertainty about their evolution ("state" uncertainty); uncertainty about their impact on the competitive position of the firm ("effect" uncertainty) and uncertainty about the response viable to the firm ("response" uncertainty). For them what really matters is not only the detection of emerging drivers of change but "the ability to achieve a deep understanding of their consequences ("effect" uncertainty) on the sources which govern competition in the industry". This deep understanding of the drivers of change is, according to them, crucial because it is "intrinsically linked to the formulation of the business strategy of the organization".

Sources of information

To ensure successful foresight results, in-house skilled foresight-dedicated people are needed. These work in combination with strong external networks, who can act as sources of information, as challengers and have the potential to broaden the perspective. Also strong internal networks are needed to communicate the findings to decision makers. The internal networks are conformed by employees expert in certain domains within the organization (sales, marketing, research...). The external networks are shaped by external experts like customers, suppliers, partners, universities and consultants, who understand customer insights, external trends and developments.

The knowledge that external experts bring to organizations has the potential to gain more attention from top-management (Thom, 2010). As foresight is continuous process of learning and exchange of information and insights, Beeton et al. (2008) highlight the importance of interaction between the different actors and experts in foresight activities.

The need for corporate foresight

Beeton et al. (2008) have summarised the 'core tasks' that foresight practices encompass:

- Ensuring competitiveness for the future and sustainable innovation
- Differentiating the company for future competition
- Cultivating existing technology or knowledge areas
- Identifying new technology or knowledge areas
- Not to miss or oversee new trends or 'weak signals'
- Accompanying outsourcing or cooperation strategy
- Generating new businesses or new technological knowledge for the development of new businesses
- Anticipating technological discontinuities, global changes or 'weak signals', so that the firm is not taken unaware or 'submerged' by new paradigms or new competitors

Insights

Foresight is considered a **powerful tool to support in decision making** because it is based on the knowledge of things that are already happening in the context of a business, elaborates views on the future and gives managers the possibility to makes choices.

Foresights **uses qualitative techniques** and has a lot to do with creativity and intuition, two strong skills of designers.

Foresight in corporates is highly dependent on the internal **attitude in the company towards sharing** information and insights.

Participating in foresight activities has **extra internal benefits for the organization**: promotes ownership, facilitates the assimilation of foresight results and creates a commitment to them.
A key step in foresight is the **understanding and interpretation** of the effect that the **drivers of change** can have in the organization, which can have an impact on its future.

Foresight **is a process and** comprises **methods** that support it.

The exchange of information and the continuous challenge in foresight activities facilitates a **learning attitude**. Information sources include external and internal networks.
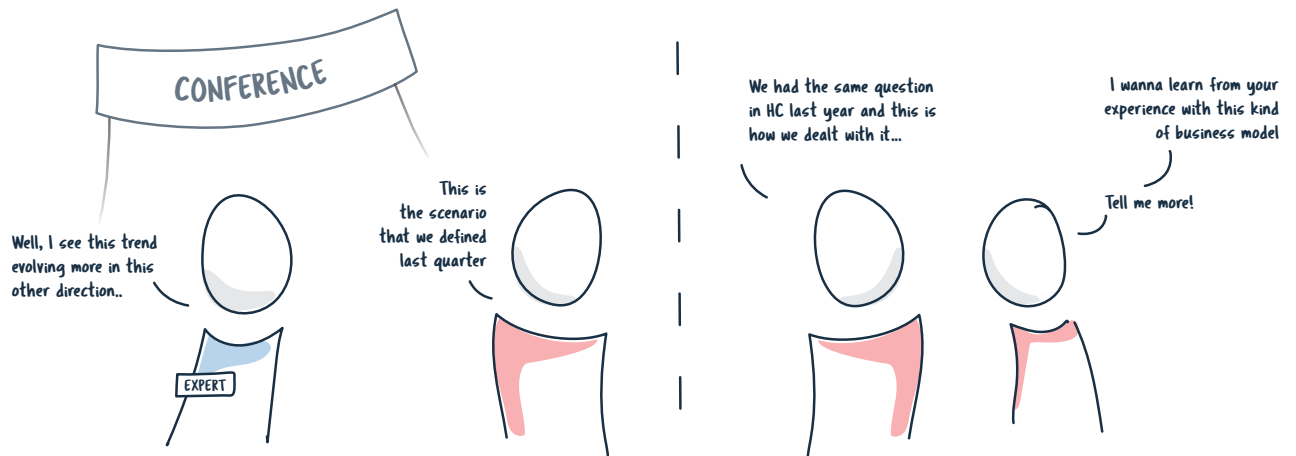
Figure 2.8: The internal exchange of information (learning attitude) and getting externally challenged are some of the charateristics of foresight
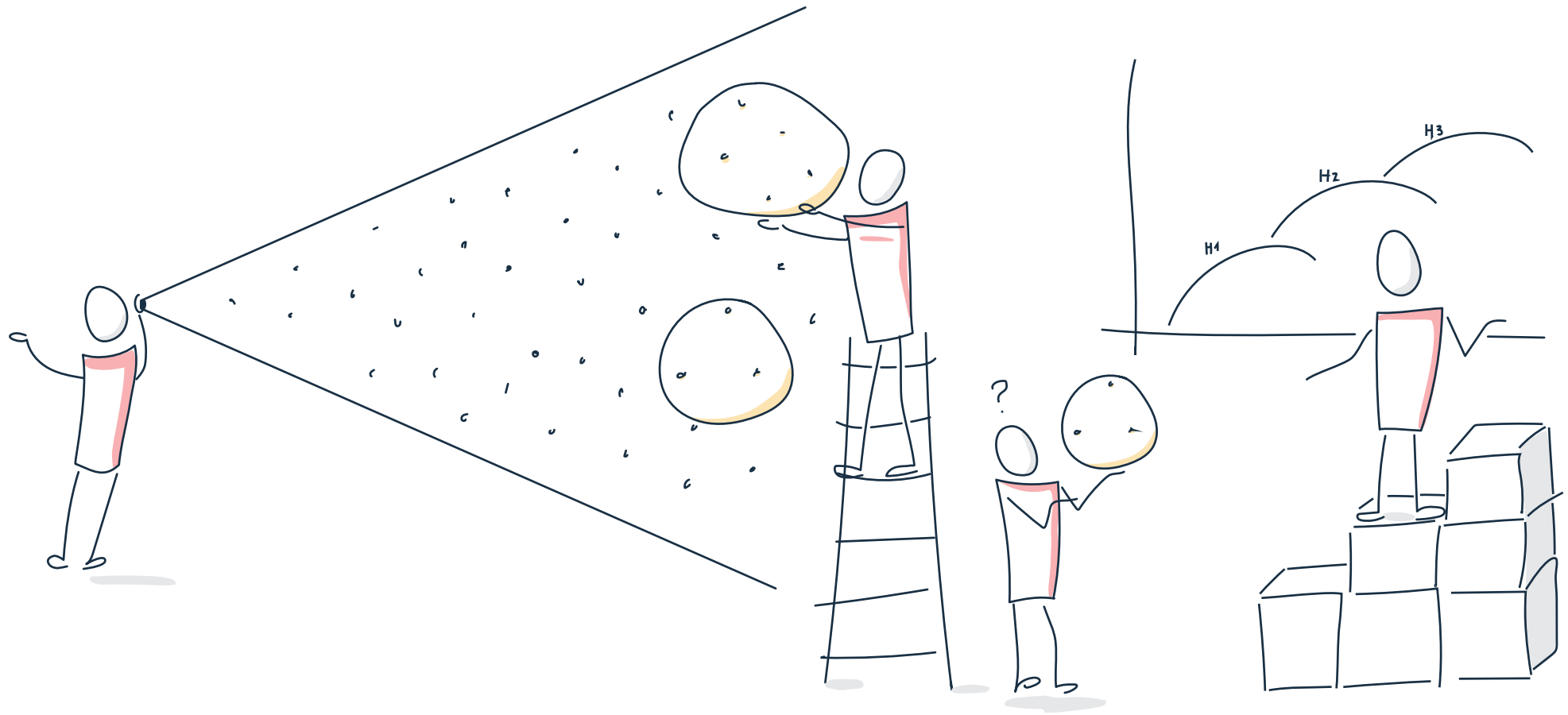
Figure 2.9: Foresight in a metaphor

Foresight activities within corporates. Study results

This section offers a resume of the latest results on the analysis of foresight activities within corporates around the world. The research was titled *'Open Foresight as a Driver for Innovation: Leveraging External Knowledge for Exploration of Future Developments'*, and it was done by the Hamburg University of Technology in 2017 (Polier and Herstatt, 2017).

Insights

"Foresight describes a firm's ability to detect discontinuous change, interpret the consequences, and formulate effective responses to ensure the long-term survival of the firm" Polier and Herstatt, 2017).

To get future-related information, companies tend to access **information sources belonging to their close environment** (close industries and close geographic areas). They rely mostly on customers, competition and scientific knowledge as sources of information about future trends, followed in the last place by research institutions.

"Foresight describes a firm's ability to detect discontinuous change, interpret the consequences, and formulate effective responses to ensure the long-term survival of the firm"

50% of the companies with similar characteristics to Barco have **formal responsibilities to execute foresight activities.** However, many of them miss the channels to distribute and manage the results obtained.

In 69,7% of the firms, **top management strongly supports foresight-related activities**, which enhances their visibility and promotes the implementation of their results. In 39,7% of the firms, foresight activities are triggered top-down, however, firms should establish processes -the practices- that enable that employees -the people- bring future-related information, in order to avoid missing relevant insights and weak signals. Therefore one of the responsibilities of top management is to ensure the 'practices' to manage new knowledge and the 'people' dedicated to foresight.

Firms that execute foresight activities **with frequency and have formal processes** around it **derive more value** from them. The insights derived from these activities can bring value to companies in three ways:
- As input and guidance for new innovation initiatives.
- As support in vision building and strategy development.
- To challenge assumptions of the current innovation activities, to ensure constant evaluation and validation of current activities against future insights.

2.2
Internal research

This section analyzes the current strategic exercises within Barco, in specific the Strategic Marketing Plan (SMP), which is intended to project the company in the future and support in making strategic decisions.

In words of the CEO, *"The SMP is the once a year concentrated exercise when we force ourselves to challenge or to confirm the strategic direction of the company. In terms of what value propositions should we consider ours, where we can differentiate and therefore which markets should we play. And then it starts to translate into strategy and how exactly we will compete, where we will compete, what do we need in terms of resources, where are we going to allocate capital, where to allocate the OPEX to start developing or executing those strategies."*
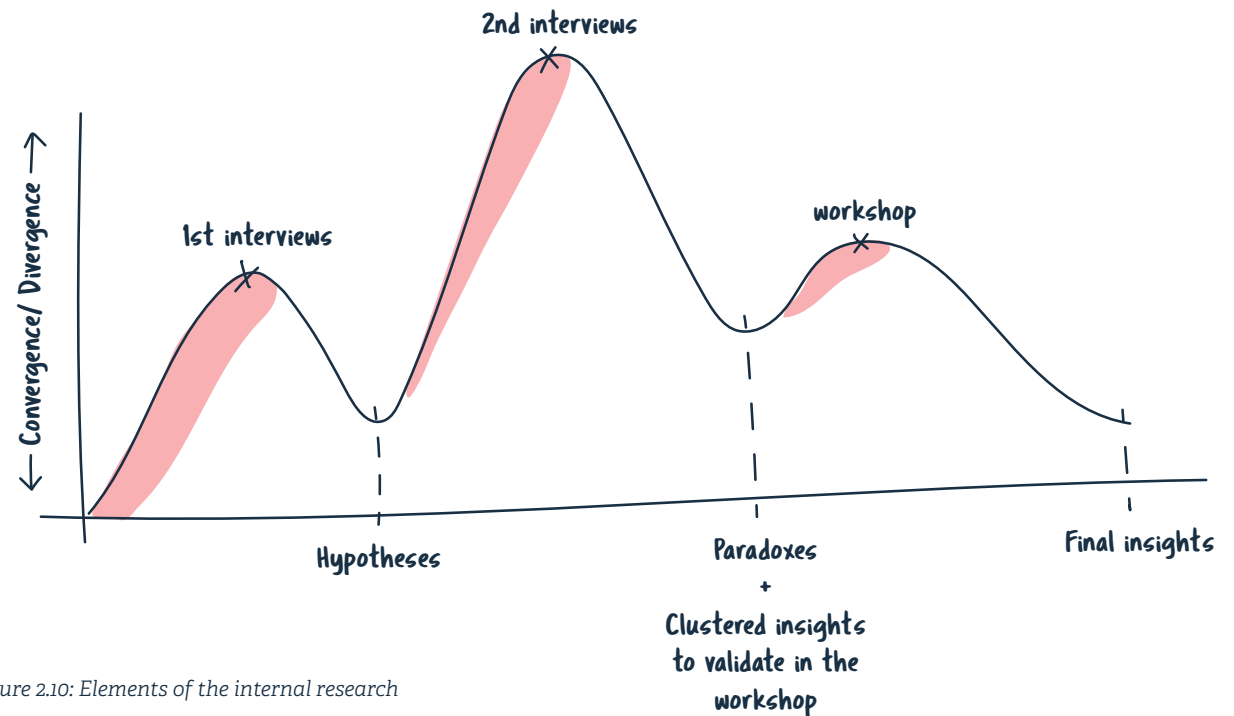
Figure 2.10: Elements of the internal research

Corporate Strategic Exercises

At the beginning of the project, the internal analysis started with the first round of **3 internal interviews** (see the Interview Guide in Appendix B). The purpose was to get a better understanding of the strategic exercises in Barco. During those conversations the main insights were*:

The insights have been supported by quotes, which make them longer. However, this was necessary to keep the richness and quality of the data. To facilitate the reading, some key messages have been highlighted.

Lieven Bertier
Director of GTM strategy and service, MX

Jan De Witte
CEO

Ann Desender
CFO
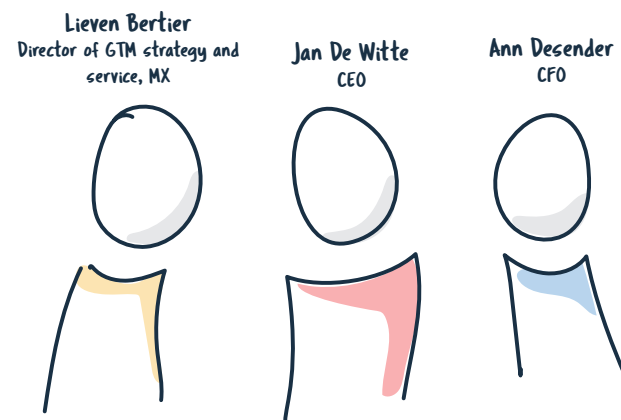
Figure 2.11: Interviewees first round

-**The short term approach** that the firm tends to have, which does not facilitate strategic guidance that a more long term strategic thinking could bring. In words of the CEO *"I think our SMP still is too close to our short term strategy. [...] By default everything that is called called strategic is already linked to the products that we make. We try to be strategic on top of it but we never jump far enough. [...] What is the customer problem you are going to solve now, five years from now, ten years from now."* and for Lieven Bertier, director of go-to-market strategy in the Meeting Experience *"Giving the predictive powers attributed to the SMP I don't think it is worth it look further ahead than 3 years because the SMP has a strong financial drive, and if you have to look 5 years ahead, financially it becomes very tough."* and he adds that *"It would be a good solution to look further ahead; it might be a good idea to compliment the 3 years plan with a more strategic outlook."* because for him *"Where we are a bit weak, is the strategic vision in the longer term".*

"I don't think it is worth it look further ahead than 3 years because the SMP has a strong financial drive, and if you have to look 5 years ahead, financially it becomes very tough"

-**The frequency of the effort dedicated to foresight is very low,** however, it depends per division, but *"It is an exercise, not a way of living yet. ",* the CEO explains *"The times that Barco looks outside coincide with the big conferences. One or two occasions per year per product line. The bad side is that everyone in*

"The times that Barco looks outside coincide with the big conferences. One or two occasions per year per product line"

the industry at the same time is doing the same. You are not going to be distinctive with that kind of insight and foresight". However, for Ann Desender *"It depends per division, you have divisions who are busy with this (SMP) throughout the year"* and *"this is something that has got better but still has opportunities. It is more a one per year exercise."* The CEO believes it should be executed on a quarterly basis, *"We should pretty much have quarterly cycles where we bring back into the company "this is what is going on in the market, and this is what we are learning". Which then fits a once a year exercise where we say "how do we adjust or fine-tune the strategic direction that we have taken?"".* For him is a lot about discipline and structure: *"We do not systemically listen enough to customers and markets. We are not strong and disciplined enough in our listening to markets in capturing information and have the big picture".*

-**About having the right capabilities and analyzing what they need in order to execute it.** Lieven Bertier reflects about the last SPM exercise *"Are we having the right building stones or stepping stones for the future? That is something that to me was not well enough covered"* and what is an opportunity to improve for Ann Desender is *"Stop creating projects around people, but people around projects. What we really need, and do we have the skills yes or no. That's an opportunity".*

-The high technology-driven way of innovating in Barco. For Jan de Witte *"A second gap we have is to understand the customers' end to end process. We have listened to near surrounding our technology"*, according to him *"In the world of today is much more about business models and new user experience. If you are stuck in technology you never jump far enough"*. This big focus on products and technology and not enough attention to experiences and business models suggests to me a relationship with avoiding the validation of internal assumptions. The "we know best" is a trending topic response in the organization according to Guy Van Wijmeersch, as a possible manifestation of their internal resistance to be challenged. A challenge to their traditional and until now successful way of doing business. A challenge to knowing what is the right application for their technologies, giving more attention to the experience that the end user expects from that product. This could be directly linked to the culture and mindset of the organization together with the skill set of Barco employees, and will be addressed in the hypotheses formulated later.

> **"In the world of today is much more about business models and new user experience. If you are stuck in technology you never jump far enough"**

> **"As an organization we force them to be internally focused"**

-The lack of freedom that employees probably feel was also mentioned, since they are forced to be very focused on more operational processes and the performance of the core business, and not that much on the learning and exploration of future business. In words of Jan de Witte *"When you look outside you see change and need for change. I think most people feel more comfortable than we assume looking outside. It is just that as an organization we force them to be internally focused"*.

-The format given to the results of the SMP exercise is also a concern for the CEO Jan de Witte *"Too many products, but not enough customer value propositions. [...] I don't need all those numbers (asking about the best outcome of an SMP according to him). I need good order of magnitude. We overdo it on the numbers, our comfort zone again, and then we underdo in the technical and marketing side, scenario planning..."* and Bertier justifies it with: *"The next two years need to be analyzed (with numbers) but the further you look in time...the more difficult or impossible it gets"* and he adds, *"Giving the predictive powers attributed to the SMP I don't think it is worth it look further ahead than 3 years because the SMP has a strong financial drive, and if you have to look 5 years ahead financially it becomes very tough."*

-About the workability, impact and role of the SMP outcome, Bertier reflects: *"That's another big challenge of the SMP now, we make it we share it once with the team and then it is like...done"* and for Ann Desender, who says: *"How can you channel this more? If there is someone who does that sharing, how do you bring that more broad in your company? How do you make that bridge that people are really doing something with it (talking about the outcome of the SMP)"*. Coming back to the words of Jan de Witte, *"It is an exercise. Is not a way of living yet (the new SMP). So the moment when the exercise is over people fall back to their comfort zone. The only way to sustain it is to have people who, product managers who live in this way (and senior executives).""*

> **"I don't need all those numbers (asking about the best outcome of an SMP according to him). I need good order of magnitude. We overdo it on the numbers, our comfort zone again, and then we underdo in the technical and marketing side, scenario planning..."**

Insights

As a conclusion of these talks, and according to the CEO's words, the opportunity lies in *"having the right people who look outside the organization in a more continuous way"*. This should be done with the aim to learn from other businesses, and then apply those learnings internally to find the right application for their technologies. This requires moving from the "technology focus" comfort zone towards the consideration of new business models and customer centricity as a start for future innovation. There are also concerns about how frequently these practices happen in Barco and how their results are used once the exercise is finished. The format of the results and the way they are shared in the organization also shows a lot of potential for improvement.

Having all those insights facilitated the discovering of relevant aspects of the SMP, which could be further evaluated. To continue the research and have a better understanding on why these things were happening in this way, the following 5 hypotheses were elaborated. They were used in the second round of interviews as 'provocative' statements, with the aim to create reactions and get a deeper understanding of the current situation. By defining these 'provocative' statements, the goal was to keep the interviewees prioritizing in the topics I was interested in and not in their own concerns or "agendas".

H1: "The vision or reason to be of the organization is not shared and known by everybody"

H2: "Barco does not look outside the organization enough to execute foresight activities"

H3: "Insights and knowledge generated by foresight activities are not brought in Barco in a shared and structured way"

H4: "Barco employees feel more comfortable when they can rely their proposals on numbers, roadmaps and analytics rather than by using storytelling or scenarios"

H5: "Barco tends to confirm hypotheses rather than challenge them"

Learnings from The Mom Test (Fitzpatrick, 2014) were used to conduct these interviews. Instead of focusing on the ideas or the directions I could already see, I focused on the customer. Considering the managers in Barco my "customers", I wanted to know about their problems and concerns, and the ways in which they were currently solving them.

Figure 2.12: The confort of focusing on technology

The opportunity

In parallel to the first interviews and influenced by the literature review, the opportunity or project challenge was reframed and hypothesized as follows:

Today Barco has the opportunity to change from an innovation approach based on inside-out technology push to start thinking holistically in all the environment elements that can have an impact on the business. Barco should be able to capture environment data, consolidate their insights in a continuous learning process and incorporate those in their (strategic) decision making processes, which can eventually influence strategy. This will help Barco to have a proactive attitude towards the future of the business, be better in foresight and respond smarter to environment shifts.

After the first interviews, the initial focus of the project was fine-tuned and it changed from 4 steps (Problem shaping) to 3 in Figure 2.13. This new representation of the opportunity or challenge has changed in some aspects:

The phase called 'Validating strategies' has been deleted as a phase because it can be derived from the literature review and the first insights of the internal research that validation is an embedded practice in any process related to foresight.

"To support Barco in capturing environment data, consolidating their insights and incorporating them in their (strategic) decision making processes*"

*that have the potential to influence strategy

In between the first and the second phase, there is now a phase called 'Consolidate insights' because it has been learned that this is a crucial step in foresight. And the word 'translating', present in phase two, is now a crucial element when consolidating insights.

The fourth step named 'Implementing the strategies in the portfolio' has been deleted when narrowing down the scope of the project. Therefore it is limited now to 'Incorporate in Strategy', but not focused yet in what would it imply portfolio-wise.
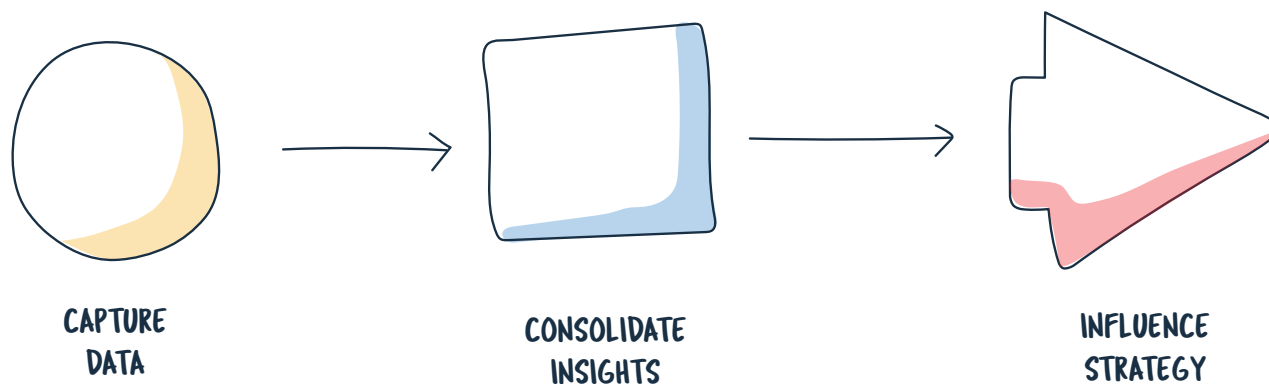
CAPTURE DATA → **CONSOLIDATE INSIGHTS** → **INFLUENCE STRATEGY**

Figure 2.13: The reframed opportunity

Internal interviews

The five hypotheses presented at the end of the section 'Corporate Strategic Exercises' were used during the second round of interviews, this time with **9 interviewees**, as provocative statements to create reactions and to get a deeper understanding of the current status of strategic exercises in Barco. The goal was to find the underlying reasons that explain why Barco experiences difficulties in "capturing environment data, consolidating their insights and incorporating them in their (strategic) decision making processes".

There were two outcomes of the interviews:

First, I was able to define the three paradoxes that I believe are hindering Barco from achieving what I hypothesized they want, the opportunity.

Second, I got a considerable amount of insights that could be the reason for this, and I draw conclusions that I would later validate in a workshop.

Figure 2.14: Outcomes of the internal interviews

45

The paradoxes

Three paradoxes emerged along the 13 interviews (one of them was added later, but done with the same purpose) as the potential barriers that could be hindering Barco from achieving what they want. The insights I got to define the paradoxes were triangulated, in order to ensure their consistency as they would be confronted with the final outcome at the end of the project.

Hans Rooms
VP Global Services,
Enterprise

Carl Vanden Bussche
Investor Relations

Pieter Gillegot-Vergauwe
Director Product management,
entertainment (projectors)

Wouter Bonte
Strategic Marketing Director
Events, ProAV & Events

Katia Villaseca
Market Intelligence Manager,
Meeting Experience

Nicolas Vanden Abeele
Senior VP Entertainment

Steven Delputte
Technology Manager, General
Services

Geert Carrein
VP Diagnostic Imaging HC

Gerrit Vermeire
Director Product Management,
Operator Experience

Evelyne Aelbrecht
Customer Experience Manager,
Meeting Experience

Figure 2.15: Employees interviewed in the second round of interviews

45

Paradox 1

Because there is a renewed strategy, Barco needs to build in new capabilities.

Because the right capabilities are not present in the company yet, the employees are facing difficulties in embracing the strategy.

This is supported by the fact that some elements of the renewed strategy are calling employees to consider business models and customer centricity as innovation to the same extent they have always considered technology innovation. This has brought some problems in their practices, according to Wouter Bonte, the Strategic Marketing Director of Events, *"they created a strategy that focuses on services when we were doing badly even in break&fix services, so that was a hard moment for us".* He also mentioned that even customers were "laughing" at them when they started bringing a service proposition when they were not able to manage successfully their own break&fix support yet.

"We don't have good product managers, we have people who check execution (...) It is not time, it is a mindset, is training"

According to the CEO Jan De Witte *"We don't have good product managers, we have people who check execution (...) It is not time, it is a mindset, is training. Is when in technology businesses, when the people who do your product management are more engineer than business leaders, then everything, strategies, looks like the next version of that box that you are selling already".* This can be understood as a mismatch between the current capabilities and what the corporate strategy is asking from the employees.

In addition to that, the corporate does not count on the support of a strategic department, service designers, interaction designers, etc, which difficulties supporting other employees to execute the strategy.

Figure 2.16: Metaphor representing the lack of capabilities

Paradox 2

Because Barco usually focuses on operating in small niche markets, they set technology performance and features as their key differentiator against competitors.

Because they use technology performance and features as their key differentiator, they invest fewer resources in including business models and customer insights to develop solutions with a more holistic approach.

Because they do not invest enough in having a holistic approach to develop solutions, they fail to grow their total addressable market in those small niche markets.

It is possible to get the first feeling of this in the main page of their website (Figure 2.17), where they market their solutions focusing mainly on the technical specifications:

In addition, Jan De Witte explains that he misses *"people who understand markets, who have foresight in what may happen in the market,*

customers, competition, new technologies and business models…, translate that into 'this is how we could play, this is the threat and opportunity' (…). What is the customer problem you are going to solve now, five years from now, ten years from now. First thing is to understand that customer need, and then you need the agility to try to understand what technologies could fulfill that,(…) which business models."

"First thing is to understand that customer need, and then you need the agility to try to understand what technologies could fulfill that,(…) which business models…"

There is also the example of Unisee, a new product for control rooms, developed inside the Enterprise division. This product had a development process of 4 years, and what was initially going to be a technical upgrade (to solve some problems related to the connectivity of the display with other parts provided by other manufacturers), ended up improving the installer's experience and using that as the unique selling point compared to competitors. This addition, amongst others, happened after the business case was approved,

and only in the last year of the development process. According to the Director Product Management of Operator Experience, Gerrit Vermeire, *"the majority of the value propositions were defined in the last 20% of the four years that the project took"*. In his words, the main challenge for the team was to go *"beyond the incremental stuff, focus on one specific thing and create a new value proposition"*. As Evelyne Aelbrecht, customer experience manager of Clickshare highlighted in her interview, this is a frequent comment: *""What else can we do? We must have missed something, and there must be something else… Maybe there other things that we don't see…" And then we don't go out anymore"*.
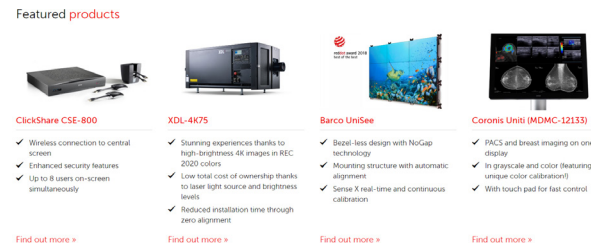
Featured products

ClickShare CSE-800
- ✓ Wireless connection to central screen
- ✓ Enhanced security features
- ✓ Up to 8 users on-screen simultaneously

Find out more »

XDL-4K75
- ✓ Stunning experiences thanks to high-brightness 4K images in REC 2020 colors
- ✓ Low total cost of ownership thanks to laser light source and brightness levels
- ✓ Reduced installation time through zero alignment

Find out more »

Barco UniSee
- ✓ Bezel-less design with NoGap technology
- ✓ Mounting structure with automatic alignment
- ✓ Sense X real-time and continuous calibration

Find out more »

Coronis Uniti (MDMC-12133)
- ✓ PACS and breast imaging on one display
- ✓ In grayscale and color (featuring unique color calibration!)
- ✓ With touch pad for fast control

Find out more »

Figure 2.17: The main page of Barco.com/uk

Figure 2.18: Metaphor representing the big focus on technology

Paradox 3

Because customer validation is required to ensure meaningful solutions, a clash with the expertise of the development teams can occur.

Because the expertise of the development teams can feel challenged, customer validation is limited.

According to Gerrit Vermeire, *"we don't have people with the right skills to go out with a blank paper"* and he added that it is easier for strategic marketers and product managers (sometimes also R&D teams, but very limited) to go out to customers earlier when it is about a services, because *"the lack of expertise makes you go out earlier"*. But what happens when it is about getting customer insights about a new product, they go out only when they have a well-defined idea and that usually the process is *"to go out to confirm"* rather than to challenge their own value proposition. However, Evelyne Aelbrecht says *"I know some people (R&D) who are willing to use paper mockups because they were using in their previous companies"* but she adds that *"product management is a little bit on top of that. They*

just say: "no, no, no, we are the ones facing the customer, and we are the ones with them". I think that it is a limitation that the R&D teams are not required to be customer facing. We don't recruit them in that way"*.

In addition, employees are not measured on to what extent they contribute and prepare their business for the future. According to Hanne Caspersen, Creative Director Trends at Philips, this is an ongoing practice in Philips, where parameters are used to measure employees behavior, for example, 'Outside-in thinking' is one of the 6 indicators they currently use.

On the other hand, the Technology manager Steven Delputte executes some end user-observations on his own, by going to control rooms and observe how operators work daily with their technology. Therefore, it is possible to see that some individuals are taking the lead in

their own initiatives, to do what they consider that should be done to act proactively.

"product management is a little bit on top of that. They just say: "no, no, no, we are the ones facing the customer, and we are the ones with them". I think that it is a limitation that the R&D teams are not required to be customer facing. We don't recruit them in that way"

The last Straight-up presentation, given by Jan de Witte on the 10th of October, showcases customer centricity as an aspect in which Barco is falling behind. The big internal focus and the complicatedness inside the organization are having as a consequence too little time dedicated to the customer, which usually ends up in an attempt to fix 'customer gaps' after the launch. The main conclusion of the presentation is that the *"voice of the customer"* should be brought earlier and consistently in any innovation process (Straight Up, 3Q2018).

Figure 2.19: Metaphor representing the resistance to be challenged

Workshop

After the second round of interviews, the responses of the interviewees were considered as possible underlying reasons that could confirm the hypotheses that I defined, and they were clustered. Based on those clusters I created a 2 hours workshop.
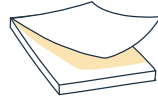
To start, I asked four managers from the three different divisions to discuss recent past practices within their teams, that they believe are helping them to prepare their business units for the future. To create this exercise, I was inspired by the "path of expression" (Sanders and Stappers, 2012) (Figure 2.20). By using an adapted "path of expression", the participants were asked to, from the present (1), go back to a past recent experience (2) about a process that had helped to prepare their business unit for the future, and then conclude the exercise projecting it to a desired future (3).

First, they shared their practices and discussed their different approaches, to finally reflect on their successes, learnings, and things that they would like to try next.

During the second part of the workshop, the previously mentioned clusters were used to trigger a discussion. They had to discuss and rate to what extent they agreed or disagreed with the facts contained in those clusters, and to what extent they considered them the reasons that were hindering them. This created a moment where they could listen to each other's argumentations against or in favor of what other colleagues said before. Finally, they were asked to say what they needed from Barco in order to overcome what seemed to be barriers (See templates in Appendix E).

Figure 2.20: The path of expression. Adapted with changes from Sanders and Stappers (2012).

*Figure 2.21:
Analyzing the
results of the
workshop*

Learnings

With the insights I got from the interviewees' responses to the five initial statements, the reaction of the four workshop participants to those, their reflection on their current practices, and what they said they need from Barco to overcome their difficulties or make reality what they miss, I elaborated one learning card (Figure 2.22), an Strategyzer's tool (Strategyzer, 2015), for each of the five initial hypotheses.

Learning card

I believed that

I observed that

Form that I learned that

Figure 2.22: The learning card. Adapted with changes from Strategyzer (2015).

Hypothesis 1

I **believed** that **"The vision or reason to be of the organization is not shared and known by everybody"**

I **observed** that there is an overall vision/strategy, but employees do not know what it means for their businesses. As a result, many point out that an unclear vision/strategy? feels the same as not having a vision, and businesses miss what some call "The North Star".

From that, I **learned** that the overall strategy does not resonate within each business units in a way that makes them proactive. Because they do not know what the overarching strategy asks from them, business units tend to be reactive rather than proactive to market shifts, and they end up innovating out of necessity.

"People are not measured on their foresight activities"

Hypothesis 2

I **believed** that "Barco does not look outside the organization to execute foresight activities"

I **observed** that Barco employees' behavior in relation to foresight activities is not measured, and this together with the fact that they mainly involve internal points of view in decision-making processes, leads to a lack of willingness to look outside the organization. They are aware that there is a very limited external inspiration, and that they are not learning enough from other businesses when looking outside and how the environment could affect their businesses. From their recent innovation projects, they have learned that they need to think holistically and consider all the elements that come into play in each value proposition, like knowledge on markets, channels, business models, etc.
There also is a willingness to be more

proactive and prioritize horizons 2 and 3 initiatives, and managing those in a "smart innovation portfolio". They learned that they need to avoid "innovating out of necessity" when the markets start flattening and to be more proactive because by behaving that way, they are missing many opportunities. Middle managers believe that product management should measure this proactive behavior and they expect directions from top management to look beyond numbers. However, they consider that people out of the core business should be the ones leading this proactive role that looks beyond the daily operations to shape future direction. They struggle because this requires a different mindset that is not compatible with "having the feet on the ground" to focus on daily operations and meet quarterly goals.

From that, I **learned** that the willingness to look beyond horizon one (by executing and consolidating foresight activities) seems to be just words, and waits for higher management to give instructions. Employees are not triggered to take the initiative and they keep themselves busy with the daily operations, the ones they have to report on regularly. It is important to consider the risk of putting this into practice on the side of the core business, because of the difficulty that can encompass to bring it back to the primary processes. In addition, if this is executed on the side, the chances to make it resonate and create an impact decrease, which is unwished for this project.

"If you are talking how technology is shifting the market, our customers, business models; then I see less people being consistent"

Hypothesis 3

I **believed** that "Insights and knowledge generated by foresight activities are not brought in Barco in a shared and structured way"

I **observed** that Barco divisions rely on communication based on personal networks. This means that insights stay in the mind of people and there is not a culture of info-sharing in a structured or official way. Employees know about certain developments or relevant insights for their business units because somebody in their personal network shares this information with them. What they miss is not a lack of dialogue space between business units or across divisions, but a lack of learning attitude between them. This means that it is possible to easily talk to whoever

"We don't get excited or encouraged to train each other"

"If we go talk to other departments it is "sharing", it is not learning. It is not a bi-directional thing"

you want and get insights from them, but there is not a culture that encourages them to learn from each other's practices, knowledge, etc...However, they would like to have more support from other divisions and break the silo, to create a space where they can learn from each other.

From that, I **learned** that Barco employees are satisfied with their informal communication "channels". However, there is a willingness to encourage the sharing of insights and knowledge in a structured way across business units, in order to be able to learn from each other and *"break the silos"* in words of Wouter Bonte.

Hypothesis 4

I **believed** that "Barco employees feel more comfortable when they can rely their proposals on numbers, roadmaps and analytics rather than by using storytelling or scenarios"

I **observed** that he general opinion is that not enough risks are allowed, the freedom is felt as very limited, and when something is not 99% sure, it is usually stopped. They miss a less restrictive environment to experiment with new ideas/ opportunities. This has also relation with having the right background/skills to be sensitive to the "belly feeling" and qualitative data. Sometimes some argumentations do not have that much impact on paper as when they are narrated or presented in a scenario. As said, there are some people who are better on this, as others are on operational processes. However, with some internal exercises like the Profit Plan, they feel forced to "have their feet on the ground", which is seen as a barrier when having to look beyond horizon one. They think that a continuous focus on the early stages of a project, when everything is still uncertain and ambiguous, is key for the success of the project.

They ask from Barco to have an environment where experimenting with new ideas is allowed, with a continuous challenge on horizon two

"We should find a good balance between the short term (analytical and detailed) and the long term (more storytelling). And we need to put some budget there"

and three initiatives, where 'continuous' means beyond the SMP exercise.

From that, I **learned** that the corporate's behavior, in general, seems to force employees to execute what is sure and focus on the tangible. However, some people would appreciate more freedom, to trust the "belly feeling" and to present proposals about uncertain cases in a different way, in order to get enough attention from higher management.

Hypothesis 5

I **believed** that "Barco tends to confirm hypotheses rather than challenge them"

I **observed** that because Barco is a large corporate that is currently doing well and has a good market position, for many there is not such a feeling of being challenged. Now focusing on the validation of solutions, managers recognize that there is a tendency to bring an "almost finished product" when is time to get feedback or insights from end users and customers. For that reason, it usually ends up being a "check" rather than a challenge to the idea presented. This can be caused due to a

"Triangulation is mostly internal. We already have a well defined idea and we then go out to confirm"

lack of external challenge in a very engineering organization with a big focus on their internal engineering expertise. The time pressure on R&D teams also kills their challenging mindset. As a result, there is a claim for a cultural change that accepts fast failure and experimentation, in something that could look like an "incubator framework". A framework where the validation of customer needs is better backed up, beyond *"one testimonial"* and the internal expertise.

From that, I **learned** that there is a clear need to end the fear to accept that *"we don't know everything about our end-users/customers"* and to open up minds to accept being challenged by other parties that do not always belong to their comfort zone. Now is a good moment for the organization to learn that sometimes failure is learning, and the earlier it is discovered, the less money is wasted. This topic is strongly related to Barco's DNA and the culture of the organization.

Figure 2.23: Analyzing the results of the workshop

Insights

The strategy does not have a 'more tangible' translation that makes it more workable for business units. This does **not favor a proactive** attitude towards making that vision real but provokes a more reactive response to market changes.

Managers in Barco **expect instructions from top-management** to plan and execute foresight activities, to turn that reactive attitude into proactive.

Because managers dedicated to the core business are focused on meeting the short term objectives, they expect that foresight activities happen on the side of the established business. They envision a dedicated team with the right mindset and exploratory attitude.

Managers would **appreciate learning more from the practices of other business units**. They expect from Barco to facilitate a truly learning attitude, via their informal communication channels, what they call "personal network".

Managers feel forced to focus on a certain business. However, they would **appreciate more experimentation** and be able to bring proposals that are not that certain but that need more experimentation to be validated.

There is a **need for change in mindset** that facilitates that employees in Barco look for and **accept being challenged**.

"We do it, we think about what you are saying, but we do it in a later phase. And then we often burn money for something that probably we should have done before the business case review"

Evelyne Aelbrecht, Customer Experience Manager at Barco

3
Define

The chapter 'Define' starts explaining the reframing of the opportunity space. Then the solution space is chosen and justified. Once the solution space is defined, a first design idea is proposed: the scenario prototyping workshop.

The chapter also has two sections dedicated to elaborate on scenario planning literature and other graduation assignments that arise from this project.

It concludes with an evaluation on how the scenario prototyping workshop fits within Barco's processes.

In this chapter, the knowledge gained in foresight starts to shape the solution space and the focus from now on is explained and justified too. In addition, thanks to the literature on scenario planning, more detail is given on why scenarios will be a crucial piece in the puzzle of this project and why Barco could benefit from incorporating them to their processes.

The final analysis of the current innovation processes in Barco uncovers additional challenges in the organization around true innovation, which will be added to the ones discovered in Chapter 2.

3.1
Solution space

After the first interviews, the opportunity space was reframed. The challenge was from that moment onwards:
"To support Barco in capturing environment data, consolidating their insights and incorporating them in their (strategic) decision making processes"*
*that have the potential to influence strategy and therefore the strategic portfolio of Barco

After analyzing the insights of the literature review and having processed the internal interviews, the solution space was chosen. Out of the three elements visible in the opportunity space, I personally decided to focus on the second step,

'Consolidate insights'. The solution space offered more than one option where to focus on, like 'Capture data' and 'Influence strategy'. Therefore, the following section called '3.2 Other assignments', offers a more detailed explanation about the other options that were not pursued. It is relevat to mention them because they could even mean a starting point for other graduation assignments.

I decided to focus on the second phase that characterizes foresight activities because of the

"To support Barco in capturing environment data, consolidating their insights and incorporating them in their (strategic) decision making processes*"

*that have the potential to influence strategy

opportunities that it could mean for Barco and because of my personal interest. I was not that much interested in the phase 'capture data' since this is something that Barco asks to consultancies in most of the cases. About the last phase, 'incorporate into strategy', it was not chosen because from my point of view it is imperative to have fixed the middle phase before moving to the last one. Therefore it would not have made sense "to put the cart before the horse".
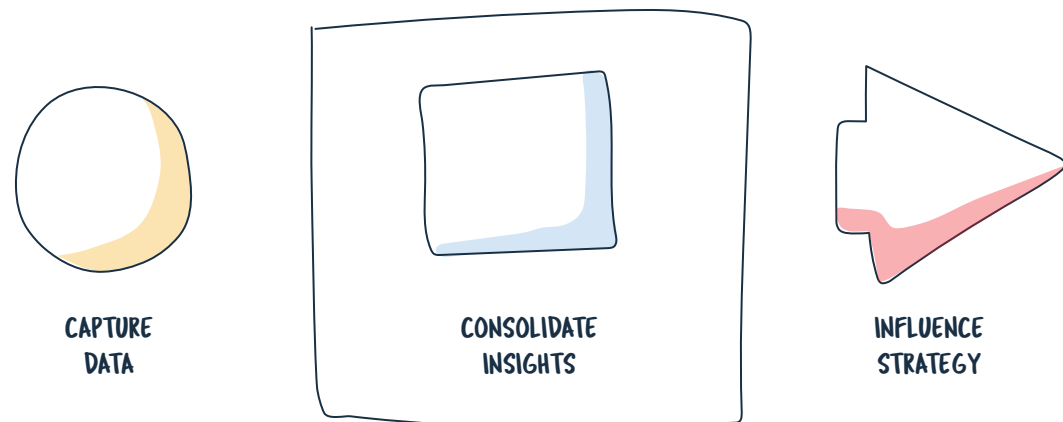
Figure 3.1: Solution space with highlighted focus on 'Consolidate insights'

CAPTURE DATA

CONSOLIDATE INSIGHTS

INFLUENCE STRATEGY

Scenario Prototyping workshop

This section describes the insights that influenced the solution that would fit in the 'consolidate insights' phase.

Barco management has a strong focus on meeting the short term objectives but they would appreciate some freedom to propose 'less certain' innovations to higher management. They expect higher management directions to execute foresight activities, to experiment and validate these options. But in order to do that, they first need the right means to communicate to higher management these options and the opportunities they could mean for Barco. The usual focus on the short term and the support that quantitative data means for these managers, makes this communication difficult. Therefore a workshop dedicated to 'prototype scenarios' and communicate strategic options to higher management will be designed.

This strategic exercise starts once the research has been done and the data has been captured. After having the raw data, there is a need to make an interpretation of it. That is the translation of research data into company insights. Those insights, based on the data that was gathered holistically from the business environment, can be structured and consolidated in complete and coherent stories or scenarios. Once the stories are shaped, those can be communicated in a more creative way than how it has been traditionally done in Barco and with a bigger focus on the end user.
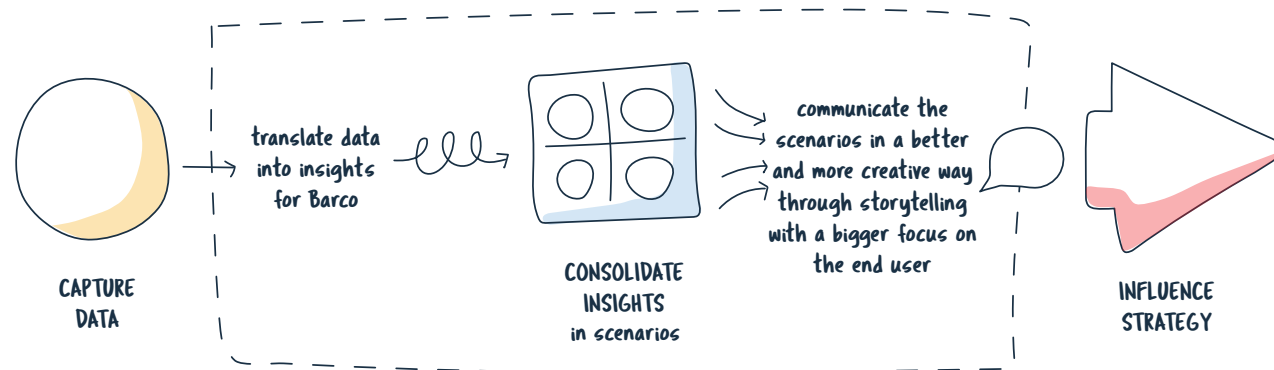
Figure 3.2: Basis for Scenario prototyping workshop

Scenario planning

This section is a literature review in scenario planning. It elaborates on the definition of scenario planning, the format that scenarios can take, and concludes with the strenghts and drawbacks of scenario planning.

Definition

According to Drew (2006) and Schoemaker (1995), scenarios should be "plans for learning rather than plans for implementation". In the work of Hussain, Tapinos and Knight (2017) a clarification is made: "scenario planning is not about predicting the future; it is about preparing an organization for a number of plausible futures". They are used as a "shared framework for strategic thinking" because they encourage diversity and the interpretation of external changes and opportunities. It is a description that contains (1) actors or protagonists (end user, customers, partners or installers in the case of Barco), (2) background information on the actors and assumptions about their environment and situation, including their past experiences, (3) the actors' goals or objectives, his expectations and needs and (4) the sequences of actions and events that occur along his experience with, in this case, the value proposition that Barco would offer (Go and Carroll, 2004).

In the world of design, scenarios or "written scenarios", as described in the Delft Design Guide (Van Boeijen, Daalhuizen, van der Schoor and Zijlstra, 2014), "tell a story about your intended users in a specific situation. Depending on the aim, the story depicts either existing product-user interactions or possible interactions in a future situation". In the world of user experience design, a scenario is a story about someone (usually the end users) using whatever is being designed to carry out a specific task or goal) and it is used to provide a picture of the intended or ideal user experience (IBM Corporation).

As learned from the several sources in this literature review, the suggested number of scenarios varies from a minimum of two to a maximum of six. Being four the number of scenarios more recommended.

Format

Scenarios can be textual narratives, storyboards, video mockups, or scripted prototypes among others. The narratives are usually created by researchers, or by participants in a workshop (Saritas and Aylen, 2010). For Wilkinson and Kupers (2013), the advantage of using storytelling to communicate scenarios is that a story cannot be disagreed, nobody can be against a story, because it is not a position, just a story. Furthermore, if the story is created in a memorable and vivid way it will allow top management and leaders to discuss the difficult issues contained in the scenarios without having to revisit the many arguments and facts connected with them. Some examples on how to make this possible are: "charismatic presenters; evocative graphics; memorable phrases, images, and archetypes; illustrative graphs of future outlooks; and the preparation of the audience through interviews, workshops, and other forms of participation". Numbers can also be added for consistency since their broad usage characterizes the innovation language of most corporate cultures. According to the large experience of the corporate Shell in creating scenarios "the persuasive power of scenarios in the world of business rests on an effective combination of narrative and numbers".
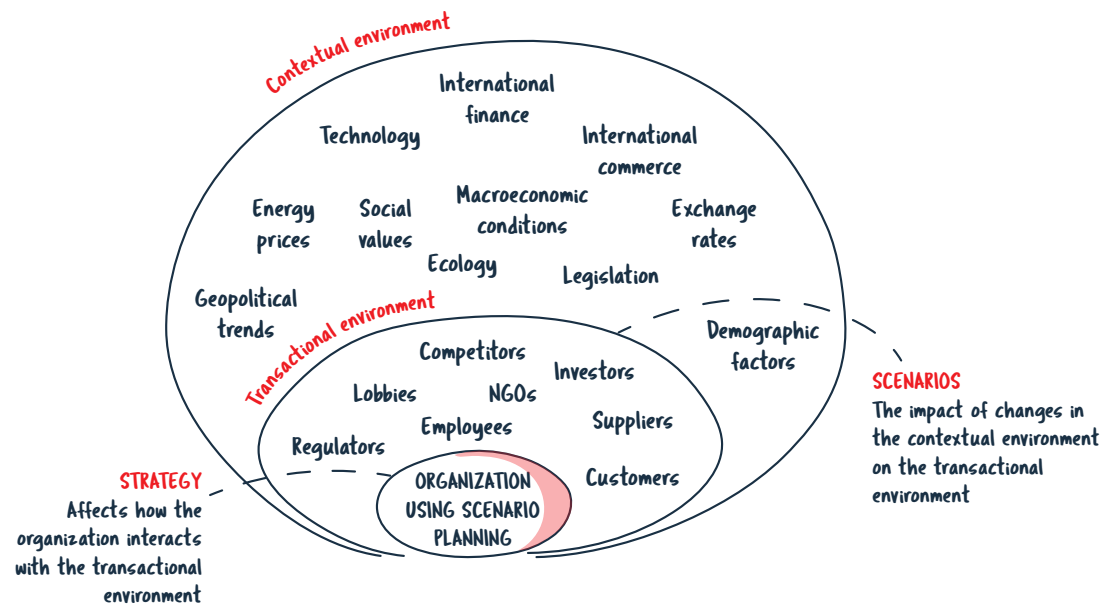
Strenghts

Scenarios are considered a "powerful tool for understanding uncertainty and developing a strategy accordingly" (Roxburgh, 2009). They have the potential to expand the thinking of the group that creates them. This is because by developing them, the team gains a deeper insight into the drivers of change that shape the scenarios, and they can learn to distinguish which of the drivers and trends matter to them and which not. Scenarios also help to uncover an inevitable or near-inevitable future. By considering demographic trends, economic and political factors, changes in trends and events or innovations, this forces the teams that create scenarios to look beyond the typical planning horizon. Scenarios also protect against 'groupthink'. This is something that can highly benefit Barco, to overcome the high influence that charismatic and leading people have in the final decisions made in the firm. Scenarios, therefore, provide a "political "safe haven" for contrarian thinking".

Scenarios encourage open and creative thinking and are highly participative and interactive (proven tools for that include games and quizzes, multimedia presentations, group voting and decision-making software, and "deep-dive" brainstorms). This technique guides managers towards a more effective decision making by preparing for a wide range of uncertainty; since scenarios allow the creation of a safe space in which to acknowledge uncertainty (Wilkinson and Kupers, 2013). They help to overcome typical biases and pitfalls of decision making like over-optimism or overconfidence, the tendency to look for confirming evidence, decision "framing",

under- and over-prediction of uncertainties (Drew, 2006; Schoemaker, 1995). By identifying disruptive innovations at an early stage, mapping out potential development paths for such innovations, scenarios are also strong in helping to build the appropriate organizational capabilities in response to those developments (Drew, 2006).

Scenarios also help in developing an organizational learning culture within the firm, driven by openness and commitment to change, and build in-house planning and strategic analysis skills. The creation of scenarios

Figure 3.3: The Oxford scenario planning approach distinguished two different environments, the known and familiar and the unknown. "Scenario planning is about exploring how larger contextual factors might affect an organization. Scenarios are developed by combining contextual factors (particularly ones that are less well-known and more uncertain). Each scenario will be based on a unique combination of contextual factors." Visual adapted from Ramirez et al., (2017).

encourages the attention of top management to a broad conversation on strategic issues and it is also a means of testing assumptions (Drew, 2006; Ramirez et al., 2017). They also bring flexibility and agility in decision-making processes. Scenario planning should be iterated and reperceived, as the drivers of change that shape them are in continuous change (Ramirez, Churchhouse, Palermo and Hoffmann, 2017).

According to Bodker (1999), scenarios are a vehicle of communication between the team members that participate in the scenario creation exercises (internal), but also external, out of the group and even out of the firm. About external involvement, scenarios accept involving external participants because "they depict possible futures but not the strategies to deal with them". They are also a good means to provoke new ideas and they can mean the seeds of what could be new businesses (Schoemaker, 1995).

Drawbacks

Scenarios do not give a pathway to the future and usually, it takes quite some time to understand their structure and how to create them. In some cases, there is too much reliance on soft data. The time and resources needed during the research phase and its analysis are considerable. For Ramirez et al. (2017), "organizations should expect to spend twice as much time setting expectations and defining the intent and usability of their scenarios as they do producing the scenarios themselves". About time and resources, another factor to consider is the difficulty to involve busy top managers who at first sight might not be the benefit of scenario planning (Drew, 2006). As such, another challenge of scenarios is that they need to create a sense of willingness and urgency to act on them (Schoemaker, 1995).

When talking about plausible "futures", the researchers clarify that they should be neither too improbable nor too familiar. There should be the appropriate balance between relevant and challenging: "relevant can be too familiar, but challenging can go unheard" and they illustrate it with this quote "You take the piece of bread and you put it in front of the goldfish, but not so far that the goldfish can't get it." (Ramirez et al., 2017; Wilkinson and Kupers, 2013).

Conclusion

Because of the numerous strenghts of scenario planning and having proved being a powerful tool in foresight, scenarios have been chosen to be the means managers will use to consolidate the insights and communicate them. They will facilitate the communication of the options because scenarios have a strong link with narratives and storytelling.

The strategic exercise, because it is grounded in the literature on foresight, will ideally involve external experts, customers, partners, etc. These participants, external to Barco, will challenge the internal knowledge of the organization, and hopefully, facilitate a change in mindset. This change in mindset will break the overconfidence that Barco has because of its traditional success, the "we know best".

Because managers expect higher management directions to execute foresight activities, an official strategic exercise that fits as part of the SMP exercise could be the solution. It should be possible to execute the exercise with the input used for the SMP. The options created will be communicated using storytelling as part of the SMP presentations.

Involving managers in foresight activities like this workshop has the potential to improve the attitude towards sharing information internally and with external experts. As learned from literature, the workshop has the potential to create more commitment towards the results of foresight activities, something that was highlighted in the first interviews as a pain point of the SMP exercise.

The workshop offers the opportunity to bring a learning exercise that will facilitate a change in mindset (Figure 3.4).

Learn to
- Interpret what the environment that surrounds Barco means for the business
- Integrate both outside-in knowledge with in-house expertise
- Upgrade and iterate those plausible scenarios in a continuous way.
- Discard options when they are no longer valid.
- Communicate next innovations in a novel and more creative and engaging way for Barco.
- Evaluate multiple scenarios and communicate them in a novel and more creative and engaging way in Barco. Make smart choices based on consolidated insights that are grounded in holistically gathered data.

Figure 3.4: A learning exercise

It also has some specific functions enumerated in figure 3.5, directly linked to the use of scenarios and narratives or storytelling.

Narratives

Inspire

Attract attention

Trigger debate

Initiate the next innovations

Scenarios

Pinpoint assumptions

Call for validation

Prioritize

Positioning

Like in brand strategy, a field of strategic design in which I gained some experience, a specific positioning was developed for the solution of the project. This helped to define better who is the customer of my "product", what are its features and how it will make the "users" feel.

"For product managers and strategic marketers, I will introduce an exercise within the front-end innovation process which is holistic and converging in the way that it consolidates insights from foresight activities. It allows Barco business units to continuously learn from the business environment and respond faster and smarter to its changes. This exercise will give teams the confidence to integrate outside-in knowledge with

Figure 3.5: Functions

internal expertise to inspire with narratives that will make them the reliable initiators of future innovations."

The positioning contains all the elements that, according to Roland Van Der Vorst (van der Vorst, 2017), explain what your brand does, what does it stand for, who is your target, and the benefits of your brand, in a short and concise statement. It talks about the target, the product category, its attributes audience and its functional, emotional and self-expressive benefits.

3.2
Other assignments

This section elaborates on the relationship between the phase 'Consolidate insights' and the other two potential areas of focus and their dependencies. It also includes the description of the other three possible assignments that, if executed, would sum up to this project.

Assignment on 'Capturing data'

This first phase that characterizes foresight activities is crucial since it constitutes the basis for any strategic exercise. For (Vecchiato & Roveda, 2010) it is about collecting data from the business environment of the organization. With a particular focus on new technologies and events in the social, economic, political and ecological landscapes which surround its business. Without data, there is nothing managers can learn from the market of their customers. This data can be both qualitative and quantitative, and Barco usually asks consultancies, like Addestino, for this time of research. Enterprise, one of the divisions at Barco, has a dedicated position for this, the Marketing Intelligence Manager figure. This person is in charge of consulting experts like Gardner and get insights mostly on technology and markets.

There is an opportunity to turn this phase of foresight into another graduation assignment and it could focus on answering questions like the following:

Considering the digital transformation and the user-centricity in which the new strategy focuses, what type of information would be more interesting for Barco to collect?
Which would be the skills needed to collect data that is relevant for Barco?
Should Barco have at least one position dedicated to this per Division? How should the communication and exchange of this information be between divisions?
What is the format that data should have to facilitate that Barco makes the translation from data to insights?

Assignment on 'Influencing strategy'

First, there is a translation from the research data into the insights that represent what that data means for Barco. Later, those insights are consolidated in coherent stories under a format of scenarios, and storytelling is used as a means to communicate what those scenarios could mean for Barco and its customers or which role could Barco play in those scenarios. These narratives are a powerful communication tool. They facilitate transmitting this interpretation to higher management so that they can make choices based on more than one strategic option. Once those choices are made, they have the potential to have an impact on the strategy of the organization. This strategy is the one that determines which products and services will Barco develop and which not. Therefore, some interesting questions that an assignment focused on this last phase should answer are:

How are strategic choices made in Barco contrasted or compared against their strategy?
To what extent can the decisions made today influence Barco's strategy? Can they help to rethink it?
And about the inverse process: How can Barco bring its strategy closer to management? By making it more tangible? How?
How can these strategic choices influence the strategic innovation portfolio of Barco?

3.3
Fit within Barco's processes

This section elaborates on where does the solution fit within current Barco innovation processes. Showing the relevance of this exercise and where it fits in relation to the SMP is very important for the acceptance of the solution.

Currently, there is no official version of the Product Life Cycle in Barco. Because of that, Niya Stoimenova created this theoretical version thanks to the input of the interviews she conducted (Figure 3.6).

The 'scenario prototyping workshop' fits in the "define" phase of the double diamond model (British Design Council, 2005), the red area in Figure 3.7. Therefore and if compared with Barco's product life cycle in Figure 3.6, the strategic exercise has a clear and defined action place within Barco's theoretical process. If the workshop would be embedded in the PLC process as the figure 3.7 shows, the SMP could be then an 'annual picture' of this process. This makes sense, since the intention is that this

workshop becomes part of the official strategic exercises in Barco. Which will facilitate Barco to make a continuous translation of what does their business environment mean for the organization.
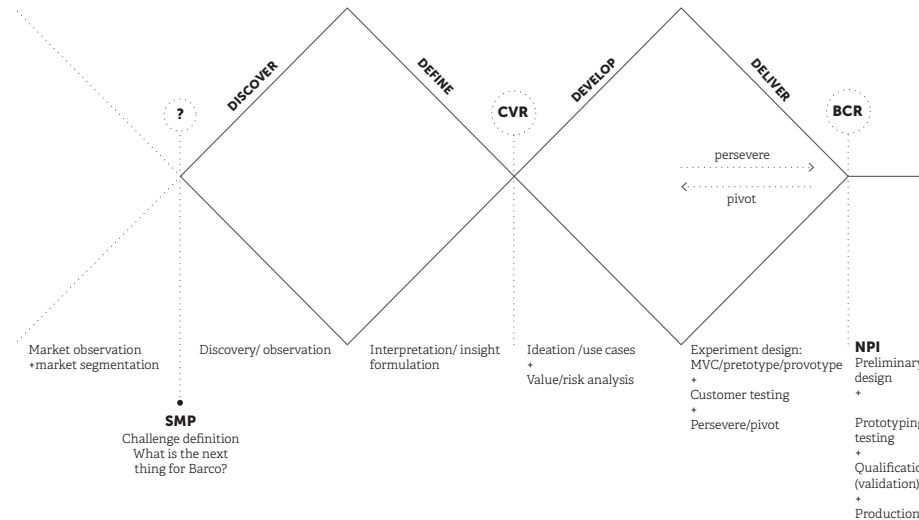
Figure 3.6: Barco's Product Life Cycle (PLC). Adapted from "Unlocking innovation. Building a design-led ambidextrous organization" by Stoimenova (2017)

CVR: Concept validation review
BCR: Business case review
SMP: Strategic marketing plan
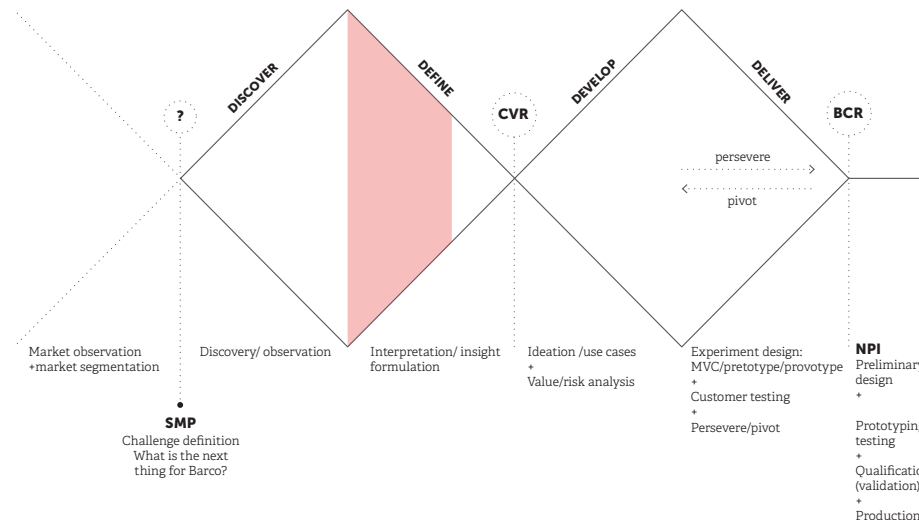
Figure 3.7: Scenario prototyping workshop within Barco's Product Life Cycle (PLC). Adapted from "Unlocking innovation. Building a design-led ambidextrous organization" by Stoimenova (2017)

The real-life processes in Barco

After situating the strategic exercise within one of Barco's current innovation process, the PLC, it is relevant to analyze how things happen in reality. This requires looking at the real innovation processes that Barco teams execute, to identify if some deviations and differences occur.

By previously having asked the four participants (from the 3 divisions) of the first workshop to draw and describe their recent past practices within their teams, the material that I could use to compare with was already available.

As expected, there was a big difference in what the participants could recall of their recent past processes and practices, when compared with the theoretical process.

These are the differences observed:

- The SMP clearly triggers the new innovations in the Healthcare division.

- A lot of emphasis and effort is put into all the elements researched prior to the SMP definition in Healthcare. Hhowever, there are no clear criteria for idea selection besides the "size of return".

- In OX, the research is triggered mainly by technology developments and clearly starts "out of necessity".

- In OX, the BCR was approved before having a
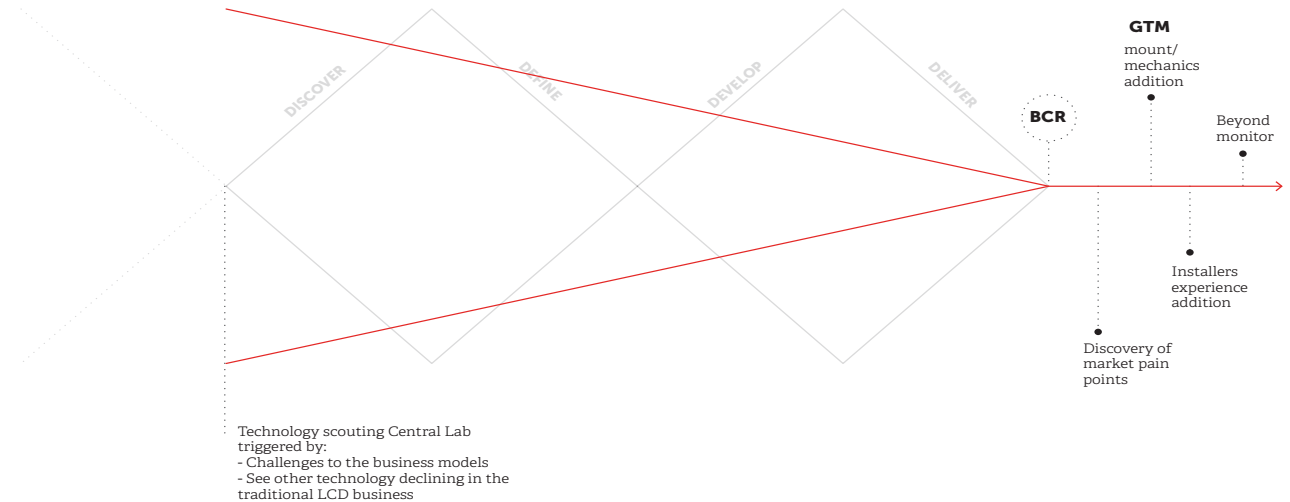
Figure 3.9: The process according to Gerrit Vermeire - Director Product Management Operator Experience (OX) - Unisee project, 4 years

Figure 3.8: The process according to Geert Carrein - VP Strategic Marketing Diagnostic Imaging - During this process Demetra (skin disease diagnosis) and other opportunities were discovered
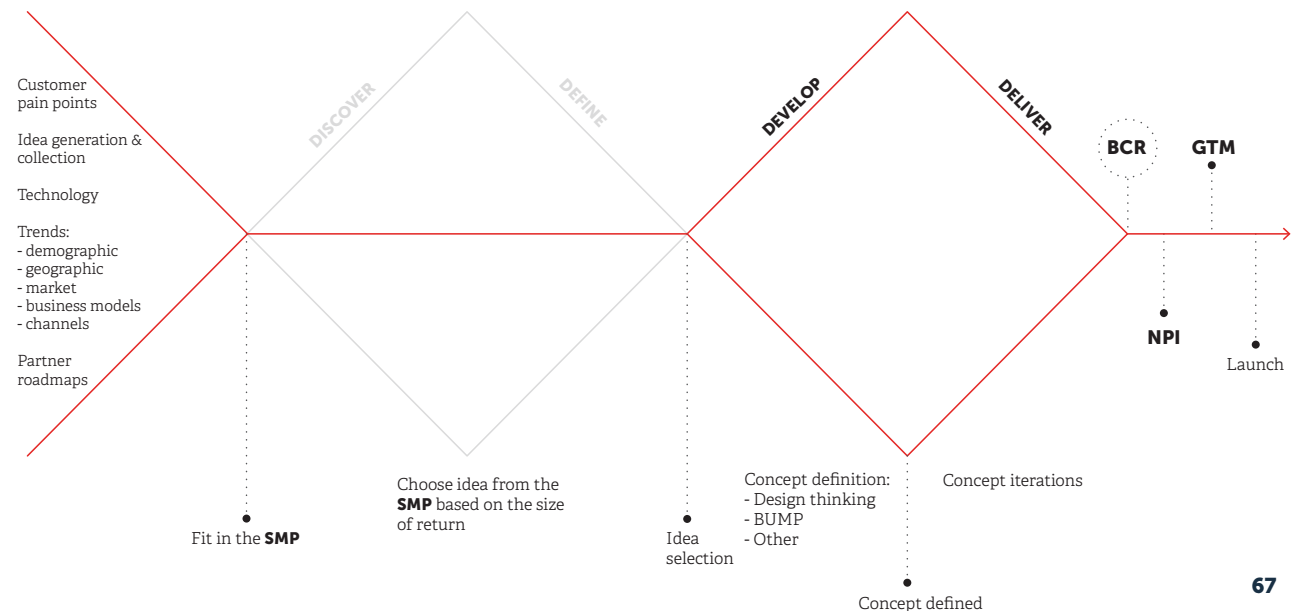
clear idea on what was the outcome going to be like.

- Some crucial elements like the market pain points, the role of the installers as an element to have in consideration, etc, were brought clearly too late in the project. This happened because only after 2,5 years of the 4 that the project lasted, product management started to have interviews with partners and installers.

- Only four months before launch, they could get the right story or value proposition for Unisee. In the end, the expected project outcome upgraded from being a better quality monitor (at the moment of BCR), to be an offer "beyond monitor". As a result, 'Unisee' is a video wall LCD that has considered mechanics, mounting, repairing, the installers' experience, a 'damages check' service prior to installation, the registration of the product, etc... in resume, an integrated solution.

- In this process, the key step named BCR has a format that does not allow teams to incorporate more than one option to evaluate and choose. It is predefined for one project. The focus is on the outcome of this process and being the outcome

the BCR that only accepts one option, managers consequently bring one option. This does not facilitate the evaluation of more than one strategic option.

- The success criteria on both projects were based on the size of return and the technology aspect.

During the interview with Evelyne Aelbrecht, many insights in relation to this topic where discussed. About getting enough resources to investigate and do research in the first diamond she said *"If you need money for this part, there is when the difficulty is. You don't get funding to investigate a lot"* and that about where the budget is mostly spent she added: *"There is a lot of the budget spent after BCR [...]", we go seating with a lot of people and do workshops, workshops, workshops to refine that idea and to make sure that we don't forget crucial options. So we do it, we think about what you are saying, but we do it in a later phase. And then we often burn money for something that probably we should have done before BCR. Because after BCR we do it, we seat with 20 people in a workshop and I mean 20 well-paid people for 3 hours in three days and stuff like that".*

"So we do it, we think about what you are saying, but we do it in a later phase. And then we often burn money for something that probably we should have done before the BCR"

"The process is sometimes more important than the outcome. So the fact that people feel involved is way more important than what is actually written there"

Luc Van Wanroij, SPD graduate student at PEPP

4
Develop

The chapter 'Develop' elaborates on the idea of the Scenario Prototyping workshop and the limitations and barriers found along the way. It continues with the other two solutions proposed and finally executed: the internal campaign and the framework. The chapter concludes with the details of the framework, its content and some tips for its implementation.

Thanks to the first ambition of creating the scenario prototyping workshop, new learnings about the challenges that the company experiments are added in this chapter .

A big part of it is dedicated to the feedback and tips that the corporates and the consultants interviewed offered as part of a first validation. The reader can find all the key elements that, according to them, should represent the framework, what is their role and purpose, how they are structured and how should be the interaction between them.

4.1
Scenario prototyping workshop development

Scenario creation process

This section finishes the literature review on scenario planning with the process that is normally followed to create scenarios. The process described here is derived from all that was learned from the miterature sources (Drew (2006); Schoemaker (1995); Ramirez et al. (2017); Saritas and Aylen (2010); Hussain et al. (2017)). This is presented to give a first impression about how the Scenario prototyping workshop could look like. A bullet list with the simplified steps in scenario creation is presented:
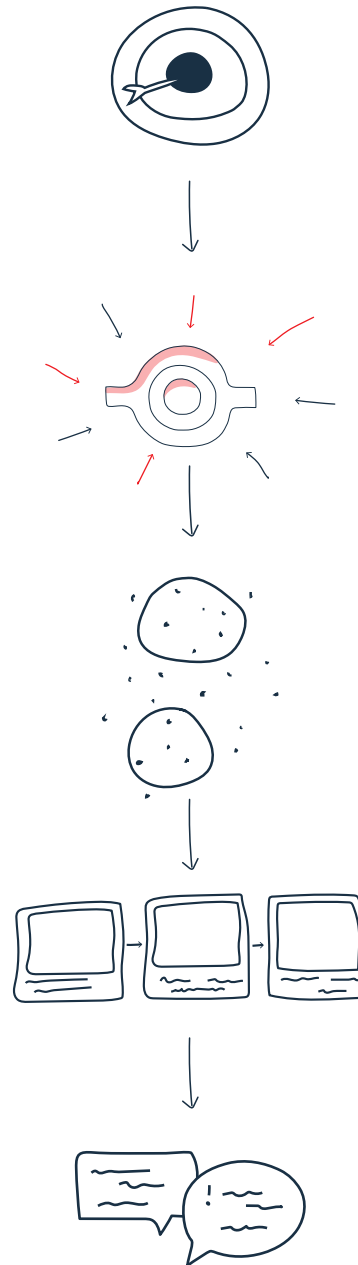
1. Define the scope and purpose of the scenario creation

2. Map the context (DESTEP analysis, define uncertainties and drivers of change)

3. Choose the most significant uncertainties or the drivers of change for Barco.

4. Find the scenario themes and cluster the insights around them

5. Write the scenarios and choose a representation technique/format

6. Communicate the scenario in the preferred format (storytelling, plays, mockups, video)

Approaching the teams

The solution space had been defined and a better understanding of how the exercise could look like was acquired. The next step was to find suitable teams to do this workshop with. The teams should meet two requisites:
1. Have a defined research question
2. Have research data collected by an external party.

To find the right team to co-create this workshop with, 4 meetings with team members from three different business units were arranged.
The findings that drove me to focus on the phase 'Consolidate Insights' were exposed together with the proposal of co-creating the workshop with them. And these were the learnings:

Learnings

People who were involved in these conversations followed the line of reasoning and agreed with the majority of the content discussed. Sometimes they even added their insights to my drawings. However, they were not available to collaborate at the moment for several reasons.

High dependency on the budget to push research activities further

It seems that there is insecurity to carry out initial research with a reduced budget. This can be due to a lack of confidence on own skills to go out and discover unexpected things yourself, something mentioned several times during the interviews. As a result, this makes the exploratory phase highly dependent on the budget which does not favor a proactive attitude and continuous learning behavior.

Exploring the business environment to discover other options beyond the first opportunity identified is avoided

The reason for that is because it means going out of the comfort zone. Diving in the unknown is difficult and can bring unexpected results. This clashes with the self-assurance of the firm's culture. Teams feel reluctant to compromise themselves with the starting of a new initiative because there is a feeling that when somebody starts a new venture, this person is crushed to finish it. On top of that, if your initiative does not end up being a successful business, it is not seen as learning but as a failure. As a result, this becomes a barrier for building an explorative culture.

Make a quick BCR to get the budget earlier

Teams try to get budget as fast as possible but this usually happens without having explored other options beforehand. Teams try to get a BCR approved as fast as possible by presenting strong evidence that proves that the business will be a success (It is important to notice that the biggest limitation of the BCR is its format, which only accepts one proposal and therefore it does not favor the comparison of options). This evidences usually start from "the common sense of someone", "one testimonial", one report or when somebody sees a pattern out of the feedback of several customers. This practice is very linked to the "opportunistic" way of innovating in the organization. This represents a threat to looking at the business environment in a holistic way and therefore it puts in risk the evaluation of other options. Ideally, the budget should be used to open up again once the BCR is approved. The biggest danger then lies in using those resources to confirm the initial business idea, instead of challenging it, as Evelyne Aalbrecht says *"and then we often burn money for something that probably we should have done before BCR [...] we seat with 20 people in a workshop and I mean 20 well-paid people for 3 hours in three days and stuff like that."*. For her and for Guy, a solution that could work would be to implement a gradual budgeting system.

Conclusion

This section elaborates on three solutions as a response to the learnings:

Options prototyping workshop

At this moment, despite the learnings, the idea of organizing a workshop with a Barco team was still on top of mind. However, since it was learned that (1) the resources periodicity limits a continuous learning behavior and (2) the workshop on Scenario Prototyping is not perceived as something that much urgent, two other solutions are proposed below. They could be used as different means to spark the interest to become a proactive learner from the business environment.

Internal campaign: Creating awareness about the importance of consolidating data into insights

Co-creating a scenario prototyping workshop is not perceived as 'urgent'. Therefore, a campaign to create awareness will be carried out. It will be focused on highlighting the importance of looking at the business environment and interpreting what it could mean for the organization. It will help teams to reflect proactively on how the events that happen in the business environment of Barco could affect the firm.

Low-cost data collection, tips & tricks

Since some teams highlighted that they do not have enough research data to start the Scenario Prototyping workshop, a "Low-cost Data Collection Toolkit" could be created. This toolkit would support teams willing to complete their research by suggesting tools and tricks.

4.2
Final solutions

After evaluating the learnings and insights, two decisions were made. The first one was to carry out the internal campaign in Barco. The second one, more theoretical and academic, is about the elaboration of a framework.

Internal campaign: 'What's happening out there?'

What is it about & what does it need to enable?

It was set up with the aim to **create awareness on the relevance of consolidating insights.** This implies creating awareness on the necessity to make the continuous translation from what Barco can observe that happens around the organization's business (tech innovations, new user behaviors, societal, market and technology trends, etc) to what does it mean for the organization.

The campaign consists on the display of **different posters** in the same style (following the Barco internal communication guidelines). They illustrated **recent innovations from well known companies like Apple or Netflix and contained a thoughtful question**. They were displayed in

all the Channel One screens of Barco globally (located in the coffee corners and information areas of all Barco locations worldwide) and in the big screen in the cantine Barco Campus One in Kortrijk. Together with the digital displays, the posters were also printed and posted in different information points in the building.

The thoughtful questions were **accompanied by a call to action "Join the conversation on Yammer" and a QR code.** The code would redirect people who scanned it to the platform Yammer*
Yammer is a freemium business social network service used for private communication within organizations and part of the Microsoft Office 365 solutions.

The idea was to redirect people to a Yammer group called *'What's happening out there?'* where employees could reply to the questions and add or challenge them with their insights, facts, experiences, and even start new conversations on different topics. Questions like *"What are the challenges that Barco should be prepared for if this becomes true?"* or *"Is there something we can start reflecting on related on how this could impact our next innovations?"* were part of the triggers used in the conversations. **The purpose**

was to encourage reflection, learning and the interaction in the group.

The campaign set up was highly supported by the Internal Communications Specialist, Rune Buerman. It was announced in the BarcoZone website and was also part of the November newsletter, where my project and name were mentioned. The campaign was launched on the same day that the use of Yammer was announced internally in Barco. Therefore, the close collaboration with Rune favored a win-win situation. However, even if the curiosity of people helped in the number of registrations in Yammer during the first day, the creation of more than 40 groups overshadowed the campaign. Even Guy Van Wijmeersch created three groups on its own, which could have created a blurring effect.

Why the internal campaign?

Immediateness
After the response received from the approached teams with which I wanted to do the Scenario Prototyping Workshop, I learned that the progress of my project was too much dependent on their response. And getting them to do something completely different, out of their planned operational activities, was going to be very hard. Therefore, the idea of launching an internal campaign, that could depend mostly on my own work and speed, sounded very interesting. In two days the campaign was set up, approved and covered by the Internal Communications Specialist.

See reactions
I was curious to see and analyze the reactions of other employees, and I had a special interest in mapping the different positions of the people who would be interacting in the group. Potentially it could be used to find other people/teams eager to approach things from a different perspective, who probably were not in my radar from the beginning.

Validation of hypotheses
The campaign was set up as an experiment and therefore some hypotheses were formulated:
"The majority of people interacting in the campaign will be strategic marketers and product managers"
"The internal campaign will create awareness on the importance of looking at the business environment and interpreting what it could mean for the organization"
"The questions will trigger employees to think about the impact of those innovations and trends on Barco's businesses"
"Participants will start considering that asking and answering these questions is a relevant part of their team activities"

The hypotheses were validated with a questionnaire (See appendix D) distributed to the group members. It consisted of five questions with answers distributed in a five scale points and a concluding comment box to give feedback or recommend other means to achieve the same result. The results were evaluated and are summarized in Chapter 6. (Section: Internal campaign validation)

Prepare the ground for the validation of the model
The campaign could also be used to find people with whom to validate the model. People interested in understanding and interpreting what the surrounding innovations and trends could mean for Barco. These people could be one step closer to understand better the relevance of the exercise.

Manageable experiment from the distance
Because of the reorganization that the corporate is suffering, working from TU Delft was suggested by my chair and mentor. However, since the campaign could be easily monitored and updated from the distance, it was the perfect action to carry out during my stay in Delft. At the same time, my project was gaining some presence without me being affected by the situation.

Potential
The conversations initiated in Yammer around the internal campaign had the potential to highlight trending topics that were interesting for the organization. This way, these more popular topics could be upgraded to TexTalks, current conversation within Barco where specific topics are discussed. The next level of these talks should involve external experts. People who could challenge the internal perspective of Barco like customers, end users, suppliers, universities, consultants and partners who according to Thom (2010) understand customer insights, external trends and developments.

Figure 4.1 & 4.2: Material for the internal campaign 'What's happening out there?'. More examples in Appendix C

Theoretical framework
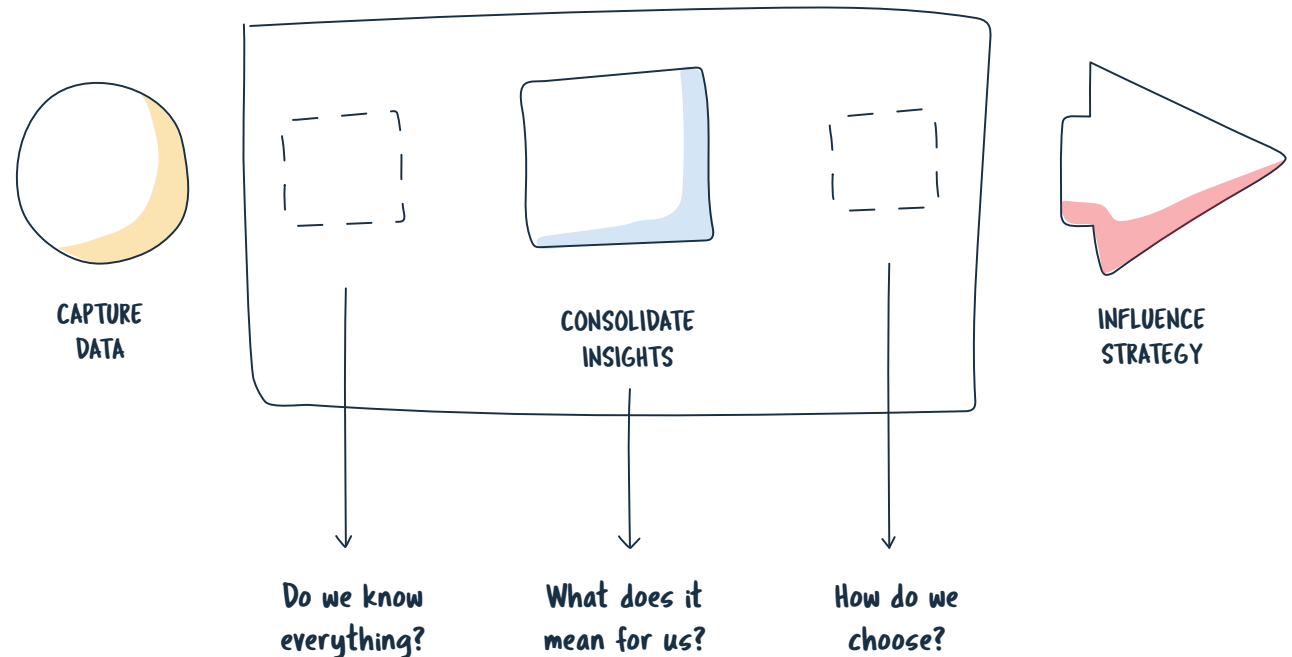
What is it about & what does it need to enable?

The framework is derived from the opportunity space mentioned for the first time in section 2.1 The opportunity, which was further explained in section 3.2 Solution space. The framework is focused on the Consolidate Insights phase (as the Scenario Prototyping Workshop was).

Thanks to the learnings gained after trying to co-create the Scenario Prototyping workshop, the opportunity was reframed again as in Figure 4.3, and it became the origin of the framework.

Two important **intermediate phases** were discovered:

1. The necessity to make sure that the research done was complete and rich enough. Since it will constitute the solid basis on which decisions about next innovations or strategic directions would be grounded.

2. The necessity to make a conscious and documented choice with a big emphasis on its communication.

Figure 4.3: (2nd time) Reframed opportunity

CAPTURE DATA

CONSOLIDATE INSIGHTS

INFLUENCE STRATEGY

Do we know everything?

What does it mean for us?

How do we choose?

This constituted the skeleton of the framework and was visualized as a canvas in Figure 4.4. The structure of this model was inspired by the the 'Framework for communicating rich experience information' of Sleeswijk Visser (2009).

As her framework, this one recognizes phases and tools that support those phases by different means. As she mentions in her work, a framework is a way to organize and then communicate the theoretical construct behind a process or activity. In her words, "creating a framework for a theory is the broad mental configuration of a given phenomenon" (Sleeswijk Visser, 2009).

At this point, the framework consisted of three phases, defined as **Knowing, Meaning and Choosing.** Each of them starts with an overarching question followed by a set of tools or exercises, which at this point were not defined yet. In the middle, between the main questions and the tools, there would be "elements" which will trigger the use of the tools. These would support teams in **making sure they know everything they consider relevant in their business environment, in understanding what does it mean for the organization (or division or business unit in Barco), and finally in communicating the options and making strategic choices.**

KNOWING	MEANING	CHOOSING
Do we know everything?	What does it mean for us?	How do we choose?
Mapping tools	Reflecting tools	Evaluating tools
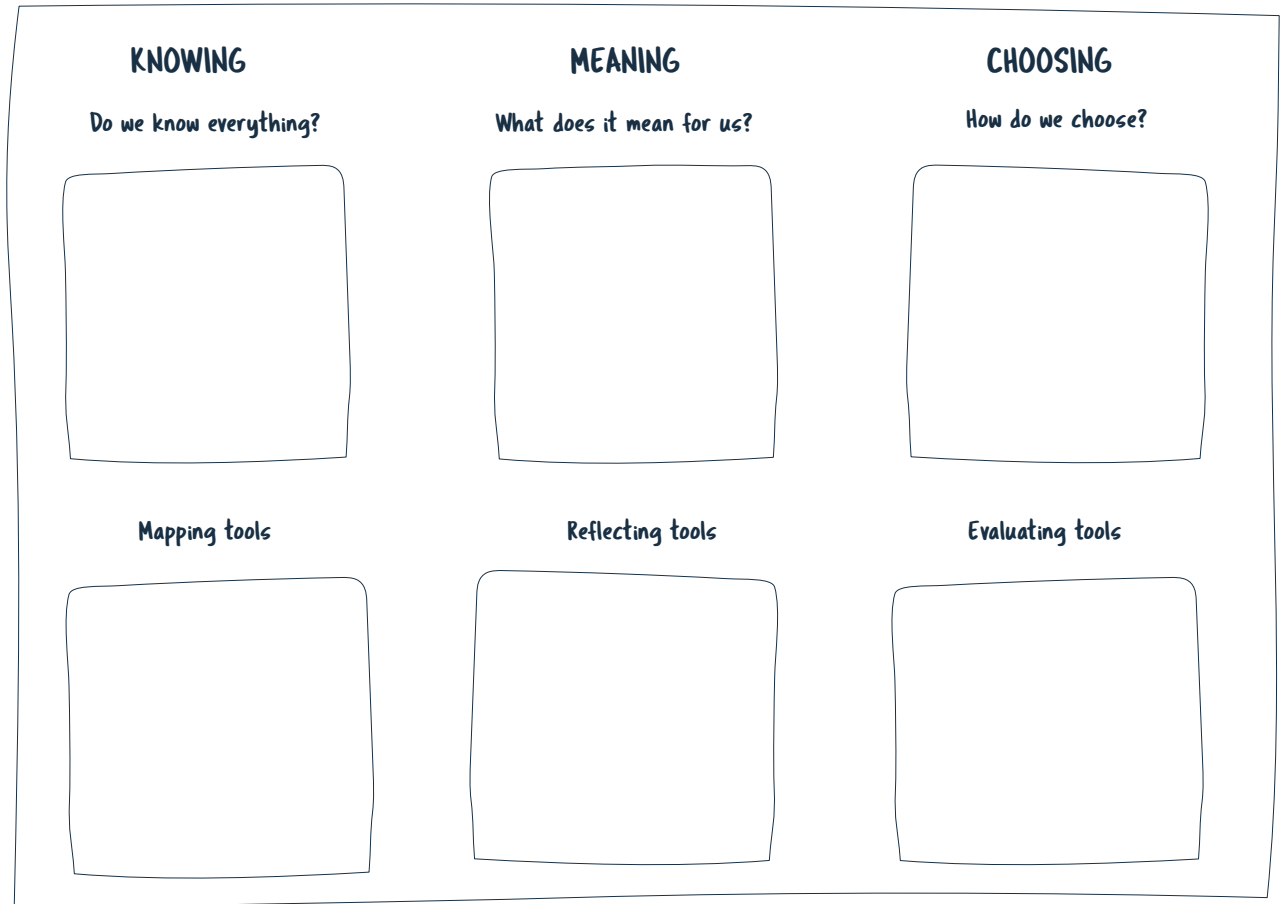
Figure 4.4: The framework as a blank canvas

Insights to define the framework

The framework at this point mainly consisted of the 'skeleton' and the theory behind it. **To define the framework further,** what would be its role and complete its whole body, **three technology corporates where approached.** This constituted a first validation stage, an external validation. The internal validation would happen later with Barco teams, once the framework was defined in detail.

The meetings with them were focused on discussing the 'skeleton' of the framework, and they were based on showing them the template to trigger the discussion, supported by some small cards to inpire ideas around tools and exercises (See templates in Appendix F and F-2). The later, in the end, were almost not needed.

After getting a better understanding of what is the framework and what it isn't, who should be involved, which elements were missing, its nature and how and when to use it within an organization, the **implementation of the framework** became the next focus. To know how to best make the framework land in the organization, **two consultants were interviewed.**
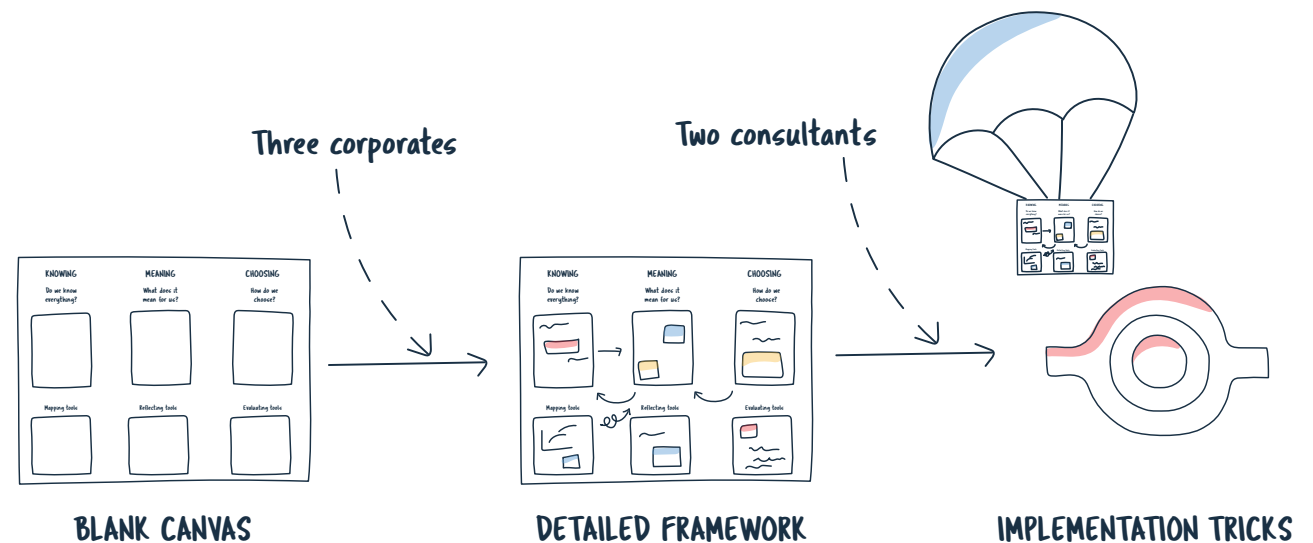
Figure 4.5: The process followed to define the framework

Why the model?

Applicability

The development of a model was chosen as one of the two preferred solutions because it had the potential to be applicable to other corporates that are facing the same 'paralysis'. In these times big organizations see themselves forced to adapt to the current innovation pace and some struggle or 'paralyze' in the attempt. The model aims to serve as a guideline to teams in big organizations that are in charge of bringing innovative proposals for evaluation meetings. By following the guidelines, teams can elaborate proposals that are grounded in a holistic understanding of the environment of the business in which they try to innovate.

Take distance from the reorganization

The decision to focus on developing a theoretical model has been strengthened by the uncertain moments that the organization is going through.

After the reorganization announced in early November, some negative effects on the development of the project were expected. Studies suggest that organizational restructuring can have negative effects on employee levels of job security, organizational commitment, perceptions of time pressure, psychological well-being, and turnover intentions (Probst, 2003). According to de Jong et., al (2016), the majority of the studies showed negative changes over time, both during the restructuring and in the post-restructuring period, if there is downsizing but also if that is not the case. One of the explanations could be that "those employees who stay on at the organisation might have to do tasks they are not familiar with and they don't necessarily get the training. They need other competencies.". Therefore, choosing to develop a theoretical model was a great opportunity to stay away of those possible reactions within the firm, which would probably affect their willingness to collaborate on innovative and thinking-forward initiatives. After a reorganization is announced, employees tend to demonstrate how valuable they are in their position with long working hours, as Delphine Van Hoorebeke, a recruitment specialist in Barco, mentioned. The effects of the reorganization combined with the closure of the year and the strict focus on current sales and short-term budgeting does not help in the execution of the innovative approaches proposed within this project.

4.3
Framework insights

Interviewing corporates

Goal

The goal was to get feedback, input and a good understanding of the best practices of three technology corporates in relation to foresight activities and the concepts presented in this framework.

Some **initial questions** presented to the interviewees were:
To what extent are these phases that I recognize here happening in your organization?
Are these steps prescribed/ guided or are they spontaneous?
What triggers foresight activities in your organization? Do they follow any specific process? Are they structured? How often do they take place?

During the talks there were also **other questions** related to the elements of the framework and their role:
What should be the character of the elements in between the main question and the tools? (questions, inspiration, guidelines, checkboxes, ect)

What are the tools exactly? (Canvases, inspiring exercises, etc). Are the titles clear for you? why? Is there something you miss?
How do the elements interact? What is the role of the exercises? What triggers teams to use the exercises?
Who, according to you, should be involved in the phases and exercises of this framework?

The framework was used as a blank canvas during the interviews/talks. The purpose of bringing an almost empty canvas was:
1. Fill it in with as many new and fresh insights as possible
2. Facilitate that the interviewees could challenge the structure and the wording used.
To support the discussion, little cards with examples of tools/exercises that I had in mind at first sight were printed, to trigger the discussion and clarify what I meant with tools (Figure 4.6).

Format

Three talks with four people with an important role in innovation in technology corporates with offices located in The Netherlands were arranged:

Petra Hoeksema, Enterprise Design Thinking Leader at IBM
Petra is working hard to introduce a human-centred way of thinking and working in IBM and other organisations.

Eva Duvekot, Manager Innovation & New Business at Pon Equipment and Pon Power (PEPP)
Eva is the innovation manager of Area 52, the innovation hub of PEPP, as part of PON holding.

Luc van Wanroij, SPD graduating student at Pon Equipment and Pon Power (PEPP)
Luc is a graduate student working on an innovation framework for the group PEPP that is applicable to all the "operating companies" in that group.

Hanne Caspersen, Creative Director Trends Strategic Design at Philips
Hanne is part of the strategic design team working for Innovation & strategy where she has a role as trend-researcher for Philips Healthspaces solutions business.

Figure 4.6: Filled framework during the interview at IBM

KNOWING

Do we know everything?

USER RESEARCH
+
OBSERVE

MEANING

What does it mean for us?

WHAT DOES IT MEAN
FOR OUR END USER?

BRAINSTORM
WITH
IDEAS

MEANING → CREATE
VALUE

___ Communication ___
of choices

?e choose?

PRIORITIZING &
TAKING FIRST
STEPS

CALL FOR
ACTION!
START MAKING THINGS

REFLECTING IS
THE COMBINATION
OF THESE TWO

Mapping tools

→ USER
INTERVIEWS
→ SHADOWING
→ EMPATHY CREATION
(USER)

Reflecting tools

1. HILLS STATEMENTS
2. NEEDS STATEMENTS
3. THE VALUE PROPOSITION
CANVAS

Evaluating tools

1. EXPERIENCE
BASED
ROADMAP.

ANALYSIS -
PARALYSIS!!
missing the
implement. please!

Insights

After 4,5 hours of transcribed talks, a lot of insights and feedback on the framework were synthesized and clustered in **7 topics**. To keep the richness of the insights the quotes were added to them, which made the texts long. At the end of every topic, a short list of the main takeaways can be found.

*The insights also include some comments that were noted down during the interview with one of the consultants, Jurgen Tanghe, Service Designer at Studio Dott in Antwerp (Barco is a client of Studio Dott).

1. The framework

-The framework has the goal to change the mindset and the way of thinking in the organization. *"It is a framework because the focus should be on the way of thinking, on a different mindset. This framework (IBM) is giving you questions that you need to answer as a team. This is your framework for thinking, these are the key elements that you need to have, and you have your principles that you need to adopt. Because if you can't adopt these principles then this is not going to work. We call it artifacts, same as exercises or tools, is the same. Is all mindset change"* says Petra Hoeksema. A change in mindset that implies making people think first about for who is the solution designed for and how are the solutions gonna be used, rather than just justifying that it

can be made. Which the usual technology-driven innovation that tech corporates excel; according to Hanne Caspersen *"The good think about your diagram is that if you are an engineer you like to think about making something, but you didn't think about who is going to use it and how. It is possible to make it so you would like to make it, and this is the big mindset change probably that the company might need"*. It is a new mindset thanks to which innovations start somewhere than where they are starting now.

-The way the framework is used is definitely not linear according to PEPP and Hoeksema, *"the phases don't go necessarily after each other"*, but

"If you are an engineer you like to think about making something, but you didn't think about who is going to use it and how [ ] and this is the big mindset change probably that the company might need"

on the other hand for Caspersen it looks more like a project, with gates and the traditional shape of the funnel. For PEPP and IBM there is room to go backward and check again. There are backdoors that you can take to not progress, for example when there is no alignment in the 'Meaning' phase, saying 'no' is also a possibility. For them it is also important to highlight that there is no specific starting point, but that teams can step in any of the three phases. However, for Caspersen, the possibility to step in at any phase is not an option, since that would mean that teams did not do their work properly. In this case, the *"backward fixing"* is wrong, teams do not go backward because they did not do the

step before, but because (as it happens in Philips) they learned insights along the way and they reframed their hypotheses, restarting the process again.

-The framework enables continuous iteration and validation according to PEPP, it is an exercise that goes on forever, as part of your operations, at least on a yearly basis, but for that it needs to be prioritized. *"It took us two years until our CEO understood that we needed to do this in a structured way. I think it needs a lot of time, I think only delivering a framework, this is gonna be relevant the moment it is prioritized in the agenda"* says Eva Duvekot. For Hoeksema, the choosing phase, for example, is something that never stops, because there are questions like *"whose problem are you solving?"*, *"which insights do you have?"* and *"which value can we create there?"* that your teams have to keep asking themselves and which answers should be validated by them. Because when you have put a solution in the world, its context keeps changing continuously.

-PEPP sees the framework as an overarching process that does not necessarily happen in every innovation but is strategically crucial, since *"it is clear the importance of knowing what you wanna know, (not everything), giving it a meaning and choosing where your strategy is going"*.

"This is gonna be relevant the moment it is prioritized in the agenda"

Main takeaways
- A framework that facilitates a change in mindset, starting innovations in a more human-centered way.
- It is not about guidelines or templates, because that does not trigger thinking, and therefore that does not make any change.
- The way the framework is used differs per interviewee.
  - The validation component is clear in the framework, as well as its iterative character.
- Prioritization is needed.
- An overarching process that does not necessarily happen in every innovation but more as a basis for the strategic thinking

2. The participants

-Teams who use this framework and want to answer its triggering questions by being supported by exercises and tools should be clearly multidisciplinary.

-The teams should be shaped by experts of different disciplines and leveled out. This would ensure the richness and the diversity of insights. The internal people involved should come from different disciplines: strategist and, business people, developers, marketers and implementors. When contacting the external people to be involved, experts, partners, customers, end users

and even temporarily hired experts (who would bring knowledge that is not present in-house) should be considered.

-Ownership in the process is needed and team dynamics have to be addressed as the first key step in the framework. It is needed to build a lot of trust to ensure that participants feel free to express themselves, as well as facilitating alignment which is key in the framework. As a conclusion, the fact that people are involved, engaged and aligned is even more relevant than the outcome itself.

Main takeaways
- Multidisciplinary teams
- Involvement of external experts, partners and end users
- Ownership of the process is crucial
- Team dynamics and responsibilities
- Ensure trust and freedom
- Alignment, engagement and involvement

Figure 4.7: Analyzing the interviews with IBM, PON and Philips

3. The user focus

Customer centricity is agreed as crucial in this framework. Therefore, with the aim to create empathy with the end users within the team, exercises like the 'Empathy map' contained in the IBM field guide (IBM Studios, 2018) and tools like the 'Empathy cards', suggested by Philips, are very relevant, especially at the beginning. Other exercises include ideation using 'User needs statements' or filling in the team's backlog (if the team is working agile) with 'User stories'.

A relevant and the first question teams should ask themselves, is *"who are we doing this for?"*, and it should be present in all phases of the framework. For example, IBM does it by introducing the figure of the *'Sponsor users'*, to bring a continuous collaboration with real users *"to increase your speed and close the gap between your assumptions and your user's reality"* (IBM Studios (2018).

This way of thinking could create other concepts inspired in the Enterprise Design Thinking Framework 'Hill Statements' which are "human-focused project goals". The sypecify the who, the what and the wow factor of every innovation (IBM Studios (2018). In this framework for Barco they could be named as: "human-focused strategic goals", since the focus of this last one is more at a strategic level and the one of IBM at the ideation level.

Users should therefore, be the main characters of the stories communicated within this framework (in the 'Meaning' and 'Choosing' phases) which should tell the whole user experience, inspired by the 'Playbacks' of IBM (IBM Studios (2018), but for me, it could be applicable to storytelling for scenarios).

Main takeaways
- Customer centricity is crucial
- Usage of tools and exercise to ensure that the end user experience is at the center of innovations
- "Who are we doing this for?"
- Continuous collaboration with end users and providing teams with the tools to observe them
- Users as the main characters of the storiescommunicated throughout the process

4. Knowing: Do we know everything?

According to IBM this phase is about what they call *"observing"* and well as for Jurgen Tanghe with the question *"What do we see?"*.
There are two questions that have to be answered from the beginning of this phase. The first one is *who is exactly 'we'?* (the organization, the division, the business unit, the team, etc). The second one is because everything is a lot in the question *"Do we know everything?"*, for both PEPP and Tanghe it should be rephrased as

something like *"Do we know enough?"*, and then what is 'enough' should be defined or answered by the team. To make it even more specific, Duvekot suggests to use tools that can cluster the insights in the areas of 'customers', 'business' and 'technology'.

The exercises in this phase should be done by employees (senior managers shouldnt be involved yet). They would do user research by going to several user locations where their solutions are being used and they will be provided with tools like 'Shadowing' and 'User interviews'.

"Involve users to increase your speed and close the gap between your assumptions and your user's reality"

5. Meaning: What does it mean for us?

Trends, insights, user experiences and new business models are objects of study in this phase, and teams should create hypotheses with them. More concretely, experiences can be represented as *"Experience flows"* in words of Caspersen and the team can analyze where the experience is broken and where is satisfying for the end user. Also trends should be made more concrete by translating them to *"understandable and contextual ideas"* as Hanne Caspersen clarifies. Which already helps teams to have an idea of what could they do with them.

Looking at another category in a "lateral thinking" exercise is also recommended by Caspersen to facilitate seeing other opportunities and get inspiration.

Main takeaways
- Teams observe, what do they see?
- Do we know enough about the context?
- "Who is 'we'?"
- Phase executed by employees
- Tools to support them in observing and approaching end users
- Trends, insights, user experiences and new business models are objects of study in this phase, and teams should create hypotheses with them

For IBM the phase 'Meaning' is indeed a phase to reflect, a phase to find opportunities. It is about creating value for both, the organization and the end users: *"What is the meaning of what we see for us on the technology level, for our customers and for the company?"* saya Eva Duvekot, again focusing on the areas of 'customers', 'business' and 'technology', like in 'Knowing'. It is very relevant to define precisely again who is 'us' and who is the end user.

What is the meaning of what we see for us on the technology level, for our customers and for the company?"

The phase 'Meaning' includes other questions like: *"What can we deliver as a company?", "What does our user want?", "Where do we have a match?", "What could that mean for us and for our customers?", "Do we have the right to play here?, and to win?", "Is this a fit for the brand?", "What do we need to make it happen?"* (people, resources, skills, facilities, partners, logistics, business models..).

Managers will execute this phase according to both, Jurgen Tanghe and PEPP. However, according to Jurgen, senior management should be already involved in these conversations that take place in the 'Meaning' and of course later in 'Choosing', where they are expected to make decisions and choose from the strategic options. On the contrary, Eva Duvekot suggests to only involve senior management in the latest.

For Hoeksema, Tanghe and Caspersen, ideation has an important role in this phase. According to Tanghe, brainstorming with ideas can help to clarify what does it mean for us what we see happening around the organization. For Caspersen, ideation based on trends facilitates the translation from 'Knowing' to 'Meaning', ideation that can be triggered by questions like *"What are the opportunities that the trends give us?" "What will customers desire because of this trends?"*. The trends and those ideas can be later used to project the experience in the future (which was analyzed in the previous phase 'Knowing'), according to Caspersen, "the future experience you want to create".

Some tools or exercises relevant to consider here are those that use 'User needs statements' (IBM Studios, 2018). But also the 'Value proposition canvas' suggested by Caspersen (considering the emotional benefit, the rational benefit, how do you want to be different and how does it fit the brand), the 'Future user canvas' and also scenarios and storytelling, all suggested by Jurgen. In this phase IBM would create the Hill Statements, which can be considered as 'stories' (for whom, what, and the 'wow' factor).

As mentioned at the beginning, in this phase, there exists the possibility to say "no", for example, *"if there is no alignment within the team"*, in

words of Hoeksema. Or in the case some ideas or scenarios do not fit with the strategy of the organization and do not want to be considered, there could be placed in *"a sort of corner, where people can put down the post its where they write why it is a horrible idea"* adds Luc Van Wanroij.

Main takeaways
- It is a phase to reflect, to find opportunities
- Creation of value for both, the organization and the end users
- Managers + (Senior management) execute this phase
- Ideation is relevant in this phase because it helps to clarify, to make the translation and to bring the vision closer to reality
- Scenarios and storytelling
In this phase there exists the possibility to say 'no'

6. Choosing: How do we choose?

Choosing according to IBM's perspective is mainly about prioritizing, to facilitate taking the next steps. For PEPP, communicating is a crucial element in the phase 'Choosing', PEPP and Jurgen Tanghe see a big value in storytelling and teams should pay a lot of attention to it. According to Luc, when communicating the options to choose from in this phase, he suggests to always include all the story behind, the outcomes of the phases 'Knowing' and 'Meaning'. Caspersen adds that the team should ask themselves questions like: *"How much will it cost us to make a reality this future experience?", "What does it take?", "What is its potential?", "How desirable is it?".* Hanne suggested using CAPS method as a way to assess it (capabilities, assets and positions). As previously mentioned, this phase involves senior management to make choices from the strategic options presented. Among others, some exercises suggested are the 'Prioritization grid' and the 'Experience based roadmap'.

Main takeaways
- Prioritizing and taking the next step
- Communication and storytelling
- Include all the steps done before presenting the options, shaping a story
- Senior management is involved

7. The structure of the framework

It was very interesting to get feedback on how these different corporates would use the framework. For some of them, it was definitely linear, while for others it was circular and you could step in in any of its phases. These insights gave room for suggesting different ways for approaching the framework. In addition, Luc Van Wanroij highlighted the relevance of the intermediate phases in between the main phases as crucial parts of the framework (Figure 4.8). This inspired the two transition phases that will be explained in the following chapter.

Figure 4.8: Luc's visual on the importance of the intermediate phases of the framework
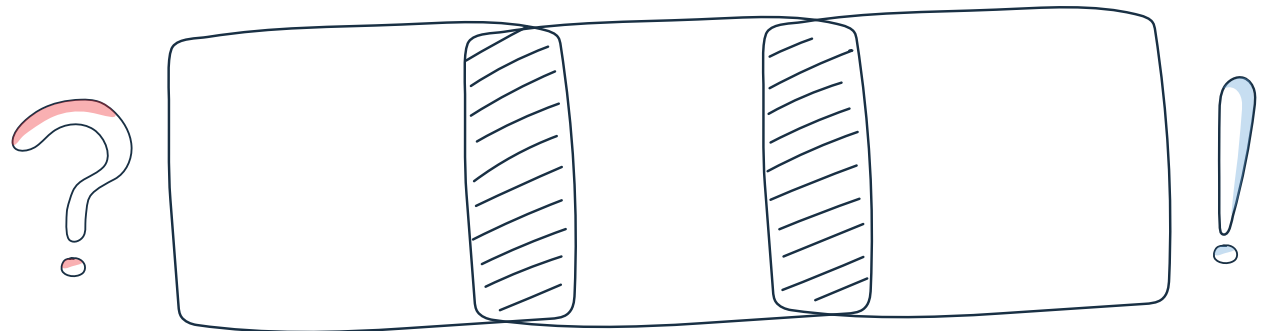
Interviewing consultants

Goal

The goal was to get insights and recommendations from the practices of two design consultants. I decided to approach consultants I knew because I saw a clear similarity of what consultants do for their clients with the structure of the framework. Consultants observe and map what they have seen in the context around the client's organization and what can have an impact on it. Then they make a translation of what they see to what they believe it could mean for the organization and they conclude their job proposing options from which the client has to make a choice.

Consultants in general, have to continuously deal with innovation management and many times they also want to introduce new ways of thinking in the organization. Consultants should also master stakeholder management, and their experiences and tips could be crucial for the implementation of this framework.

Format

Two talks with three people working as design consultants in design agencies. They continuously execute highly innovative projects in which they put the end user at the core of it.

Jürgen Tanghe, Service Designer at Studio Dott
Studio Dott has Barco as one of their clients and Jürgen has already been involved in previous projects for them

Stephanie Woudstra, Creative Brand Strategist at The Young
Stephanie worked as a freelance for Post NL
Leonie Levrouw, SPD intern at The Young
Leonie has done a previous project for Barco in a topic related to HR

Insights

-For a good landing of the framework in the organization, participants should see the bigger goal and their contribution to the organization strategy when working under its principles.

-Consultants suggest to work on this framework on a yearly basis but with constant preparation for it. Probably a good way to ensure that it is not forgotten is by splitting it into tasks throughout the year with some targets in between.

-Measuring employees in relation to this framework is crucial, for example by establishing KPIs, indicators or by setting department or team targets. The consultants said that if there are targets, employees will consider it more relevant and of course as part of their job, and not as an extra exercise. It is important to consider measuring employees on doing this in this new way, and not only on the output, at least at the starting, to facilitate a learning experience without fear. This is very in line with the insights of the interviews of corporates in which according to Luc van Wanroij *"the process is sometimes more important than the outcome. So the fact that people feel involved is way more important than what is actually written there"* (referring to the final choice in the last phase).

"the process is sometimes more important than the outcome. So the fact that people feel involved is way more important that was is actually written there"

Top Down

-Responsible for measuring the activity that happens under this framework, someone should be the "guardian" of the framework. Part of the job of this person will be to ensure that research data is ready before the teams start the first phase. He/she will put together and consolidate all the results by ensuring they have the right shape that allows them to be shared within the organization. This "project leader", in words of Stephanie Woudstra, is someone accountable for this task, knows everything about the framework in detail and ensures and guards the quality of the results obtained along the process.

-Together with the figure of the "project leader" or "guardian" there should be someone who is the "ambassador" of the framework. This person is very important and respected in the company, people follow him or her and when he/she goes somewhere, other managers find highly relevant to assist as well. This person would spend some time in activating and incorporating this new mindset in the organization as the first phase of its implementation but does not need to follow

it in detail, that is the task of the "guardian".

-Something that would also boost the implementation of the framework and will show that is a priority for the organization is to let managers see the involvement of the CEO. This way, they will realize that there is room for this new way of thinking and that the top management, to which they have to report, is rowing in the same direction.

-Tanghe also recommends start challenging top management with thoughtful questions, to start the change in mindset.

Bottom-up

-Tanghe suggests to let managers experience this framework for the first time in a fast pace exercise, like a "pressure cooker".

-Another trick for a more formal implementation is to show managers who will be involved, how do this framework and this way of thinking fit within their current processes so that they do not see it as something disconnected. That means finding the link to the SMP exercise, which currently does not have formal guidelines or an agreed format.

-Once the framework is implemented, Tanghe recommends that an interdisciplinary team should dedicate part of their job to work on this.

4.4
Final deliverables

To define the final deliverable(s) that would be handed in to Barco, a workshop with Guy Van Wijmeersch was set up (See templates in Appendix G). The workshop was structured as follows:
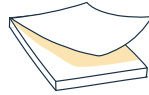
1. Clearly define what was being solved with the final solution
2. Brainstorm about different ways to achieve the same goal
3. Evaluate the different possibilities given the circumstances and the short time available

Figure 4.9 shows the templates that were used to guide the workshop. During the Greenlight meeting, those possibilities were analyzed and the final deliverables were chosen.

The final deliverables agreed were:

1. A test workshop, following the advice given by the consultants. The creation of a test workshop, run during half a day would serve as a pressure 'cooker exercise' to let product managers, strategic marketers and leaders experience the framework and give feedback. "Which of the supportive exercises and tools works best for Barco?" "Does the structure make sense?" "Who should be in charge of managing these exercises than run under the thinking of this framework?". These were some of the questions that were expected to get answered by running the test workshop. The workshop had to be detailed and in parallel, it should be set up. Again, the biggest challenge of creating a workshop was to make it happen. To get the right people and their time, to create the necessary initial content/input to start the workshop, and to find a suitable date before the deadline. In the following chapter 5. Deliver, a subsection dedicated to the test workshop elaborates on how these challenges were tackled.

2. An animation that could be used by Guy Van Wijmeersch after the project was finished. It should serve as a pitch to communicate the reasons WHY this project was set up and the urgency to bring a change in mindset to Barco. It should create the "Aha" moment by showing the barriers or challenges discovered, thanks to which employees at Barco would realize how relevant was to start a change. It should include WHAT the designed framework on foresight had to offer to help Barco to overcome those challenges. Finally, it should conclude with HOW would it help Barco to begin with this change in mindset, how the framework is structured and more detail about how does it work and its elements.

In order to design the test workshop and the animation, the **framework had to be structured and defined in detail**, which is also included in chapter 5. Deliver.

Figure 4.9: Analyzing the results of the workshop with Guy

Deliverables assessment

In the final chapter, the final designs will be assessed in **desirability**, **feasibility** and **viability** as indicated in Chapter 1.

At the start of the project 3 other requisites were defined and therefore, the final design should also be evaluated with these criteria:

The solution should be (1) **easy to implement** within current Barco operations and shouldn't feel like a burden or as 'another change'.

It should serve as (2) **strategic guidance for the organization**, to support in projecting the company towards the future.

Finally, the solution should fit in a (3) **dynamic tool** in which the content could be updated, iterated and discarded if necessary (as quickly as the demands on the technology that Barco operates with shifts) to facilitate validation and encourage a continuous learning attitude.

Together with that, in Chapter 1 it was also mentioned that the solution provided to Barco had the aim to bring strategic operational and human value, which will also be addressed in the final chapter.
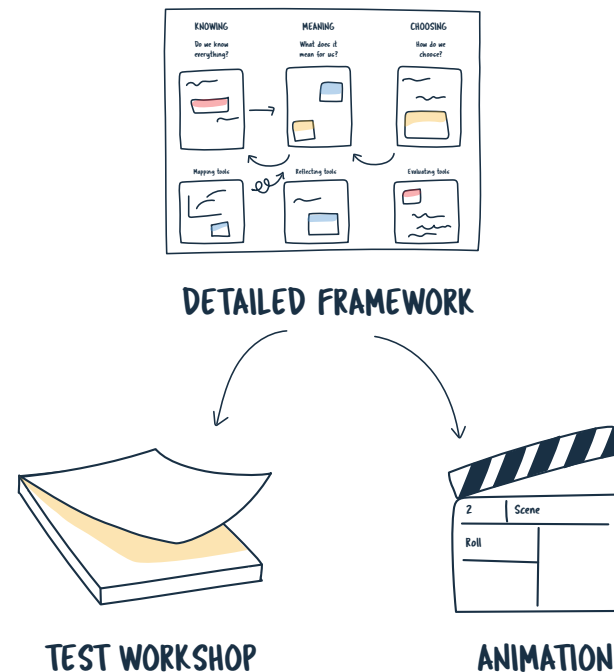
Figure 4.10: What was derived from the framework as a deliverable

"That would be the first thing I would say: If you are trying to do this bottom up and without the C-level endorsement, you will never succeed"

Hanne Caspersen, Creative Trends Director at Philips

5
Deliver

The chapter 'Deliver' contains the details of the framework, the test workshop organized to validate it and the animation created to communicate it. The validation of the framework is evaluated in Chapter 6: Conclusion.

In this chapter, the reader finds all the details about the framework, including its principles and the agents that should take part in it.

This is followed by a step by step guide to run the test workshop, which concludes with a reflection on the challenging task of having to play with different levels of concreteness when detailing the framework and guiding through the test workshop. The way the framework and the test workshop were presented officially in Barco is also reflected here.

The chapter finishes with details about how the animation was made.

5.1
Foresight framework

The framework was detailed regarding the principles on which it is grounded, the agents or participants that go through its exercises and its structure.

The name given to the framework was kept simple and concise: 'Foresight framework', since there is a need to bring the term *foresight* to Barco. In this way, people will directly link the framework to the discipline in which is grounded, something that will also increase its relevance and robustness.

Principles

"In these years of fast-paced innovation, driven by the changes in the expectations of end users and disruptive technologies booming every year, a new mindset focused on innovating by integrating all these variables is crucial. To support in that complex task, this 'human centered foresight framework' has been designed. It consists of a set of strategic questions that want to facilitate a change in mindset in how technology-driven corporates innovate. The framework includes a set of tools, principles, tricks and recommendations to support its practitioners."

A change in mindset

The purpose of this framework is to facilitate a change in mindset in Barco that brings a better way of starting innovation. An innovation that is initiated somewhere else than where it has traditionally happened in Barco, which was a combination of technology-push and internal expertise. This new way of innovating wants to first think about who will use the solutions proposed by Barco and how; what is the experience they will have while being in contact with it. And then think about how can Barco make that experience possible by combining knowledge in technology, businesses, user-centric innovations and trends.

Continuous validation

The framework reminds the agents who work on it to always highlight the assumptions, evaluate how crucial their validation is before continuing to the next phases, which means assessing their risk and priority to be tested. Experiments to test those assumptions have to be decided and set up along the exercises that are part of the framework when the assumptions are identified. Then, hypotheses should be defined and with these experiments they will be confirmed or, on the contrary, false.

Human-centered

As said, this framework aims to start innovations with a main and first focus on who are we creating a solution for and how that solution will be experienced by the end user, customer, partner, etc. Therefore, many of the tools presented in this framework aim to help in creating empathy with the user's aspirations and needs. User insights are considered as relevant as technology and business insights along the innovation process.

Space for innovation

One of the first steps when working under this framework is to make sure that a safe space for innovation is created. This means that the agents that take part in its exercises should feel free to speak and bring their expertise to the team. According to literature and studies, foresight activities in corporates have the potential to create ownership and commitment to the results obtained (Beeton et al., 2008).

Another benefit that foresight could have in Barco, based on what was learned from the internal analysis, is to facilitate the creation of a learning culture. Learning not only about what happens outside of the organization but also across silos in Barco. Being able to show interest in learning about others successes or failures in different business units or departments is highly relevant in foresight. With the aim of applying those learnings to new innovations in other business units.

Lastly, it was learned that Barco could improve their communication and information sharing by making it more structured but still using informal means. The framework has the potential to help in creating a common innovation language so that people in Barco talks about innovation in the same terms. This will facilitate communication and collaboration between business units, being this a benefit for the creation of the learning culture mentioned above.
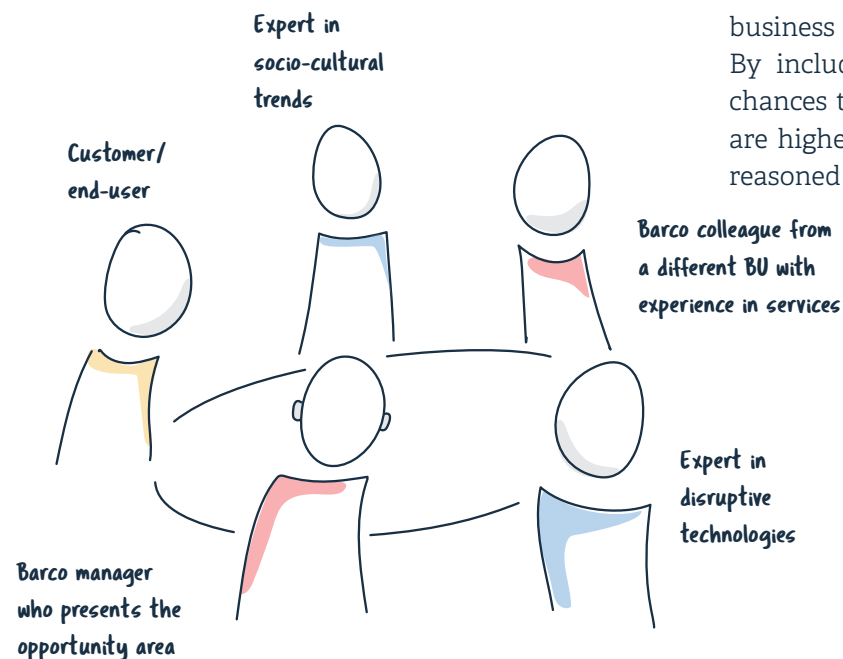
Agents

The exercises that take place under the thinking of this framework should be executed by **multidisciplinary teams** (Figure 5.1). These will engage internal people in the firm, from employees to senior managers, and counting also on external agents. The **internal agents** should include from strategy and business people to developers (R&D) and marketing and sales. The **external agents** should include external experts in a certain domain relevant for the exploration at hand, partners, customers, end users, and even outsourced external knowledge if it is needed.

The goal of engaging a multidisciplinary team is to facilitate a **having the bigger picture, a holistic understanding** of the context in which the business unit or the division wants to innovate. By including all this different knowledge, the chances to fill in the gaps in this understanding are higher. Which will result in more conscious, reasoned and meaningful innovations.

Figure 5.1: An example of the multidiscplinary team

Structure

Another key aspect to consider in this framework in relation to the agents involved is the creation of **alignment** between them. If there is no alignment along the exercises of this framework, there won't be consensus and therefore the chances of success decrease. For example, if there is no alignment when analyzing if one of the scenarios proposed should be considered by the firm, this one should be parked and investigated further on the side until the next analysis/results confirm it or on the contrary, definitely discard it. Only agreed scenarios should be continued because this ensures ownership and commitment to the results of the exercises.

As mentioned at the beginning of the section, the framework *"consists of a set of strategic questions that want to facilitate a change in mindset in how technology-driven corporates innovate. It includes a set of tools, principles, tricks and recommendations to support its practitioners."* The nature of these two elements is very different. While the strategic questions ask for more abstract thinking, the tools and tricks aim to help in translating those abstract concepts into more tangible and understandable ideas. Another example of abstract thinking is the creation of

scenarios and the questions that help in that task, but by using ideation exercises and user-centric tools, the trends that shape those scenarios can be easily brought to workable ideas. This interplay between concrete and abstract thinking is something that designers continuously exercise. Since thinking in more abstract terms usually means a struggle for engineers like the ones working at Barco, the framework has the aim is to support on this task. The following figure 5.2 represents that duality.
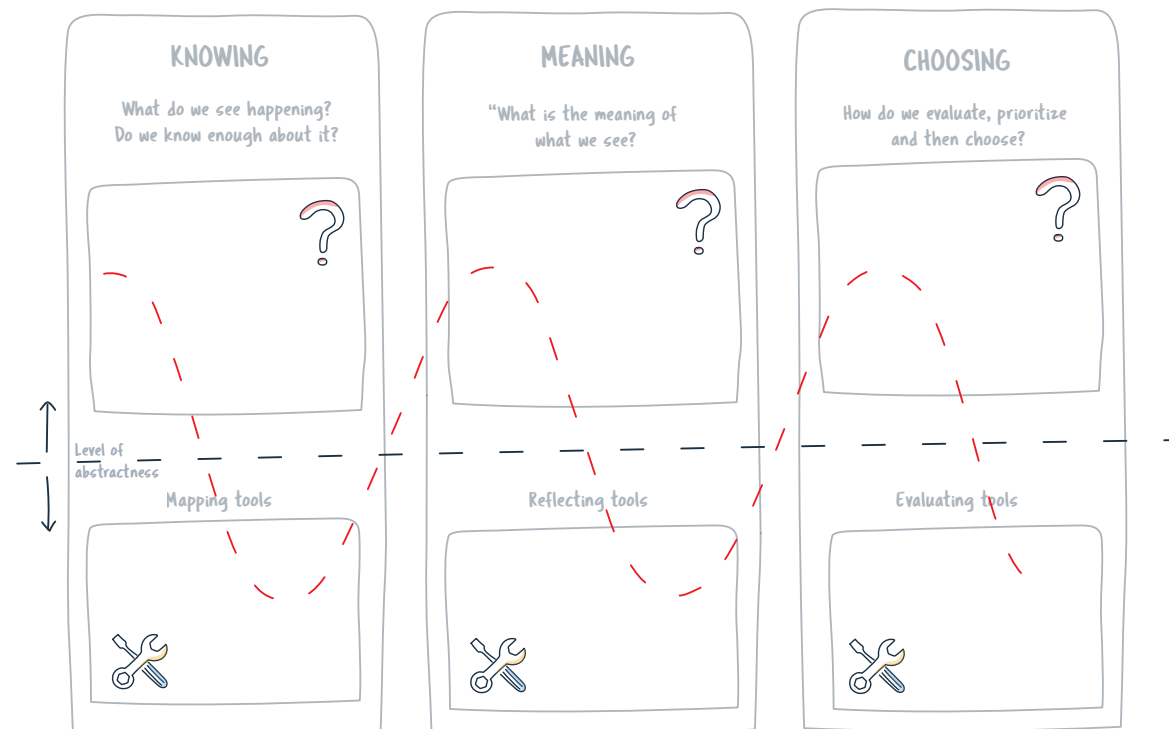
Figure 5.2: The two levels of abstractness in the framework

Continuous validation is one of the principles of the framework. As such, it has a presence in 4 moments along the three phases of the framework (Figure 5.3):

1. Validation starts from the very beginning during the setup since the team that goes through the exercises of the framework is multidisciplinary. As said, this helps to complete as much as possible the big picture by filling in the gaps in knowledge.

2. After the first phase Knowing, the team is able to make an assessment of the assumptions that were highlighted during the exercises and the knowledge that is missing. When asking themselves the question, do we know enough?" the team has to determine what is enough, and if that level is not reached further research should be set up, as well as, for example, recurring to other experts or the experiences of more end users.

3. After the second phase Meaning, the scenarios have been created. Validation has a role here when the team has highlighted the assumptions within the scenarios created and the drivers of change and trends that are more sensible of suffering changes. Those have to be followed up with experiments or simply further exploration and if changes in their direction happen, the scenarios should be reviewed and iterated.

4. Finally, at the end of the phase Choosing, decisions around the scenarios have been made. They have been prioritized and ideally plot in the different horizons of the strategic roadmaps that Barco should be working with. Some scenarios will address innovations closer in time, while others probably belong to horizon three. For all these scenarios, closer or further in time, experiments to test them can be designed. Probably for those belonging to horizon one, test could mean already creating surveys or even adding a certain feature to a solution currently in development. For the longer term scenarios, different types of experiments that aim to validate their assumptions can take place in the near future.

To conclude this section, **the way to approach the structure** of the framework is addressed. As mentioned in chapter 4. Develop, IBM, PEPP and Philips had a different opinion and way to look at the structure of the framework. While for PEPP could even be circular, for Philips was strictly linear and kind of 'stage gate' process. It is relevant to evaluate how Barco will define the best way for the firm to go through the different stages of the framework. This could happen once some test workshops have been run and feedback had been collected. Barco could even try to use the framework following the ideas of the tech corporates and they create their own way to approach it.
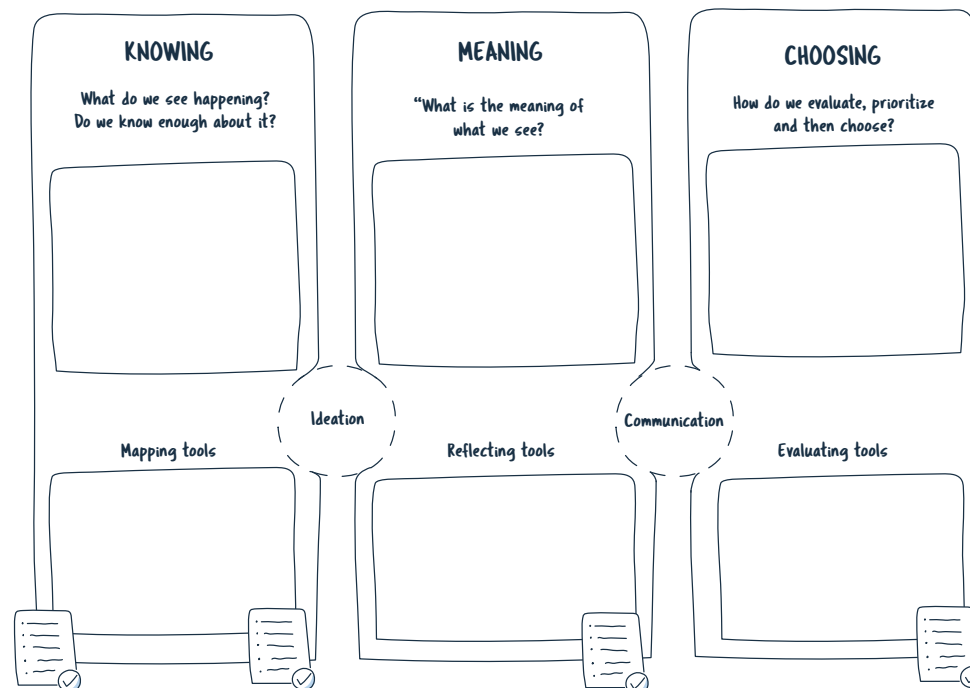
Figure 5.3: Validation moments along the framework

5.1
Test workshop

To define the test workshop two actions in parallel were carried out. One was to define how was the workshop going to look like, its structure, the exercises and the tools recommended to support along the exercises. The other one was around the setup: to get the right people and their time, to create the necessary initial content/input to start the workshop, and to find a suitable date before the deadline.

Workshop definition

Set up the workshop

- Create a free environment in which everyone feels free to speak (show rules of creative facilitation)
- Every contribution can be a surprise, don't underestimate the different fields of expertise. Any expertise and point of view is valuable and could mean discovering a blind spot or filling in some gaps. Tell agents that they have been asked to participate to complete a holistic and complex innovation context, in which some parts are more unknown than others and therefore all knowledge is relevant.
- Not necessarily set up team dynamics because

the team can vary along the way, but communicate the rules of the game (creative facilitation) for the coming workshop.
- The team can have new additions as the exercises evolve. Or some people might not be necessary throughout all the exercises of the framework. However, for now, and since it is only one test workshop, the people will be the same all the time.
- Present the topic or opportunity area in which the exercise will be focused.

In the following pages these icons will represent the strategic questions (left), the tools, tricks and recommendations (center) and the moments for validation (right).
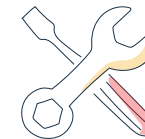
Knowing

Strategic questions

Four key steps happen in this phase, in which employees and middle managers are involved.

Do we know enough?
The first is to **map the insights and trends in the three lenses of technology, business and customers**. After having mapped the insights and trends, teams should ask themselves the question *"what do we see happening?" "How will the world look like in...?"* Then teams have to evaluate if *"what we know is enough"*. ***"What are assumptions and which are still blind spots that will need validation or further research?"*** *"On what area Barco is not interested in knowing more about and why?"* This will help to set some boundaries and start framing the playing field.

Who is "we"?
Define what is the mission of Barco for the specific topic at hand:

"Barco's mission is to enable bright outcomes by transforming content into insight and emotion. In order to achieve that mission, we offer best-in-class, networked visualization solutions (hardware and software) and related services."

By taking the tagline of Barco (above), try to bring it closer to the goal of the workshop by **translating it to more concrete and workable concepts.** This will help to determine the 'we' of this workshop, will bring inspiration and will define the mission that the agents have around the topic.

Who are we doing this for?
This is the first attempt to **define who is the end user, customer, partner, etc**. Try to create a quick map of who would be key people that will be affected by the next innovation of Barco on the topic at hand. This will facilitate that the end user or customer is considered from the beginning, along with its aspirations and needs. Some tools mentioned later will be proposed to facilitate the creation of empathy between the team and the potential end users.

Ideation
The fourth step is a **transition between the phase knowing and meaning**. It is an ideation exercise. By asking the question *"What do these trends mean for Barco, for our end users and for the possibilities that technology enables?"* followed for example by *"What are the opportunities that the trends give us?"* and *"What will customers desire because of this trends?"*. This is a **first brainstorming about what quickly pops-up in mind**. It aims to translate those trends into understandable and contextual ideas, kind of hypotheses, which are more workable for the agents participating in the workshop. The ideas of this brainstorming can be firstly classified in the three lenses of business, technology and people. Then there is a second clustering, this time to **find themes or topics among these ideas**. The themes should be given a characteristic name, since this will facilitate recalling each of them. If one idea fits in more than one theme the post-it can be duplicated. Following what learned from literature, a maximum of four themes is recommended.

Tools, tricks and recommendations that support in this phase

User-centric tools

Since one of the weaknesses of technology-push companies is the understanding and integration of user insights and their experiences in innovation processes, these user-centric tools are proposed:
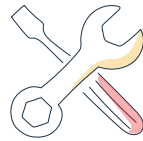
Tools for user research. These tools should be used prior to the exercise. They facilitate that the agents participating in the exercises go to user locations where Barco products are being used. Letting them experience this at least once can bring numerous benefits according to Petra Hoeksema (IBM) and Hanne Caspersen (Philips), who propose the following tools:
- Shadowing (following and observing users)
- User interviews

Tools to enhance empathy with users and to create a deeper understanding of the user experience. For Petra Hoeksema and Hanne Caspersen, creating empathy between the agents participating in these exercises and the end user is a priority. According to Sleeswijk (2009) "personification of the information" helps to achieve empathy. Thanks to personification, the information shows individual people to whom designers (or whoever thinking about the end user) can easily relate. Photos, names and personalized transcripts or quotes that relate to someone specific are means to personify users

information. Having enough time to empathize with user stories is also very important. Since the time that high managers have available for these exercises can be very limited, it is also possible to previously use sensitizing materials. In this way, the agents that will be immersed in the exercises can start the sensitizing process that will enhance their empathy beforehand.
- Empathy cards
- Empathy map (also from Board of Innovation)
- User stories and user needs statements.
- Experience flows (Where is the user experience broken? where is it good?)
- As-Is scenario map (IBM Studios, 2018)
- Personas

Tools for ideation. These facilitate the understanding of user needs and their current experiences:
- User needs statements
- User stories

Trends and business innovation resources

The other two aspects that should gain importance in Barco are the ones focused on business innovation trends and market trends. Therefore, tools to be inspired by innovative business models and emerging consumer behavior trends are proposed (*these should be consulted prior to the exercises or brought as inspiring material):

- 55+ Pattern cards (Business Models)
- Business Model Kit by Board of Innovation
- Revenue Models cards (B2B) by Board of Innovation
- JWT 100 (2019)
- Smarter with Gartner by Gartner
- Trendwatching.com
- Popscience. They published a list with the coolest innovations of 2018 which definitely define a path towards the future
- Fjord Trends 2019
- Pictures of the future by Siemens
- IBM Research
- Mintel consumer trend report 2019
- Global Web Index report
- 2018 Emerging Tech Trends report by Future Today Institute
- Future Scan by Board of Innovation

Tools to understand better the progression of trends

From the Playbook for Strategic Foresight and Innovation.
- Janus Cones are a perfect tool to find patterns and relationships between trends and events. Starts in the left cone by filling it in with past events and finding the time span between big changes. It helps to identify blind spots and who would you need to complete that knowledge (Carleton, Cockayne and Tahvanainen, 2013).
- Generational Arcs are also a good tool to evaluate

expected market changes and the evolution of demographics. It also helps in learning about beliefs, behaviors, and values about groups that define them today and in the future (Carleton, Cockayne and Tahvanainen, 2013).
- Progression curves represent the evolution of changes in terms of social, technological and other filters. The help to understand how the evolution of events has led to their current state (Carleton, Cockayne and Tahvanainen, 2013).

Other tools to map the context
- Context map by Playbook for Strategic Foresight and Innovation. A great tool to gain fast background on a particular topic and a good ice-breaker for a new team to start innovation discussions (Carleton, Cockayne and Tahvanainen, 2013).
- The Context Map Canvas by Design Better Business (Business Models Inc., 2016).
- The Context Map by The Corporate Startup (Viki et al., 2017).

The validation component in Knowing

The framework is designed in a way that constantly reminds the agents who work on it to identify the assumptions and evaluate how crucial their validation is to continue to the next phases. As such, this phase will also facilitate that teams identify the assumptions and blind spots in their current knowledge. The facilitator should remind participants to highlight the assumptions and to

suggest experiments or additional research that should be done in order to validate them.

The Assumptions mapper and the Experiment card by Board of Innovation can help in this task.

Figure 5.4: 'Knowing' phase of the workshop
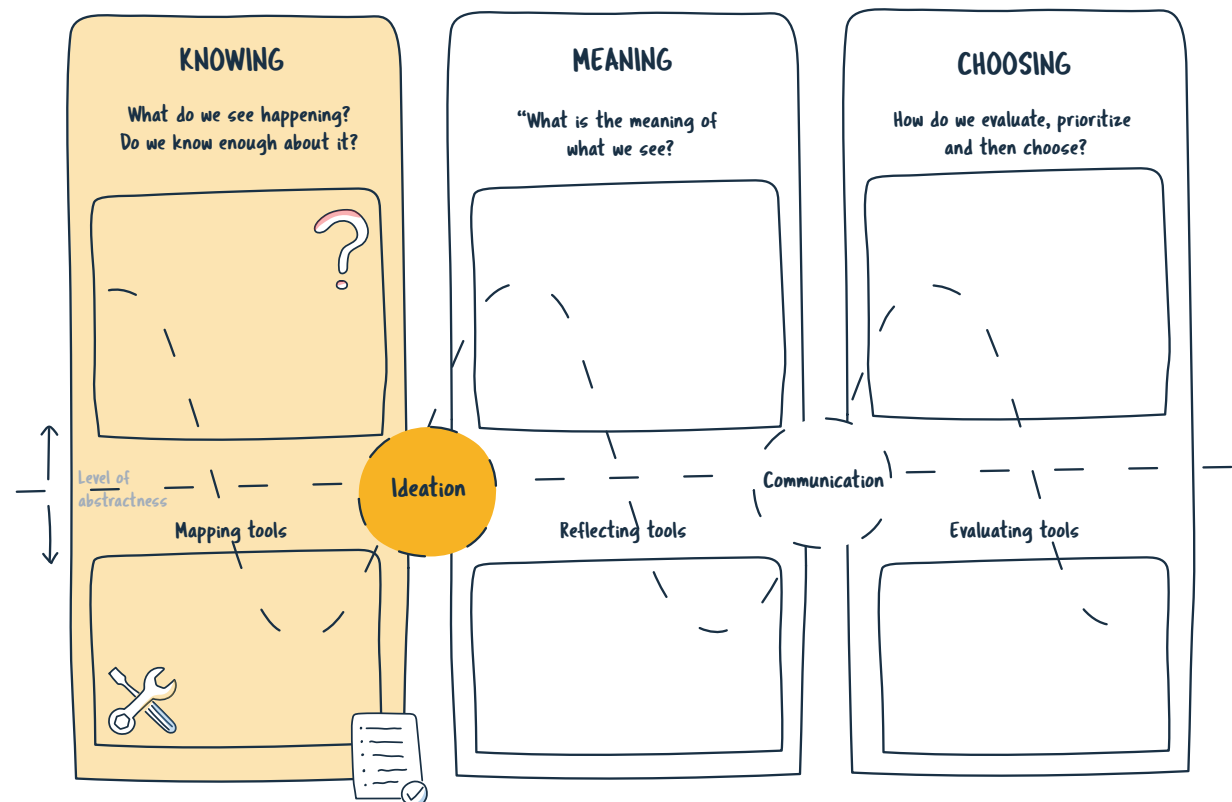
Meaning

Strategic questions

Three main steps happen in this phase, which involve senior management for the first time.

Shaping the scenarios

This phase starts with **consolidating the themes identified in the ideation exercise into scenarios.** For that, some questions will be asked and new tools will be suggested to support in facilitating their answering. Questions like:
- *Who is the end user or protagonist of this theme?*
- *What could we deliver as an organization?*
- *What does our end user/customer want?*
- *Where could we have a match?*
- *What would that mean for our customers and for us?*
- *What would give us the right to play there? and win?*
- *Would this be a fit for the brand?*
- *If disruptions or threats are identified, how could these be transformed into opportunities?*

*Option to say 'no'. If after having asked these questions there is no alignment on one of the themes, then the team should consider parking that one to be analyzed later. Or simply discard it if it is not a desirable option for the organization. These decisions should be always documented in case they have to be reviewed at a later stage.

Creating the story

Once all these questions have been considered, the **stories that represent each of the scenarios** can be created.

First determine who is the protagonist of the story (end user, integrator, customer…) and structure the story around their experience. The teams should be divided to create the different stories. In this way, specific people focus only on one theme, usually the one they feel more identified with or passionate about. A suggestion for the storytelling is to make a comparison of how was the experience before and how is Barco projecting it to the future. It is also powerful to tell as part of the story how have you ended up creating that scenario (like summarizing the knowing and ideating phases).

Communicating the scenarios

Scenarios are tools to effectively communicate strategic options to higher management. Because of that, they have to be accurate and critical, but they also have to be able to 'move' high managers' intentions. **The communication of the scenarios is a transition between the phases meaning and choosing.**

Especially in large organizations, the language used to communicate innovation is the "language of certainty" which includes facts, figures and projections where "even the risk is assessed in finite terms". But innovation is a lot about uncertainty and ambiguity, taking a big step in the long term and many times guided by feelings and intuition. Therefore it needs **a different language that can convince higher management** to support and fund innovations for markets that do not even exist yet (The Future Shapers, 2018).

According to the article published of The Future Shapers (2018), metaphors and stories "are highly effective in painting a compelling vision of the future you are aiming to build". Wilson (2014) for HBR.org also adds two other linguistic tools to describe innovations: hyperbole and revisionist rhetoric. The future shapers (2018) recommend to keep the language of innovation "simple and jargon-free", and be consistent on how you use it to have the greatest chance of success.

Tools, tricks and recommendations that support in this phase

Tools to project the current experience in the future

- To-Be scenario map by Design Thinking Field Guide by IBM Studios (IBM Studios, 2018)
- Experience-based roadmap (IBM Studios, 2018)
- Value Proposition canvas (consider the emotional and rational or functional benefit, and also how do you want to be different with this proposition and how does it fit the brand).
- Future User canvas by Playbook for Strategic Foresight and Innovation. It helps to create a future profile of the current user by comparing similar groups over time. Also used to identify user needs of a specific market segment in the future (Carleton, Cockayne and Tahvanainen, 2013).
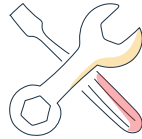
Tools to create stories

- Storytelling (think about your audience and the media that will be better to use) Who is the audience? How do you connect with their thoughts and feelings? How do you involve them? How can you best reach them? How can you use empathy and listening? How can you use feelings and emotions?
- Help yourself by creating a rough storyboard or storyline. The Design Thinking Field Guide created by IBM Studios (2018) contains some tips on how to create a storyboard. As Lawrence and

Clark (2018) suggest, around three main scenes should be able to tell the whole story. This is the set up they suggest:
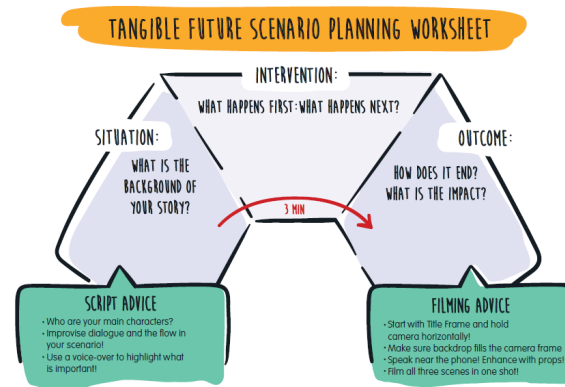
The Storytelling Canvas by Design Better Business (Business Models Inc., 2016) and The Pitching Canvas by Board of innovation can also serve as a guideline and be inspiring when creating the storyline.

Another suggestion is to include, as part of your story, how did you end up there. This implies including the most relevant insights of the phases knowing and meaning, that lead you to create that specific scenario. This will show the consistency of the story.

- Hill statements, used by the Enterprise Design thinking Framework (IBM Studios, 2018), can also serve as an inspiration to construct the structure of the storyline. According to their Enterprise Design Thinking Field Guide, to build a hill statement the team must first start defining the user (or group of users) they want to serve. Secondly, they have to specify "the outcome they want to enable the users to achieve". Lastly, the team has to define the key "market differentiator", which will make your solution worth their while. They call these elements as the Who, the What, and the Wow.

Tools to communicate the story

Choose a preferred mean for this communication, from role-play, to mock-ups, prototypes, videos, movies, powerpoint presentations or even real-life experiential scenarios.

- Lego Serious Play is recommended by Lawrence and Clark (2018) in their article on Tangible Future Scenarios. For them, the most powerful characteristics of communicating visually through prototyping and storytelling are: (1) the use of tangible materials and narratives bring specificity, and presents a holistic view and a more meaningful understanding of the world and its possibilities; (2) the creation activity itself, which "requires multiple pairs of hands",

as well as improvisation that supports an active creation process; and (3) the "unpolished nature of the final result", which invites to discussion and further iteration with the agents involved. Reflecting on their experience, Lawrence and Clark (2018) confirm that when teams make that big step from talking to improvising "they see how much more quickly improvisation can cut to the core where the traditional discussion might just circle the issues". The active creation process also facilitates that tacit knowledge and ideas, of which people may not even be aware, surface. It can be concluded that prototyping scenarios with Lego Serious Play deepens the reflection process and supports an effective dialogue between the agents participating.

- About video making, Lawrence and Clark (2018) recommend using improvisation "to actively generate and refine the ideas". Contrary to first detailing a script and then filming it, improvising while filming the different scenes helps to quickly identify assumptions and ambiguous ideas. In this way, rich discussions emerge about the scenarios and the possibility to create alignment about details appears. Otherwise, these details could remain uncovered and would appear somewhere later in the project. Because video making requires more than one person (e.g. one agent can narrate the story, another can move

the puppets/lego/mockups, and the third one is in charge of filming it) it favors having to pay continuous attention to the 'scene' and generating ideas and suggestions to iterate the scenario representation during the making.

The validation component in Meaning

This phase will also facilitate that teams look at the scenarios they are creating with a critical eye. If any of the scenarios are based on some

assumptions, these should be highlighted. Is the task of the facilitator to remind participants to have this critical attitude and indicate where there is an assumption. Teams should determine how and when to validate that assumption as well as how critical it is for the realization of the scenario. There should be a responsible person, the "project leader", as Stephanie Woudstra called it, who would be in charge of keeping track of the evolution of that validation.
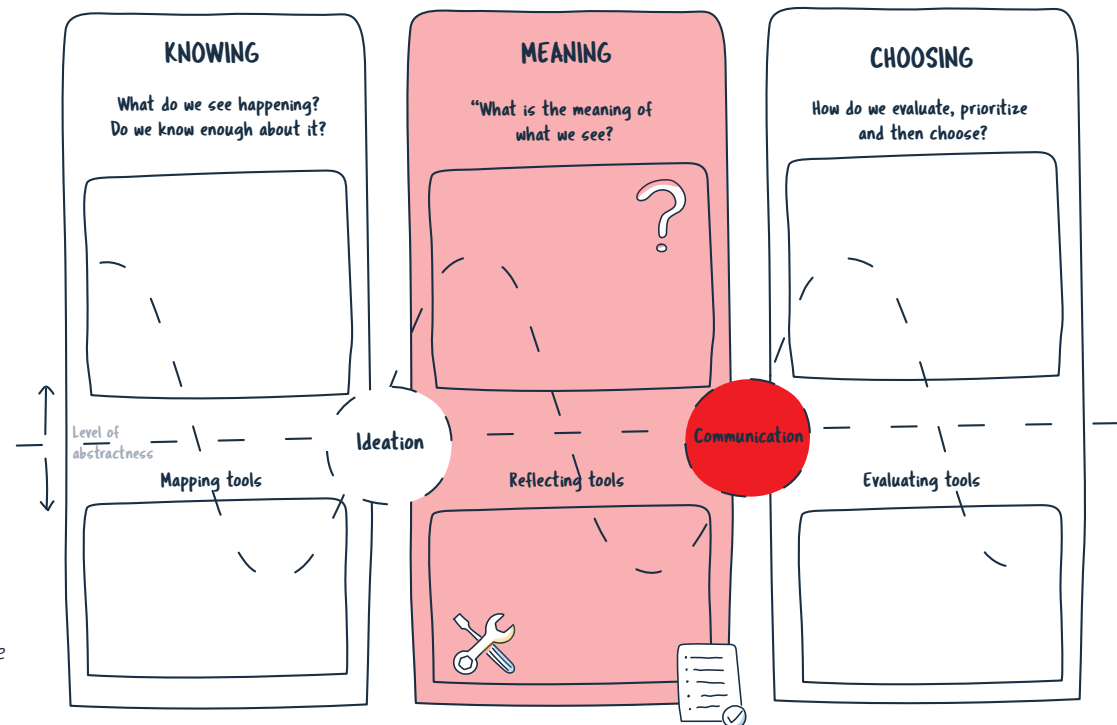
Figure 5.5:
'Meaning'
phase of the
workshop

Choosing

Strategic questions

This phase is a lot about prioritizing. It involves senior management since it requires the evaluation of the scenarios or strategic options created and making strategic choices. These choices will have an influence on the strategy and roadmaps of the firm. They also have the potential to structure the basis to create an innovation thesis (Viki et al., 2017) and also the basis for external communication on how Barco sees innovation, like a "thought leader". It consists on three steps:

The firm's response

Webb (2017), quantitative futurist and founder of the Future Today Institute, in her article *The flare and focus of successful futurists* she gives some details of what should happen in a step similar to this one mentioned in the 'Six steps in forecasting methodology'. As a conclusion, in first place, after the team has thought about the timeline of the technological developments (knowing phase), they should analyze what could be the firms' reactions to the possible outcomes of those developments. She suggests asking the question "what necessary strategies and ways of thinking will govern how your organization will respond to the trend?".

Evaluation of the scenarios

Secondly, The scenarios should be evaluated and scored estimating their chances to occur, and then a strategy for action for each of them should be created. In her words about the scoring results, "a score of less than 40% suggests either you haven't analyzed enough data or it is too early in the timeline to act; a score of more than 70% indicates that you've likely waited too long and should respond quickly". In this analysis it can also help to ask questions like the following:
- *How much will it cost us to make a reality this future experience?*
- *What does it take?*
- *What do we need to make it happen?*
- *What's its potential?*
- *How desirable is it?*
- *Take a look at your CAPs (capabilities, assets and positions)*
- *Does it fit in the roadmaps?*
- *Does it have the potential to have an influence on our current strategy? How?*
- *Where or what is the most profitable market?*
- *How much time will we need to capture that value?*
- *Do we have a current position that would facilitate this option? Will this option improve our presence in other markets we already operate in?*

Choose for taking action

Finally, an evaluation considering all the analysis done should finally conduct to make choices. The scenarios can, for example, be plotted in a timeline with a course of action. Some scenarios might still be based on a lot of assumptions that need to be validated, but maybe others are already clear enough to serve as a basis for new innovations.

Tools, tricks and recommendations that support in this phase

- Prioritization grid
- Experience-based roadmap
- Probability Estimation mapping
- Return on Investment Estimation mapping

The validation component in Choosing

As the last step of the 'Six steps in forecasting methodology' that Webb (2017) explains, she highlights how important is to test the strategy for action or response of the organization to those scenarios. For that testing she suggests asking questions which "should confirm that (1) your organization has confidence in the strategy and will support it; (2) the strategy offers your customers a unique value proposition; (3) you can track the developing trend and measure your outcomes; (4) the strategy communicates a sense of urgency to your staff and to your intended audience; (5) you have the resources needed to recalibrate the strategy if and when needed; and (6) the strategy is robust enough to easily accommodate change".

It is also recommended to validate the vision of the organization about the future, represented in the scenarios created, by launching solutions that already integrate some outcomes of this thinking. This way, the firm can validate the acceptance/ response/ adoption of their solution in the market and review their strategic plans. The market should be used to test their view on the future (like the parking assistant as a feature of cars could have been launched with the intent to test the acceptance of drivers on self-driving cars).
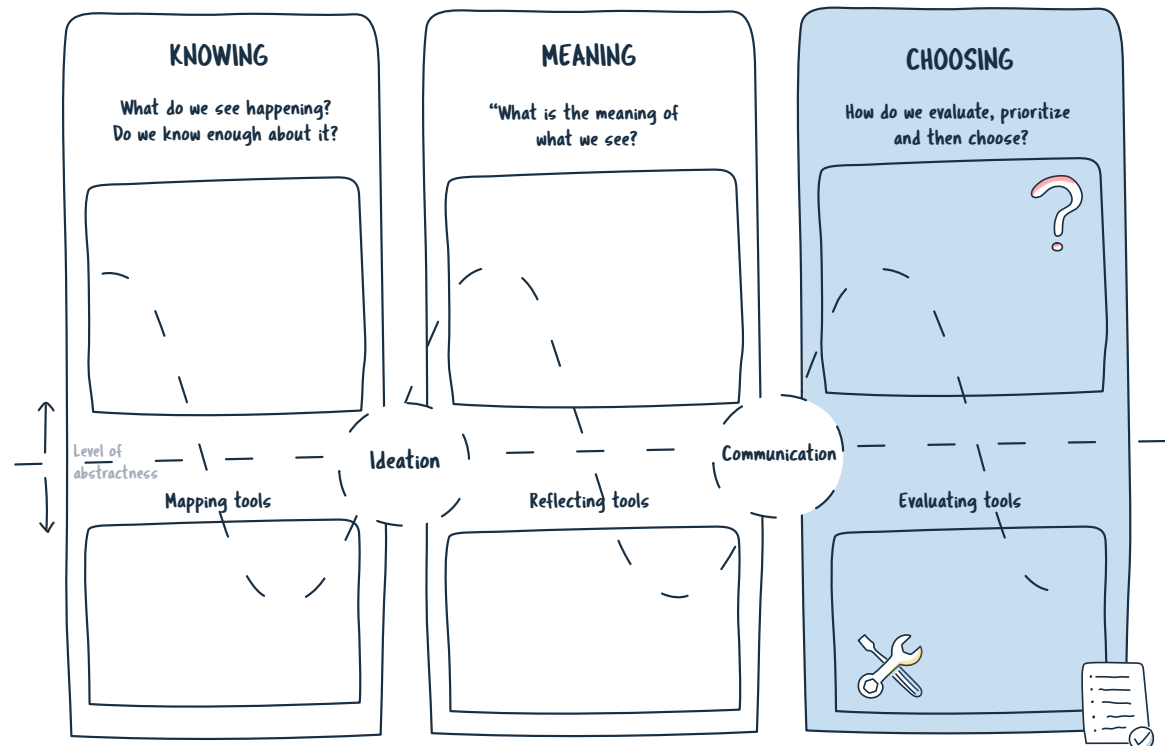
Figure 5.6: 'Choosing' phase of the workshop

KNOWING

What do we see happening? Do we know enough about it?

MEANING

"What is the meaning of what we see?"

CHOOSING

How do we evaluate, prioritize and then choose?

Level of abstractness

Ideation

Communication

Mapping tools

Reflecting tools

Evaluating tools

Preparing the ground

As said, in parallel to defining the test workshop, it had to be set up. This implied finding the right people to participate in the test, a suitable topic and an available date.

Following the recommendations of Stephanie Woudstra and her highlight on the importance of having the endorsement from top management, the Senior Vice President of the Enterprise division, George Stromeyer, was approached. I planned a conference call (since he is located in California most of the time) and told him about my project and my goal of running a test workshop to validate my design of the framework. He was asked to be the executive sponsor of the test workshop. He accepted and put me in contact with a member of his team, Barbara Verhaeghe. She contacted me and I created a presentation for her explaining the framework, my intentions and details of the workshop setup. She suggested to convert that presentation into a pitch to sell my findings and the idea to run the test workshop in front of the Executive Committee of the Enterprise division three days later.

Pitch

The pitch was structured starting with the reasons WHY this project was set up and the urgency to bring a change in mindset to Barco (Figures 5.7-5.10). It contained quotes that represented the internal feelings in the organization towards foresight and future thinking. They were also supported by visuals that highlighted the current barriers or challenges discovered in the firm. This helped to create the "Aha!" moment thanks to which employees at Barco realized how relevant was to start a change.

It was followed with WHAT the designed framework on foresight had to offer to help Barco to overcome those challenges.

Finally, it concluded with HOW would the framework help Barco to begin with this change in mindset, how the framework was structured and more details about how does it work and its elements.

The same pitch was presented to the CEO, Jan de Witte and, because of his request, to the Executive Committee of Healthcare. It is also planned to present it in the Entertainment division.

The pitch was later used as the basis to build the storyline of the animation (See following section 5.3 Animation). Therefore, all the details, the WHAT and the HOW can be found there.

Reflection

There was a salient difficulty when defining the workshop and detailing the framework. The workshop needed to be explained in detail to communicate it to the stakeholders who would make it possible. The framework also needed to be detailed so that the right words were used to communicate its role, purpose and potential in the animation that was going to be presented at the beginning of the workshop.

The difficulty was in detailing the workshop enough so that everybody (Guy, George, Sandra and myself) had a clear idea of what was going to happen on that day and what I needed to make it happen; while at the same time keeping the overview and the not so detailed representation of the framework. The words used to present the framework should be clear, concise and carefully selected, but shouldn't go too much in detail since the purpose of creating a framework was to avoid delivering guidelines or templates but strategic questions that would facilitate a change in mindset. However, to design, communicate and execute the workshop, a bigger level of detail (like which activity was going to take place when and for what purpose), was needed so that the participants could be guided along the exercise. In conclusion, having to play with different levels of concreteness when detailing and guiding was a challenging and interesting task.

UNREADINESS
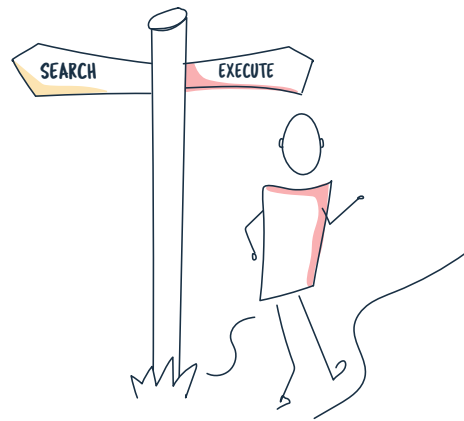
"We start innovating out of necessity"

"If it is about how trends and markets are moving, I think we have some gaps"

"What is the next step we think on the path that we are in already, and is not enough challenging the path we are on, is that still the right one, which big course corrections do we need to take?"

NARROW SIGHT
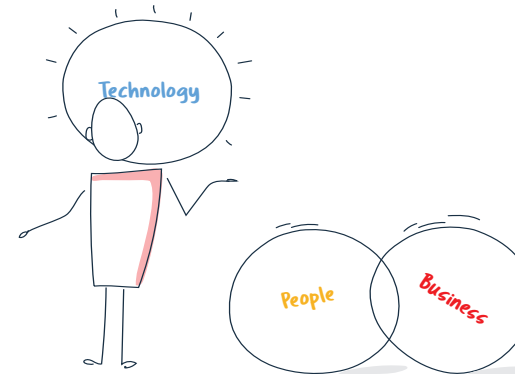
"In the world of today is much more about business models and new user experiences. If you are stuck in technology you never jump far enough"

"The way of looking to the outside will improve if we support more views, so doing better "our homework""

"We are not strong and disciplined enough in our listening to markets, in capturing information and in having the big picture"

OVERCONFIDENCE

"The times that Barco looks outside coincide with the big conferences. One or two occasions per year per product line. The bad side is that everyone in the industry is doing the same at the same time"

"Triangulation is mostly internal. We already have a well defined idea and we then go out to confirm"

"We immediately want to start with the development. And then validation is rather a check"

OVERANALYSIS

"We should find a good balance between the short term (analytical and detailed) and the long term (more storytelling). And we need to put some budget there"

"That's another big challenge of the SMP now, we make it, we share it once with the team and then it is like..."

"We overdo it on the numbers, our comfort zone again, and then we underdo in the technical and marketing side, the scenario planning, etc"

"People only share insights with their internal network, I come from a world where everything is shared. Here there is no dialogue space, it is too formal"

Figures 5.7, 5.8, 5.9, 5.10: The 'Why' of this project as presented to the CEO and the Executive Committee of Enterprise and Healthcare

5.3
Animation

The animation was chosen as one of the deliverables because it was the best means for Guy Van Wijmeersch to communicate my findings and the reasoning behind the framework that was designed for Barco.

Storyline

The storyline used for the animation was previously agreed with Guy since the animation would be his tool to communicate my project internally and externally. We both agreed that because the pitch to the Executive Committees and to the CEO was nicely welcome by the 'public', the animation should follow the same structure and very similar content.

The animation starts with an introduction of the current context in which Barco operates, affected by the continuous change of customer's expectations and disruptive technologies. It continues with an explanation on foresight and its presence in corporates that are similar to Barco. Then, as the pitch, it elaborates on the WHY, WHAT and HOW of the framework. The 'Why' talks about why this project was set up and why there is an urgency to bring a change in mindset

to Barco. The 'What' elaborates on what the designed framework on foresight had to offer to help Barco to overcome those challenges. Finally, the 'How' details how would the framework help Barco, to begin with this change in mindset. It includes an explanation of how the framework was structured and more details about how does it work, its elements and their interrelations.

The script of the animation is contained in Appendix H: Animation script

Style

The style chosen follows the aesthetic used along the whole report. The same style of visuals was used for the pitch presentation, and they received various compliments. Therefore, it can be concluded that metaphors are a good means to communicate difficult and sensible matters within Barco. George Stromeyer even asked me to create a couple of visuals for their Straight-Up presentation that took place some days later. They had to represent their three priorities for the next quarter: scale the business, predictable execution and customer experience.

After seeing the welcome of this type of visualization, the animation was created following the same lines.

Storyboard

The storyboard was created based on the storyline mentioned above and it consisted of 23 frames. They can be found in Appendix I: Animation frames.

The animation will be available in my LinkedIn profile after the graduation deadline: https://www.linkedin.com/in/blanca-fernández-hernando-95a903122

"We need a sustainable way to bring this knowledge to teams. We need to create the next generation of product managers with this"

Jan De Witte, CEO at Barco

6
Conclusions & discussion

The chapter 'Conclusions & discussion' is the last chapter of the report. It contains the evaluation of the internal campaign and the framework, together with recommendations and the personal learnings.

In this chapter, the reader finds the final discussions after evaluating the results of the questionnaire about the internal campaign and after presenting the framework in Barco.

It continues with the assessment of the framework as the solution provided to Barcon following the criteria set in Chapter 1.

The chapter concludes with some recommendations for Barco focused around the implementation of this new way of thinking, and with the personal learnings gained along the project. What an adventure!

6.1
Evaluation

The evaluation or validation of the deliverables of this project can be divided into two phases. The validation of the internal campaign, which happened in December through a questionnaire, and the validation of the foresight framework, which happened in two times, externally and internally.

Internal camapaign validation

The validation of the internal campaign was based on a questionnaire that was sent to all the members of the Yammer group. At that time the group was integrated by 100 people, being always the group in the third position according to the number of participants, behind the groups 'Belgian news' and 'General Entertainment'.

Non-members of the group also participated in the discussion, the posts were read by 371 Barco employees external to the group. It is possible to say that at least it sparked interest among Barco employees, to at least, take a look at them.

Questionnaire results

The questionnaire consisted of **5 questions** with answers distributed in a five scale points (1= not at all, 5= very much) that wanted to test 4 hypotheses, which are mentioned in chapter 4. The questions were:
- *To what extent did these questions make you reflect on what happens within the business context of Barco?*
- *To what extent do you consider important to frequently look at what happens within the business context of Barco and think about what it could mean for your business?*
- *Did the questions make you think about the impact that those innovations and trends could have on Barco's businesses?*
- *Will you consider asking these questions within your team more frequently?*
- *Will you consider that asking these questions within your team should be part of your "official" team activities?*

The questionnaire was responded by a total of 34 out of 100 group members, of which the 47%, occupied positions as strategic or segment marketers and product managers, the main target group of this campaign.

Between the respondents, 47% (4 and 5 responses selected from the 5 point scale') considered that these questions made them reflect on what happens within the business context of Barco. The 85,3% considered that it is important to frequently look at what is happening within the current business of Barco and to give it a meaning or translation for the firm. However, for 38,2% of the respondents, the questions didn't really have an influence in making them think about the impact that those innovations could have on Barco's businesses.

About the last two questions, 38,2% of the respondents will consider asking these type of questions within their teams more frequently, and 47,1% believe that asking these questions should be part of their "official" team activities.

In these responses it was possible to see that a big number of participants were not really influenced by the questions, since they scored it with a 3. However, people who scored them with a 4 are in majority product managers and strategic marketers, or employees with a similar role to product management. The results of the questionnaire can be seen in Appendix J.

Feedback

At the end of the questionnaire, a comment box was left so that respondents could give feedback and indicate if they would like to be informed with the results. 38% of the respondents left their email to receive the results of the questionnaire and eight people gave comments.

Some of the more remarkable included opinions about the lack of time available for this matters, however with discrepancies about the relevance of the questions: *"the questions you are asking are not relevant and only for people with lots of time available. They do not address the real concerns of our partners, customers and end-customers"* and *"Although very relevant, these questions were not related to the domain I am active in. To busy tackling other stuff to follow the conversation".*

They also consider relevant to look outside the current business of Barco, and that this thinking should have a formal place in Barco at least twice a year: *" You said: "To what extent do you consider important to frequently look at what happens within the business context of Barco ...". It's as important to also look outside the current business context!" "It shouldn't be part of our team activities on a regular base. But twice(+?) a year, for example, would be an interesting suggestion".* On the other hand, someone commented that maybe it is not the right moment for this type of initiatives, yet: *"This initiative comes a bit "forced" meaning it can be powerful when we are a bit further within the cultural change within Barco. We need other means first to create a new style/ culture in my opinion".*

Framework validation

The framework was validated externally at the beginning, with the corporates and consultants that were interviewed. And internally in Barco, when it was presented and pitched to the executive committees of Entertainment and Healthcare and to the CEO.

The interviews with three people with roles directly linked to innovation, foresight and trends in IBM, Philips and PEPP, was considered validation. Their input was used to shape the framework, but their feedback and comments were also used to refine and restructure it. They showed interest in receiving the results of my work at the end of it and highlighted its relevance. In addition, the exchange of tips with Stephanie Woudstra and Jurgen Tanghe, two consultants very close to the topic as well, was another way to validate the framework and get their learnings from previous professional experiences.

The initial idea was to test the framework with a test workshop. However, because of the time of the year in which the project was finished (end of the year/quarter and staring of the year), in combination with the recently announced reorganization, it was not easy to have the right people available for it.

Given the time left for internal validation, the pitch to the executive committee was organized with the purpose of gaining attention from higher

spheres of the Entertainment division, make them aware of my findings and ultimately get volunteer teams to run the test workshop. Two teams wanted to try it, and everything is currently being set up to run the test workshop with them in March. In that sense, the presentation was a success, but also the comments received highlighted that the results were very recognizable. Somebody even said, *"analysis -paralysis, that's what we have here!"*. The build-up and structure of the presentation made a lot of sense for them too, and because of that, it was decided to use it also for the animation script.

The feedback of Jan de Witte, who immediately accepted my invitation to update him on the results of my thesis, was also very positive. *"This is very good, beautiful through its simplicity. Nobody is gonna contradict this"* he started. He found the framework as something that should be part of a training programme for the next generation of product managers that Barco wants to create *"We should educate. It has to be embedded in how we educate people. [...] I wanna have a training programme for SM & PM, with around 25 people. [...] We need a sustainable way to bring this knowledge to teams. We need to create the next generation of product managers with*

this". He also asked to present the work to the divisions of Healthcare and Entertainment during their Executive Committee (with Healthcare it is already scheduled on the 25th of January).

There is also a willingness from Guy Van Wijmeersch to continue this work together, to collaborate in setting up everything to start with those first testings in March.

Figures 6.1: Pitching to the Executive Committee Enterprise

6.2
Conclusion

From the internal campaign, it can be concluded that there is a willingness to incorporate this thinking and a new mindset in Barco. However, the better way to do it was still a question mark at that point. On the other hand, the responses from the committees and Jan de Witte already give the impression that making this part of a training programme and testing it with some teams are good options for the first introduction of the framework in Barco. The internal campaign can be considered as satisfactory for the research because it helped to get a feeling of what Barco employees think about foresight (with many of them I didn't have contact before). It also helped to get to know interested people in the topic, who gave their emails to be updated on the results and maybe build a network that could act as ambassadors of the framework.

Deliverables assessment

As mentioned a couple of times along the report, the final solution was going to be assessed in three different ways: in desirability, feasibility and viability; in regards to the three requisites decided at the start, and according to the value that it brings to Barco (operational, human and strategic) (all this is indicated in Chapter 1).
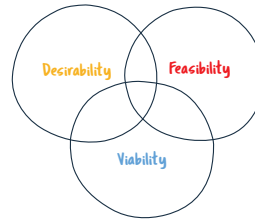
Desirability, feasibility and viability

Desirability
The solution has clicked with the interests of strategic marketers and product managers who have already shown their willingness to be updated with the result of the thesis. Moreover, the framework fits in the plans of the CEO as part of the new training programme. Especially for Guy, the findings of this project mean a big step in the change in mindset that Barco needs and all of it grounded in literature and expert interviews. Therefore it can be concluded that the solution is desirable for Barco, especially in these times of change in the firm.

Feasibility
The combination of design skills and design thinking principles with foresight was complex at first sight. However, after the interviews with professionals in connexion with both worlds, the inspiration was enormous, and the potential of the combination was discovered. The majority of the framework and the workshop have the potential to be used by any other company struggling with the same challenges as Barco. In the end, it has been possible to create a solution

that fits and resonates in Barco, without it being too specific for a certain team or business unit of the firm.

Viability
About the viability of the solution provided, it is relevant to mention that it has not been possible to start a formal implementation, which would be the one that fits in their formal processes. However, the informal or first landing in Barco has started and seems successful (see more in the next section).

A solution easy to implement, that serves as strategic guidance and is dynamic

The solution should be **easy to implement** within current Barco operations and shouldn't feel like a burden or as 'another change'. This has been a challenge in the last months, especially because of the influence of the reorganization in the employees and because of happening during the period for closing the year. However, so far nobody had reactions like "we already do this" or "again another change" etc, but there were reactions like "we don't have time for this, we are very busy with operational stuff".

It should serve as **strategic guidance** for the organization, to support in projecting the company towards the future. About this criterion, it is clear that the framework meets the requirement. It is the main purpose of the framework to support Barco in projecting the company towards the future. It serves as a guide to support its practitioners with strategic questions combines with tools and exercises.

Finally, the solution should fit in a **dynamic tool** in which the content could be updated, iterated and discarded if necessary (as quickly as the demands on the technology that Barco operates with shifts) to facilitate validation and encourage a continuous learning attitude. As explained in the framework definition, teams should go through the exercises of the framework at least once a year like the SMP. It is recommended to execute it a couple of times, but what is sure is that the content should be continuously updated. Teams, following the validation recommendations, should update the insights and scenarios of the framework as soon as they have new insights that validate or contradict them.

Operational, strategic and human value

Together with that, in Chapter 1 it was also mentioned that the solution provided to Barco had the aim to bring strategic operational and human value.

Operational value

The framework wants to change the mindset of the teams that go through its exercises, by starting to analyze the context of Barco (and others that can have an influence on it) through the three lenses of business, people and technology. In this way, the understanding of the company will be much more complete and holistic, allowing innovators in Barco to have the big (and updated) picture of the current situation in which they want to innovate. This will also help Barco in finding the right thing to solve, the real customer need, where which Barco could apply its knowledge in technology.

At the beginning uncertainty will be embraced, because experiments and validation will be set up. Then, uncertainty will disappear in some domains because of the good knowledge that Barco will acquire thanks to triangulation.

Strategic value

Because of looking at innovation from the angle of trends and current innovations, and by using them to project current customer needs in the future, the scenarios created will have a more strategic outlook. Barco will work in the three horizons, overcoming the traditional stuckness that analytics and revenue numbers were provoking. As a consequence, Barco would stand out from competitors, and will probably step into new markets that will be discovered.

Since the teams involved should be multidisciplinary and encourages a learning attitude, more Barco employees will engage in these strategic discussions. Also when having to challenge the scenarios externally, employees will have to present and defend them in front of experts, while being open to receive feedback too. All this knowledge collected during internal and external activities will increase the in-house knowledge and foresight-related skills of the firm.

Human value

As said by Jan De Witte, if this framework would be part of a product managers training programme, those would be the next-gen of products managers in Barco, which now tend to focus on the technology aspect and the pure execution of the business. The framework will support them in the exploratory phase of the business and will increase their skill-set so that they can act smarter. They will be able to anticipate changes in horizons one, two and three earlier and they will have a more proactive attitude.

The framework ensures a safe space for innovation in which participants have the freedom to think beyond horizon 1 and 2, because they count on its tools to communicate these types of innovations better.

6.3
Discussion

This section elaborates on the suggested implementation of the framework and the potential that the internal campaign could have if turned into an established activity in Barco.

Recommendations

About the framework, it is recommended to separate its implementation in two phases:

A first implementation or landing, which has already started, was initiated thanks to the figure of the executive sponsor, George Stromeyer, and will contain the test workshops and more feedback from other teams and divisions. Some managers already asked for the final results of the thesis, so it would be good to approach them to get their feedback and involvement too.

The formal implementation would start when finding ambassadors (maybe people interested in the results of the thesis) who could spread the word and get trained, while at the same time being involved in building a formal process around this framework in Barco. As Jurgen Tanghe suggested, this framework has to make sense within the current operations in Barco, otherwise, people

will not engage and consider it as part of their "duties". Therefore, a dedicated team should work on the formal implementation of the framework so that it can have a place before the official SMP exercise. The suggestion of Jan De Witte to make this part of a training programme for what he calls "the next generation of product managers" is also considered as part of the formal implementation.

Another annotation for Barco, already transmitted to the CEO during the last meeting and along the report, is to set up official targets or KPI's to measure this proactive attitude and the employees' activity around it like they do in Philips. If this is not part of the evaluation of employees and part of their incentives, it will never be perceived as something as important as selling more products.

As it was suggested in Chapter 4, about the follow-up of the internal campaign, some more relevant topics for Barco could be highlighted and discussions could be formalized around them. They should include external experts, end-users and customers in what could be the TexTalks2.0.

6.4
Personal learnings

Embrace versus complain. Along this project I learned to see options B and C when option A was impossible to achieve. When things were getting difficult or out of my hands I had to find another mean to make it happen. And throughout this project I learned many tricks to get this done. Here follows a visual (Figure X) that represents all my learnings, reflections and experiences along this (so far) four months journey:

"Yes, this is definitely what Barco needs!"

However, it was positive and motivating to see that the interviewees saw the relevance of the topic I was going to research and the urgency to do something about it in Barco. Then I felt I was really going to help them and that we could do something together. However, I didn't know that this interest was mostly just words.

Overwhelmed

The boundaries and scope of the project were not clearly defined from the beginning. This together with all the input received with the first interviews, being in a new country and the corporate environment made me lose a bit the control over the content and the research direction.

The first boundaries

All that agreement and involvement with the topic started to create many options where to focus, and I had the risk to be trapped in their agendas, trying to solve their individual problems. I had to avoid being steered during the interviews and I needed to take control over the course of the talks again to set the boundaries of my research phase.

The first hypotheses

After being aware of the need to set boundaries to better guide the conversations myself, the suggestion of creating the first hypotheses helped. This gave me some research direction already, and helped me in defining the topics that were more relevant for me in the research phase.

"Yes, and.." instead of "Yes, but.."

I missed this attitude when I was bringing my learnings and discoveries to my company mentor. I expected reactions focused on finding applications and possibilities for my learnings, and what I found was mostly reactions trying to fit my learnings in more complex and dependent ecosystems in Barco. I also expected more intellectual involvement, like brainstorming together when things were getting complex and I had to choose my focus or what to deliver at the end of the project. In the end the whole decision making was always left up to me.

Expect others to have the same priorities you have

I tried to fit the findings of my thesis in their agenda by asking some teams to co-create a workshop about defining scenarios. But I did not considered their situation (end of the year period) and that they were not aware that they needed this, or why it was urgent. Even if my reasoning clicked in their heads, they had other priorities. My company mentor saw the urgency, as well as I did, and he believed that they would see it anyway. However, in practice, things are different. I missed some more authority at this moment, because I felt begging for their time. And at some point I even ended up trying to shape a completely tailored workshop to solve the concerns of a team, and then I realized that something was completely wrong.

Don't try to please everybody, first realize your goals

Before going to Delft I learned that this was the point when I had to set my personal goal for the project and use Barco in very specific moments for the benefit of the project. I needed to avoid adapting to these teams, my company mentor, and Barco on itself. I do not work for them, we work together. And since I did not see that complicity I went to Delft to focus on achieving my own goal: to develop a framework that could be relevant for more companies than just Barco. This happened at the same time as the CEO announced the reorganization.

Feeling part of a "team"

When talking to the consultants and corporates I found a lot of inspiration and support to my thinking, so I felt I was part of something bigger. This is something I didn't feel in Barco, where I expected that some more like-minded people would have been identified by my company mentor beforehand. After some time I simply realized that only my mentor and I were on the same boat.

Option B: Create awareness

Probably the campaign needed to have been more targeted but I was suggested to move to Delft for a next phase of the project and I wanted to try something fast and get some reactions. However, I was satisfied with the content used. I could also have decided to go for the interviews with corporates earlier (if I wouldn't have decided for a workshop), since I had enough material to start the framework. However, talking to the teams and getting a negative response helped to define the starting point of the framework more precisely.

How to create influence on my own?

I learned that it is very important to have solid arguments grounded on literature. But even more relevant was to have them grounded on insights gathered from other companies in the same situation as Barco. Therefore, getting feedback and input for my framework, based on the real practices of these corporates and consultants, supported me in creating influence. It helped me in demonstrating the relevance of my findings and in applying some of their tricks to implement the framework successfully.

Meaningful feedback

I expected to have more recognition and meaningful feedback from Barco' side after having validated my findings with three corporates and two design consultants. Thanks to having contact with them I defined the framework that would be built for Barco. From all their learnings and experiences that I collected, Barco could learn a lot during their current transformation. All the interviewees showed great enthusiasm for the results of my research and asked to be updated.

Look confident, and nail it!

A tip that I received in Barco before my final presentations, where I had to pitch the findings and conclusions of my research in Barco together with the framework I designed for them. By being bold with the statements about the current challenges that Barco is facing, I felt that I had won their attention. By showing confidence and reliable sources when affirming some statements about foresight in corporates, I also felt that I had won their interest. By detailing the framework and workshop as much as I could, they finally trusted me to test the framework together.

How to create influence with the help of others?

Thanks to the tips of Stephanie Woudstra and in general of everyone who told me that without C-level endorsement I wouldn't make it a priority I learned a lot. I learned that casualties can facilitate you the work a lot because people get to know you, and then it is easier to get them involved in your purpose. That is what happened with George Stromeyer, the Senior VP who I approached to be the executive sponsor of the framework I designed. Working on Barco the majority of the time was also a good idea since many people afterward recognized me. The tips from the colleagues before presenting my work to the executive committee were also a good push. I can say that in that sense, people in Barco like to help others.

7
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8
Appendix

Appendix B: Interview guide

SMP general questions

What is the SMP exercise for you?

What does it mean for your work? (How does it impact your work?)

What does it bring as an extra compared with not doing it?

What do you think works better within this exercise and means more for Barco?

What do you ideally expect from it?

Foresight (related to SMP) questions

Is the foresight done before the SMP enough for Barco´s innovation goals?

According to you, what are the key elements to search for when scouting the future?

How often does Barco look "outside"? Do you consider it enough? What are you most satisfied with, related to how Barco looks for "the next big thing"?

What would you see as a step ahead for Barco in relation to this topic?

Appendix C: Material internal campaign

Join the conversation on Yammer

Are patients taking control over their own healthcare?

Join the conversation on Yammer

Will autonomous vehicles be the new work places?

Join the conversation on Yammer

Will the offices of the future be mobile?

Join the conversation on Yammer

How is Netflix challenging the cinema experience?

Join the conversation on Yammer

If voice-recognition is becoming the norm in hospitals, what is next?

"A wearable device that can provide critical data for doctors and peace of mind for you"

Apple Watch Series 4 gives customers control over their personal healthcare by enabling them to take an electrocardiogram (ECG) reading right from the wrist using the new ECG app.

Are patients taking control over their own healthcare?

Join the conversation on Yammer

ENABLING BRIGHT OUTCOMES

BARCO

"The Netherlands' new train cars are nicer than my office"

A flexible concept train for the year 2025 for NS, who insists that the train of the future "will turn journey time into working time. Or time for reading, chatting, or chilling out . . . it's the passengers who decide."

Will the offices of the future be mobile?

Join the conversation on Yammer

ENABLING BRIGHT OUTCOMES

BARCO

"Netflix, the streaming giant is set to be heading to the big screen for a new releasing model"

It started as a service to watch movies by yourself on a personal device, with the headphones firmly plugged in.
However, after having purchased the rights to some of this fall's most hotly anticipated titles, they're now toying with the idea of releasing them in bricks-and-mortar theaters – actual buildings, in the real world.

How is Netflix challenging the cinema experience?

Join the conversation on Yammer

ENABLING BRIGHT OUTCOMES

BARCO

Appendix D: Questionnaire Internal campaign

What is your function at Barco?

Texto de respuesta corta

1 To what extent did these questions make you reflect on what happens within the business context of Barco?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Very much

2 To what extent do you consider important to frequently look at what happens within the business context of Barco and think about what it could mean for your business?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Very much

3 Did the questions make you think about the impact that those innovations and trends could have on Barco's businesses?

	1	2	3	4	5	
No, not at all	○	○	○	○	○	Yes, very much

4 Will you consider asking these questions within your team more frequently?

	1	2	3	4	5	
No, not at all	○	○	○	○	○	Yes, very much

5 Will you consider that asking these questions within your team should be part of your "official" team activities?

	1	2	3	4	5	
No, not at all	○	○	○	○	○	Yes, very much

This comment box is for feedback, tips or any other suggestion on how to have the same impact on Barco with different means.

Appendix F: Templates 'Framework canvas'

KNOWING

Do we know everything?

MEANING

What does it mean for us?

CHOOSING

How do we choose?

Mapping tools

Reflecting tools

Evaluating tools

Resources evaluation

Richness of insights

Priority assessment

Themes clustering

Appendix F-2: Cards to support during the talks

Communication
of choices

User value
creation

Strategic fit
assessment
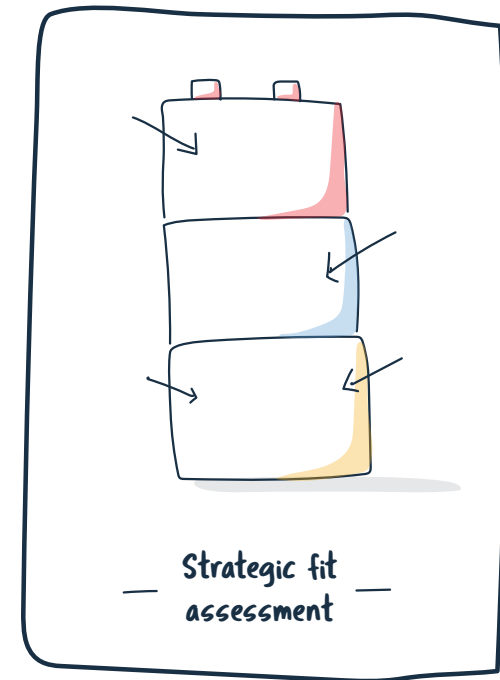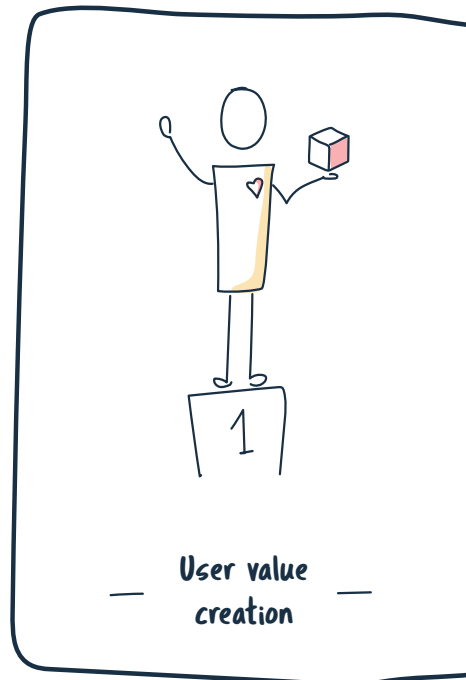
Appendix G: Templates 'Workshop to choose the final deliverables'
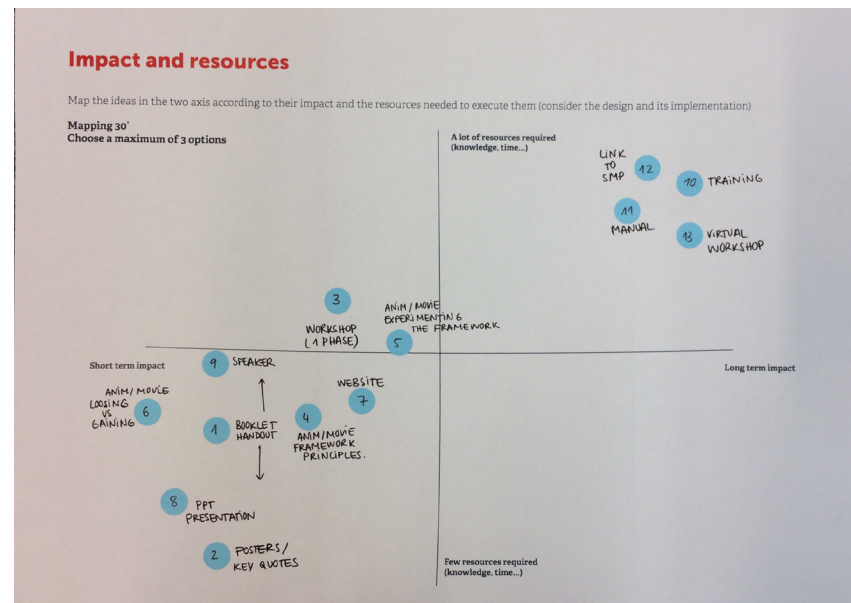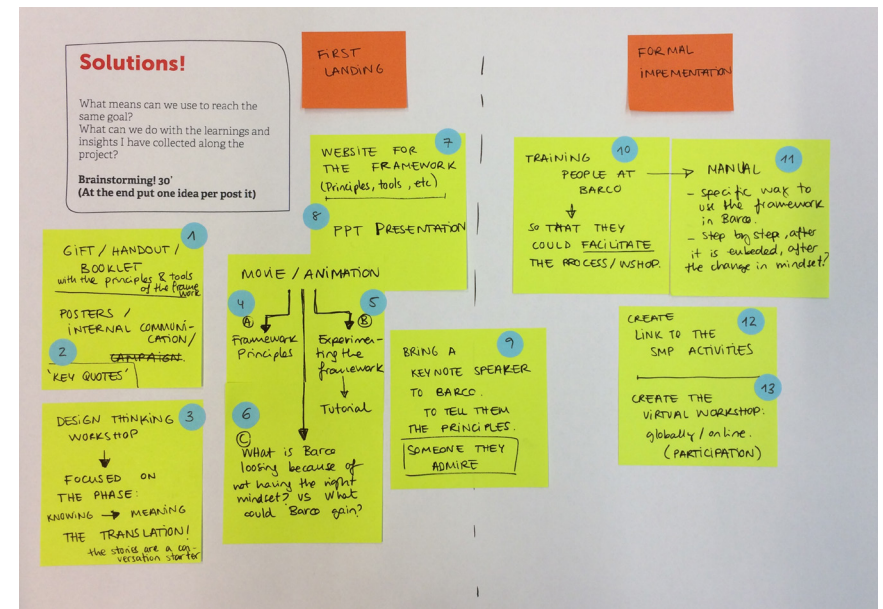
Appendix H: Animation script

1. This is a research project on foresight activities in corporates
2. In combination with design thinking principles for the Belgian company Barco
3. In these times of fast-paced innovation, the needs and expectations of users evolve faster than ever. And all this is combined with disruptive technologies booming every year
4. If companies with a trajectory want to stay relevant in the future, a new mindset that integrates all these variables is needed. To support in the task, this foresight framework has been designed
5. It wants to create a change in mindset thanks to which Barco will start innovations combining knowledge on business, people, technology, current trends and innovations and thinking first on who will use the solution, then how will be the experience be and in last place, "what does Barco need to make that experience possible?"
6. But first of all, what is foresight?
7. Foresight is a discipline that elaborates views of future options and offers the possibility to make choices. It explores the future more qualitatively and encourages companies to have a more proactive attitude towards it.
8. Foresight is established with formal processes in 50% of the companies that are similar to Barco.

It is supported by top management, and when executed with frequency it derives even more value.
9. But why do I believe that all this is needed in Barco? 13 internal interviews shaped the answer
10. [Unreadiness:] In Barco there is a bigger focus on executing than on searching, which causes some gaps in understanding how markets and trends are moving.
11. [Narrow sight:] As a well-known hardware manufacturer, Barco tends to start innovation from a technology point of view. [However, to have the big picture, a good understanding on business models and customer insights is crucial.]
12. [Overconfidence:] and sometimes assumes what the customer or end user needs, supporting it with internal validation [and many times it looks more like a check.]
13. [Over analysis: or analysis-paralysis]. Numbers and analytics work well for short-term calculations, but how does Barco communicate innovation when talking about the long-term?
14. Then, what does this framework offer to Barco to overcome those challenges?
15. A holistic view and understanding of the business context of Barco through the three lenses of people, business and technology.

16. Thanks to which Barco will be able to anticipate changes in horizons one, two and three.
17. Results will be achieved faster thanks to a change in mindset in which validation plays a crucial role by involving a multidisciplinary team from the beginning that integrates internal and external people like experts and customers.
18. It also brings a better way to communicate innovation through the creation of future scenarios and storytelling. Externally, they can be challenged by external experts. And internally, they help to create a shared language for innovation.
19. And how does the framework enable all of this?
20. It consists on a set of strategic questions that want to facilitate a change in mindset and it includes a set of tools, principles and tricks to support its practitioners.
21. It is structured in three phases: (Knowing), what do we see happening? (Meaning), what is the meaning of what we see? (Choosing), how do we evaluate, prioritize and then choose from those different meanings or future scenarios?
22. The strategic questions have a place on the abstract thinking level, whereas supportive tools lie in the more concrete level.

23. And to conclude, the last three keys of this framework: Ideation helps in translating trends and drivers of change into more understandable meanings. Communicating the scenarios though storytelling helps to create dialogue, uncover assumptions and inspire. And validation, as said, plays a crucial role in three more moments along the framework.
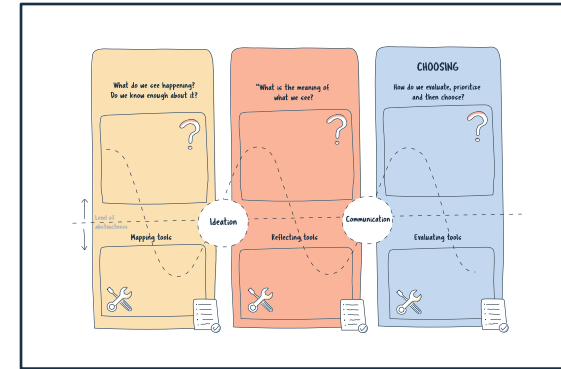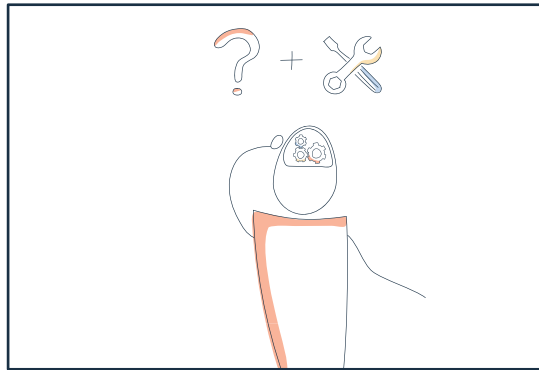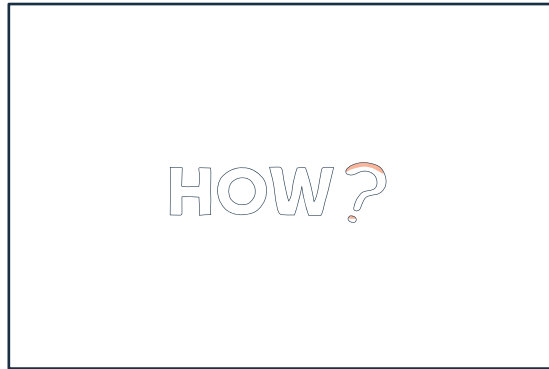
Appendix I: Animation frames
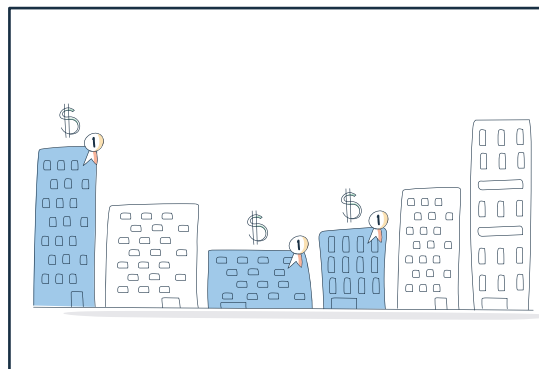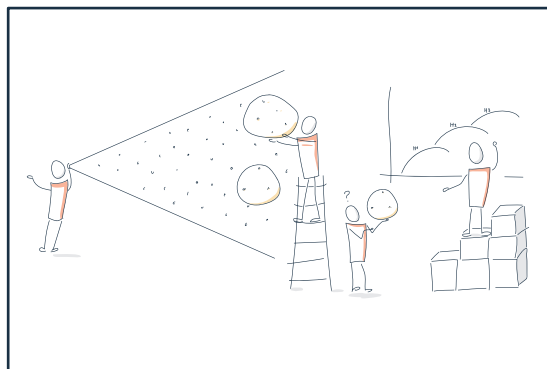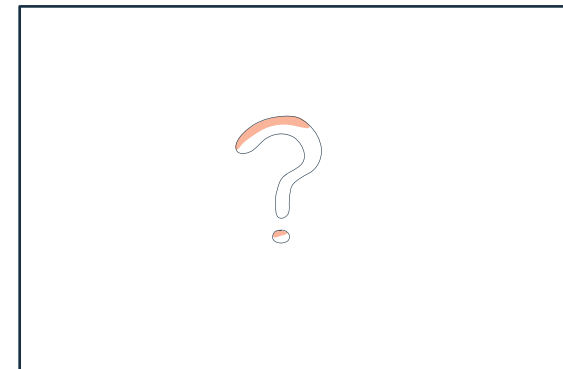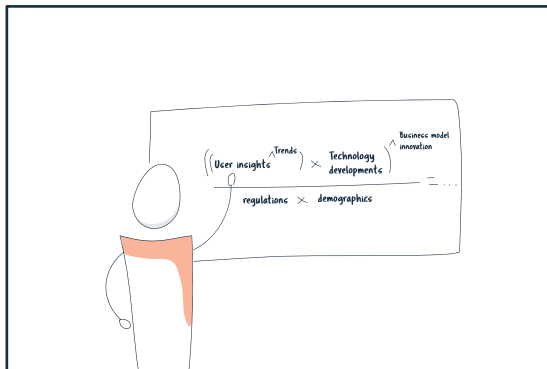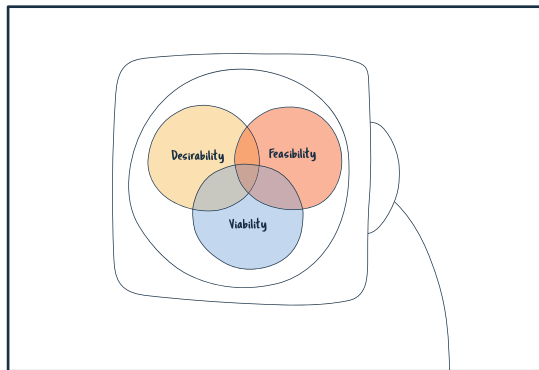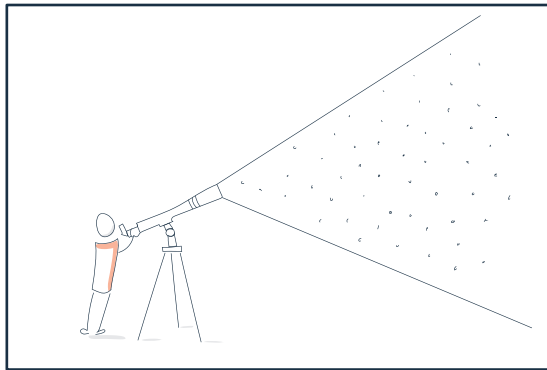
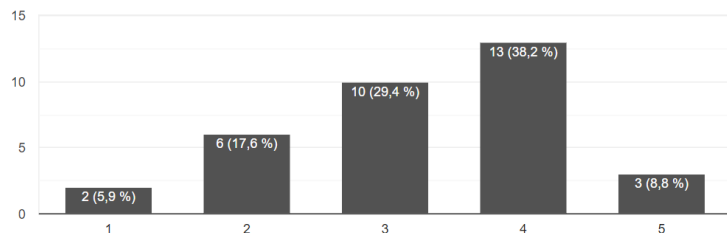# Appendix I: Animation frames
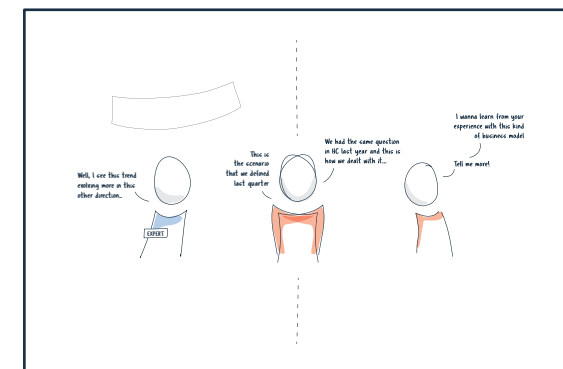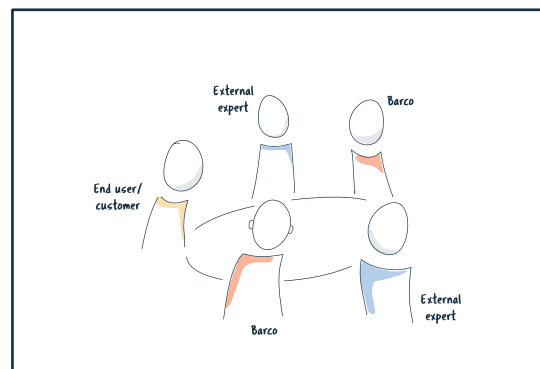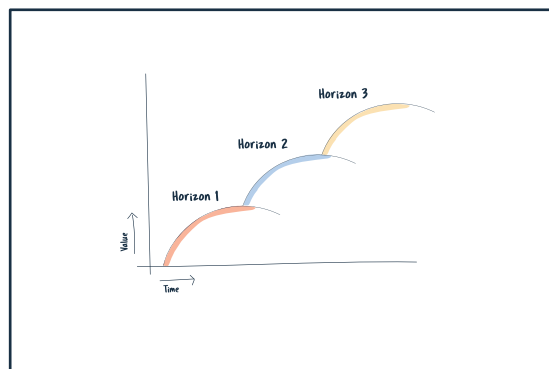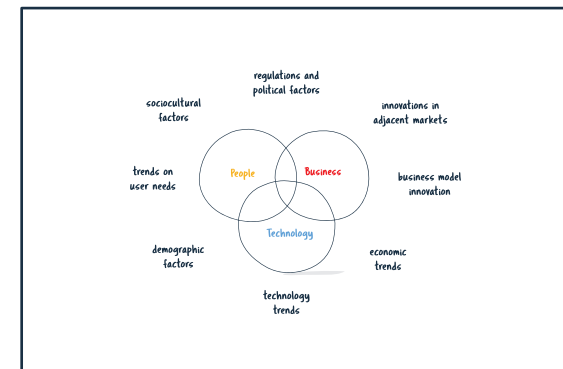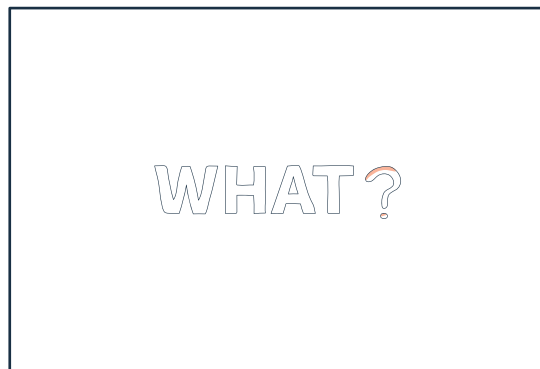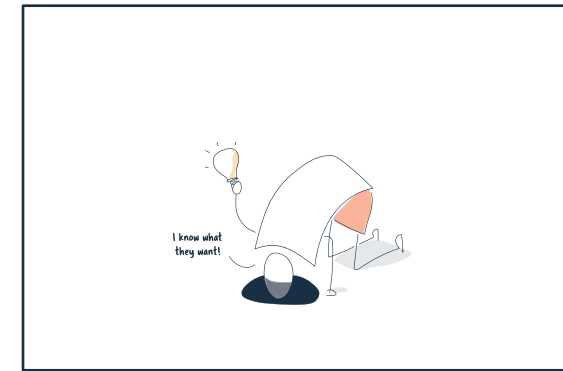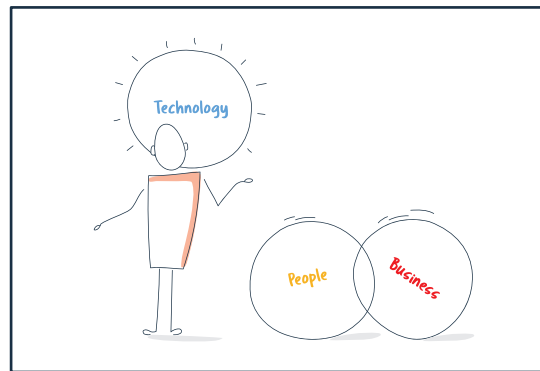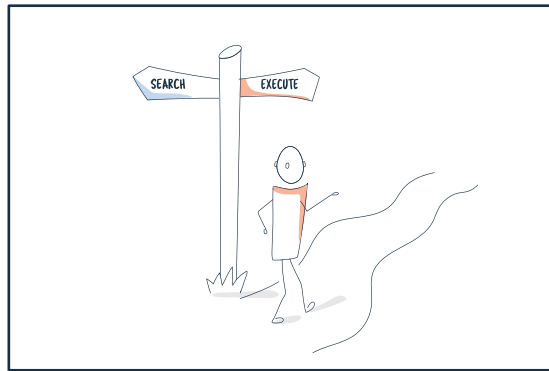
Appendix I: Animation frames

Appendix J: Results questionnaire (Internal campaign)

1 To what extent did these questions make you reflect on what happens within the business context of Barco?
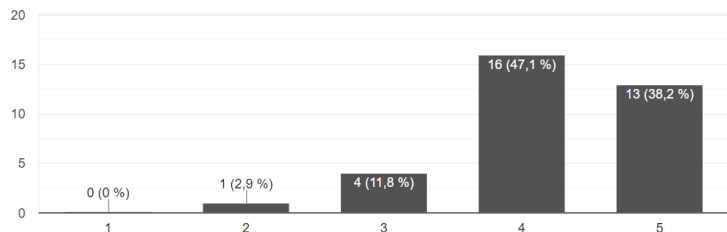
34 respuestas

4 Will you consider asking these questions within your team more frequently?

34 respuestas

2 To what extent do you consider important to frequently look at what happens within the business context of Barco and think about what it could mean for your business?

34 respuestas

5 Will you consider that asking these questions within your team should be part of your "official" team activities?

34 respuestas

3 Did the questions make you think about the impact that those innovations and trends could have on Barco's businesses?
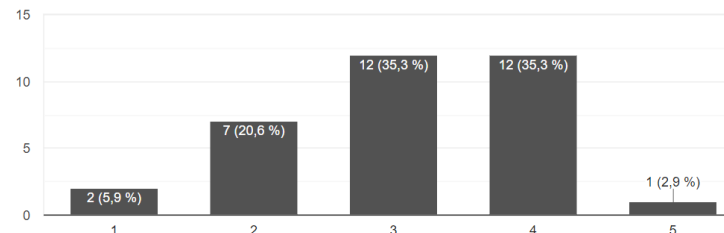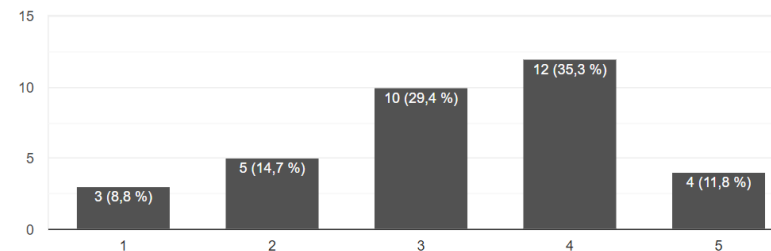
34 respuestas

Thank you