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A strategy for the Customer Brand Engagement (CBE) – A data product by Axians
Futureproofing a digital product - How to develop and manage digital products

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Abstract

The present project proposes a strategy to be followed within product development and management of Axians's future Customer Brand Engagement (CBE) data product, supported by a market and legal context. It suggests a three-step framework to be deployed in order to futureproof the product. Then, it recommends actions to enhance it by ensuring user engagement with an app that would add a new relevant data source to the model. Finally, it presents a state of the art of technology available to deliver and execute the remaining data sources the product will model and provide insights from.

Keywords

Product, Data, Digital, Product Management, Product Development, Customer Experience, Customer Experience, Customer Engagement, User Engagement, User Experience, Stayaway Covid, Technology, Behavioural Mapping, Industrial Clusters, Sentiment Analysis, Data Silos.

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1. Company and Problem Overview

1.1 Axians

Axians is a company belonging to the VINCI Energies group with a strong local presence in 23 countries. It is specialized in assisting companies optimizing the information technologies challenges faced by them and accelerating their digital transformation processes, contributing to successful business outcomes. Axians's innovative solutions may be implemented on site or made available as a service.

The company's portfolio includes the areas of cloud services, infrastructure software development, cyber security, artificial intelligence, energy sustainability, IoT and intelligent services, among several others. Improving the lives of people and businesses through a deeply human and personal relationship with clients is Axians' promise. Furthermore, the company's mission statements comprise supporting its customers on their digital journeys, providing a comprehensive portfolio of solutions to meet a wide range of needs and delivering innovative projects through agile teams, market knowledge and customized solutions. Empowerment, entrepreneurship, responsibility, solidarity and trust are Axians' values, which are aligned with VINCI Energies' DNA.

1.2. Problem Framing

The challenge presented by Axians to the group was, in short, to evaluate the context and recommend a strategy for a new potential product, based on the need to evolve the physical space experience into a multipurpose space, with custom-made services, easy access and an omnichannel experience, across every sector.

The company aims to productize the access to and the modelling of non-personal data from physic and online spaces users, in order to sell it to brands who wish to optimize and

enhance their customer engagement and experience. The vision for that product is to become a platform with a global measurement system (which measures and presents the engagement of those users to a brand within those spaces), and it is currently under development.

The main goals would be to create long-lasting relationships, incite the feeling of belonging, and help to close the gap between customers and brands, during the customer experience.

2. Methodology

The customer data and customer experience market was analysed in order to assess if it was moving favourably to welcome a data product like CBE. Some key trends were identified and grasped to provide a succinct landscape of relevant ones. Afterward, a selection and characterization of different legal approaches across the international economic powers - EU, USA, China and the rest of the world - to data collection, management and employment were briefly described.

2.1. Futureproofing a digital product - How to develop and manage products

The following step was to put together a framework that would futureproof the CBE. As a first step, the main concepts upon which the project relies were concretely defined: product, digital products, data products, product development, product management, customer experience and customer engagement. The purpose of this theoretical background was to highlight the importance of these concepts within the project's context, as well as to align all stakeholders around the topics before grasping them into a framework.

Following that, the main frameworks to develop and manage products were presented: Waterfall, Agile, Lean Startup and Design Thinking methodologies. Based on the most relevant

features of those, three sequential steps were put forward as the suggested framework to be pursued by the CBE product team.

It starts with the Problem-Solution Fit - the process to validate the existence and relevance of the problem-solution addressed. In the interest of preliminary validating the main underlying problem-solution assumptions, ensuring the need for succeeding steps, these were listed as hypotheses and tested by 23 customers and 10 brand experts interviews.

The second step is the Product-Market Fit. The match-making process between customers' needs and profile with the product characteristics, in which the business model assumptions are also turned into hypotheses, tested and validated.

The third and last step is the Product-Strategy Fit, which consists in building and outlining a set of recommended elements of the CBE product that, put together, create a personalized strategy to guide the product operations.

2.2. User Engagement and onboarding - the case of "STAYAWAY Covid and how it relates to physical spaces"

Developing a mobile application in the interest of increasing data sources to the model will highly increase the value of the final product, nevertheless, it will present several challenges to Axians. Almost intrinsic to all, lies the issue of user engagement.

To begin the chapter, relevant definitions and frameworks are analyzed to understand the importance of user engagement and how it enables companies to create long-lasting relationships with customers. Moreover, a measurement system is proposed.

Secondly, the four dimensions of the project (behavioural mapping, user comfort and carbon footprint, sentiment analysis and user experience) are explored within the scope of the application, i.e. how can pairing different types of data with the users' profiles influence customer engagement.

The case of STAYAWAY Covid is, then, studied as an example of bringing digital into the physical experience and engaging users.

Finally, the insights that thrived from conducting a survey about user engagement and people's experiences with STAYAWAY are shared and used to draw conclusions and recommendations to Axians.

2.3. Overview of innovative solutions: technology state of the art

In the first part of the document, a brief introduction to the main technological devices and processes used is presented to the reader. Here, the different approaches to Real Time Positioning Systems (that locate the user across buildings) are presented together with different software that enables Behavioral Mapping. Three different companies are evaluated with one business case each, pointing out useful features that Axians can implement in their own product.

The business cases were selected among others to better fit the future goals of Axians across different time frames. Cisco's partnership with the San Jose State University is intended to be a guide for Nova SBE's pilot.

Aruba and Inpixon, with their experiences in events and retailing, shape broader potential use cases Axians can implement and appeal to players in different industries.

Later on, the second macro section of the work focuses on Sentiment Analysis and companies offering Machine Learning as a service. Among these, Awario was analysed as the Sentiment Analysis Industry Benchmark revealing the weaknesses of available Brand Awareness platforms.

This last need drove the research towards Customer Data Platforms pointing out a broader set of tasks that Sentiment Analysis can carry out and which ones Axians should implement to develop a more effective tool.

Finally, the text presents a run-down of all the features that should be implemented in the Dashboard that Brands will be interacting with as well as different ways to segment the customers in their datasets.

3. Market Context

The major market trend found during this research was: data is dominating everything and customer analytics are at the center. McKinsey (2017) clearly states that internal and external data should be used by companies to back up each product decision. Furthermore, it should be used to drive action across the whole organization, as that is the key to satisfying customers who are increasingly demanding. Through understanding each customer's segment behavior and quantifying its economic value, decisive drivers and feedback, customer data becomes an invaluable business asset that will foster sustainable growth and success (McKinsey, 2016). This breaks down into various sub-trends that are particularly significant to the project.

3.1. Trend I: Identifying and understanding the customer's journey to optimize it

Shifting from an individual touchpoint analysis to assess the entire customer experience, end-to-end, with all its touchpoints, is vital and urgent for businesses' success. Failing to do it might mean failing to accomplish a positive overall experience with the brand (McKinsey, 2016). In an interview with Forbes, Rajat Mishra, who is a Senior Vice President and General Manager of CX Product Management at Cisco, affirms that thinking in terms of customer experience is the solution to combat all the existential risks companies will face in the future. This is achieved by anticipating and responding to the needs of the customer at different steps in the lifecycle, as well as by moving from reactive to proactive and preemptive support (Gibbons, 2019).

3.2. Trend II: Social listening as a revolutionary source of customer insights

Monitoring and analyzing a brand's mentions, conversations and feedback on social media channels, websites or search engines is a unique opportunity to access customers' views directly (Amaresan, 2018). It allows brands to identify pain points and their root-causes, to find new opportunities, but also to track competitors. It is predicted that making use of big data technologies and advanced analytical tools such as natural language processing (NLP), complex event processing (CEP) or deep learning to obtain deep market intelligence from these sources will only increase in the years to come (PwC, 2019).

3.3. Trend III: Innovative, customer-centric and personalized products and solutions

According to PwC (2019), customer-focused product development, tailoring products to customers' requirements and addressing real needs with real value, grounded on customer data, is progressively the rule for digitally advanced companies. Moreover, around 41% of all surveyed companies are already optimizing processes to ensure better designed and validated new products by using AI-based analytical tools to support strategic decisions. These companies are also expecting to expand their share of personalized products by 26%, as they understand how it will enhance both loyalty and profitability of each customer (PwC, 2019).

It is possible to conclude that the market trends in motion are privileging the release of a product like the CBE and could play an important role, now and in the near future, in the adoption of the proposed solution.

4. Policy and regulations context

4.1. European Union

Data is perceived by legislators and decision-makers at the European Union level as an essential asset for economic growth, competitiveness, innovation, job creation and societal progress. Furthermore, data collected online and exploited by technologies such as Internet of Things (IoT), Artificial Intelligence or big data analytics tools are seen as key drivers of those. It is predicted that by 2025, the value of the data economy within the 28 countries will reach €1054 billion (a 12% growth from 2020). As such, the EU has been deploying strong policy efforts in order to legally frame the data economy in the member states. The new digital strategy of the European Commission is an illustration of that. It is grounded on pillars like the European Data Strategy which was launched in February 2020 and privileges the European people and values in technology development (European Commission, 2020).

This strategy aims at creating a single market for data-based services and business models, that ensures Europe's global competitiveness and data sovereignty. That market will secure a free flow of data that respects the European privacy, data protection and competition rules while also making it fair, practical and clear to use data. It intends to increase the overall data availability in the European economy and society, while controlling those who generate the data (European Commission, 2020).

The regulation in place empowers Europeans to stay in control of their data - through the EU Charter of Fundamental Rights, EU citizens have the right to protection of their personal data. Moreover, the General Data Protection Regulation (GDPR) was an essential step to strengthen such rights in the digital age. It guarantees the highest level of protection of privacy to individuals with regard to the processing of personal data and on the free movement of that data. Also, it simplified the *modus operandi* for companies and public bodies and eliminated fragmentations across the 28 countries (European Commission, 2020).

Commonly, US privacy policies and regulations require pre-collection acknowledgements to be provided. These should inform about the company's collection, usage and disclosure practices and the choices customers have regarding their personal data. Only when consented by individuals, companies will be able to treat information. States impose a wide variety of specific requirements. Some are particularly constraining in the student and employee privacy areas, for instance, several have enacted employee social media privacy laws.

The state of California, one of the strictest in terms of collecting and processing data, has created the California Consumer Privacy Act (CCPA), a law that permits consumers to have increased control over the information companies gather about them. Under the CCPA, consumers have four fundamental rights. The right to know, to delete and to opt-out of the sale of their personal information and to non-discrimination for enjoying their CCPA rights (State of California Department of Justice, 2020).

Concerning transfers of data between countries, there are no restrictions applied to the United States with the exception of governments' data (Data Protection Laws of the World, 2020). Further, marketing communications (such as telemarketing, email marketing or text message marketing) are also regulated extensively. For example, sending marketing texts to individuals demand their expressed written approval and the text content must be carefully audited for rigorous compliance with legal requirements (Data Protection Laws of the World, 2020).

The enforcement of privacy laws and rules is carried by the Federal Trade Commission (FTC), state attorneys general or industry specific regulators, but individuals may also bring their rights of action (and class actions) for certain violations (Data Protection Laws of the World, 2020).

4.3. China

China missed data regulation and privacy protection law for a long time. While the concept of privacy protection gained traction in the US and the EU bearing national regulations, China lagged behind getting to present days with no real law protecting the citizens' privacy.

The phenomenon sparking change was the fourth Industrial Revolution and the collection of personal data on the internet. Data Breaches affect now 85% of Chinese consumers costing the Chinese economy 13 Billion dollars every year. Because of these reasons, China looked abroad for privacy regulations, with the US and EU being the most prominent examples of privacy legislations.

China first implemented an approach very similar to the US, with narrower use cases destined to specific industries. Nowadays, and until 2025, the government is converging with the EU's approach. China is drafting a comprehensive code called PIPL, Personal Data Protection Law. The government intends to have a regulation that sits, in terms of strictness, between the EU and the US (Emanuel Pernot, 2020).

The first draft, published in October 2020, enforced citizens' right to privacy with private companies (but not with the government) while also balancing it with their geopolitical and strategic stances (New America, 2020). Nevertheless, China granted vast protection from data controllers. Companies can only collect personal data related to the purposes clearly stated to the individual, even though there is only need for a light implicit consent from users.

The government also enforced a soft Data Minimization that, unlike the US, limits data processing to the only purpose stated during the collection. Sensitive data are defined (in the 2018 Specification on Cybersecurity laws) in an even broader way than EU, including data that "if disclosed can endanger the safety of persons or property".

In China's effort to regulate the Data Market, some peculiarities are not drawn either from the US or the EU. Concerning Data Localization and Cross Border Transfers, China

established the principle of Cyberspace sovereignty which enforces the subordination of data spaces to the country's values meaning that the government can exert control over Internet architecture content and data flows. In this last regard, Chinese cybersecurity laws allow personal data transfer to other countries only after a security assessment. (Emanuel Pernot, 2020)

4.4. Rest of the world

Countries around the world are approaching data regulation differently. To this day, national governments have enacted more than 1800 privacy laws around the globe. For the sake of clarity, we are giving general insights about them. Data protection laws are conceived either through sectoral laws (with the US as the most prominent country) focusing on specific industries, or omnibus laws. The latter is a corpus of laws billed to protect privacy across all industries (PwC, 2019). This principle has been adopted by most of the countries, including the EU, Canada and Australia among others (Endpoint Protector, 2020). China and India are sitting between the two approaches with different bills addressing either specific industries or focusing on consumers' rights for privacy.

The third principle that governments are considering when shaping these laws is national security: with some countries (such as India, Russia and China) requesting private companies to store their data within the national territory while discouraging (or blocking altogether) cross border transfer of data sets (PwC, 2019). This decision is determined by strategic stances and tariff regulations enforced in other sectors to limit foreign competition.

Private Companies are adapting to these changes and 52% of tech, media and telecom respondents rank data regulation policies as one of three most impactful laws to their businesses (PwC, 2020). In addition to regulation compliance, privacy is also becoming a business differentiator (FocalPoint, 2019). 72% of Americans value control over personal data and are

pushing companies to shift from traditional processes (aimed at avoiding regulatory risk) to ethical data stewardship fostering digital transformation within the organization (PwC, 2019).

5. Futureproofing a digital product - how to develop and manage digital products

5.1. Introduction to key concepts

Product

According to Kotler and Armstrong (2017), the definition of a product is "anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or need", including also intangible objects (services). Other product experts and authors like Marty Cagan or Chris Jones (2019) defended, more recently, that a product is the middle point of a triple Venn Diagram[1] between customers, business and technology.

Digital Products

A digital product is defined by Jules Ehrhardt (2016), as "a software-enabled product or service that offers some form of utility to a human being". It might include different interfaces and devices like web, mobile, wearables or virtual reality, for instance. With the internet and cloud technologies progressively dominating the market and fostering digital economies around the globe, digital products have a central role in our lives. When 2020 was declared the year of digital products, it became even more evident (Forbes, 2020).

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[1] A Venn Diagram is an illustration that uses circles to show the relationships among things or finite groups of things. Circles that overlap have a commonality while circles that do not overlap do not share those traits (Investopedia, 2020).

Data Products

As stated by The Economist (2017), data has overtaken oil as the world's most valuable resource. Moreover, in 2018 alone, data-based business models and analytics-based products generated an aggregated market volume of around €225 billion – in what is called "The Data Economy" (Velten, 2018) – Appendix I. As claimed by the same author, a data product is "an application or tool that uses data to help businesses improve their decisions and processes".

Customer Experience

This concept has been widely defined by multiple authors. Scholars like Arne De Keyser, Katherine Lemon, Philipp Klaus, and Timothy Keiningham (2015) defined it as the "comprised of the cognitive, emotional, physical, sensorial, and social elements that mark the customer's direct or indirect interaction with a (set of) market actor(s)." In a more pragmatic view, technological companies like Hubspot or Microsoft, whose analytical products significantly impact other brands' customer experiences, define it as the impression customers develop towards a brand, through the sum of interactions with various touchpoints of that brand's customer journey (Apostolou, 2019; Bordeaux, 2020).

From customer experience insights, brands are equipped to not only build customer loyalty but also to achieve gains of 5% to 10% in revenue and to reduce costs by 15% to 25% within a time frame of just 2 to 3 years (McKinsey & Company, 2016).

Customer Engagement

Bowden (2009) identified customer experience as an antecedent to customer engagement, with the latter being a direct consequence of the former, when positive. The consensus among authors is that customer engagement is the emotional and value-driven connection between customers and a brand or a product arising from their experiences with

those (Mohd-Ramly and Omar, 2017). The engagement can also be with a physical store, as it is shown that high levels of customer engagement imply strong connections between customers and the store (Islam and Rahman, 2016). According to Casey Brigilia (2020), to create customer engagement is, therefore, the process of interacting with customers to strengthen that relationship. This includes direct, indirect, online and offline actions (Apostolou, 2019).

Product Development

To develop a product is, as claimed by Product Plan's team (n.d.) - the world's leading product roadmap software -, a set of "all of the stages involved in bringing a product from concept or idea through market release". Encyclopedia.com (2020) further adds that it is the name of the process of introducing a new product (good or service) to the market, either it being a totally novel product or a new feature in an existing one. Even though it varies depending on the industry and company, both sources refer to the main steps of the process as including i) an ideation and conceptualization stage based on market needs and supported by relevant and quantifiable data; ii) a product-building stage, and iii) a test and validation stage based on the experience with a first and simpler version of the product which will result in useful iterations - with multiple field-specific middle steps in each stage. It starts with a product vision, which is followed by a product strategy and, next, a product roadmap. Once in the market, following and evolving the roadmap, the product enters the management stage.

According to Clayton Christensen (2011), professor at Harvard Business School, 95% of the 30,000 new products introduced every year fail. As such, to deliver a product that survives and succeeds in the marketplace is a challenge that requires adequate product development strategies.

Product Management

According to Adam Nash (2011), former VP of Product at LinkedIn and Dropbox, managing a product is figuring out what game a company is playing and how it keeps scoring. For Marty Cagan (2017), it is deciding what to build next, and to do so by ensuring that the features prioritized and built are valuable, usable, and feasible.

The origin of the concept, however, dates back to 1931, with Neil H. McElroy at Procter & Gamble - where the absolute responsibility for a brand was first transferred to a so-called "brand men". After this marketing-centric perspective (which is still up and running in FMCG), the product management activities moved to the tech industry and shifted focus towards product development instead of sales. The objective moved from solely understanding the customer needs to aligning the product with those. An even deeper shift happened in 2001 with the Agile Manifesto. It changed profoundly the collaborative relationships with the customer and with the engineering teams, creating a new paradigm for product management (Banfield *et al.*, 2017).

Nowadays, "good product management is becoming a sustainable competitive advantage" (Eriksson, 2015). Hence, it must be a priority in every new product at both incumbents and startups.

5.2. Futureproofing a digital product

Currently, there are several methodologies and processes one can follow to develop and manage a digital product and subsequent business with the intention of futureproofing it - enhancing the chances of its success. Some were briefly cited in the introductory concepts but different ramifications have been developed and adopted across companies and industries in the last years. The generally established fact is that, as businesses and technology evolve at a fast pace, shadowed by constantly changing and demanding customer expectations, every business

is vulnerable nowadays (Gibbons, 2019). Therefore, it remains critical that world-class products are built and that suitable product development and management processes are deployed.

The traditional so-called Waterfall product development model is characterized by rigid sequential cycles in which each cycle's output becomes the input for the next one once it is completed. The absence of early-stage customer feedback and, hence, a strong dependence on non-validated assumptions (and how hard it becomes to solve problems in previous cycles as a consequence), together with time-consuming extensive documentation and antecedent planning of every single detail were some of this model's limitations which opened up space for Agile development and management to come into the scene (Product Plan, 2019; Cantante, 2018).

Even though Agile started as a software development methodology, it quickly shifted towards a business operational and management model, in which teams operate in rapid learning and decision-making cycles. With this approach, digital businesses quickly design, build, test and refine features (Comella-Dorda *et al.*, 2016) – Appendix II. Steve Denning, author of the book "The Age of Agile", who further considers Agile as a "massive social change", defines it as "a focus on delivering value for customers, working in small teams in short cycles, and networked organizational arrangements rather than top-down bureaucracy and silos" (2018). The Agile Manifesto (2001), mentioned in the first chapter of this document (the outset and key guidelines of this movement), was centred on four values - i) individuals and interactions over processes and tools, ii) working software over comprehensive documentation, iii) customer collaboration over contract negotiation, iv) responding to change over following a plan, and twelve principles that grasped those topics more in-depth. It has been proved that it greatly drives and increases success, speed to market (reducing launch delays by 30%), quality (decrease defects in production by a factor of 3x compared to non-agile projects), motivation and productivity (by around 27%) rates in IT products and teams (Rigby *et al.,* 2016; McKinsey & Company, 2016).

However, there is no one-size-fits-all approach to adopt and execute agile in every organization. On one side, there are countless frameworks umbrellaed under Agile, broadly used, that are formal adaptations of the original strategy - like DSDM (Dynamic Systems Development Method), FDD (Feature-Driven Development), XP (Extreme Programming), Kanban or Scrum (ProductPlan, 2019). On another side, there are frameworks whose adaptations were developed in-house for the particular needs and characteristics of those companies so as to deliver great products. Examples include Amazon's Working Backwards process (Appendix III), Spotify's Think It, Build It, Ship It, Tweak It framework (Appendix IV), Typeform's Discover-Delivery two-parts framework (Appendix V) and Infinity's The Practical Product Management Framework for SaaS (Appendix VI). These are not only deeply rooted in the Agile mindset but also in subsequent movements like Lean Startup or Design Thinking.

While Lean, *per se*, is a manufacturing methodology focused on minimizing waste, pioneered by W. Edwards Deming in Japan, Lean Startup is the combination of this mindset with Agile's principles. If the latter aims at creating a product that works (optimizing product development and management), the former aims at creating a product that customers indeed want or need (adding customer development - finding, testing and growing customers - for stronger business value) (Gonsal, 2015). Officially, Lean Startup is a methodology to launch new ventures and products based primarily on favoring "experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional "big design up front" development" (Steve Blank, 2013), so the similarities and complements between both frameworks are evident. Moreover, during an interview, Richard Perez, Director at the Hasso Plattner Institute of Design Thinking at the University of Cape Town, explained that Lean Startup and Design Thinking also have a lot in common: both processes strive to take an idea to product in the fastest way possible but with the product appearing in different stages of the

innovation cycle (2017). Essentially, Design Thinking (Appendix VII) allocates more time to understanding the problem, in the discovery stage, whilst Lean Startup focuses more on building, testing and possibly pivoting a minimum-viable-product (MVP) fast.

Grounded on the common most valuable and suitable propositions of all the aforementioned methodologies, as well as on the integrated approach that combines the last three (Appendix VIII), a tailor-made combination of 3 holistic steps was designed to be the foundation of product management and development of the CBE (Customer Brand Engagement) product - the CBE Framework. The three steps, which correspond to three different types of product-fitness and are more extensively described in the next pages, are Problem-Solution Fit, Product-Market Fit and Product-Strategy Fit.

5.2.1. Problem-Solution Fit

First and foremost, CBE product development should start with the validation of the main assumptions regarding the market needs to be addressed with it - on both the problem and solution sides. Following a Problem-Solution Fit approach, those assumptions take the form of hypotheses and should be tested with the main CBE's customer segments through different experiments. The overall goal of this step is to ensure that the problems or opportunities Axians is trying to solve or meet, by launching this new product to the market, actually exist and that the solution in question has the right fit with those. This also means empathizing with brands.

With the purpose of mapping out the problems in question and attaining preliminary conclusions that would validate the need for further steps, the validation process was initiated. The critical hypothesis on both problem and solution sides and for both segments in question were defined, tested and the outcomes documented - which were the main outputs of this step.

Problem-Hypothesis:

H1) Brands do not have sufficient or sufficiently deep and actionable data sources to hear and feel their customers' feedback on the customer experience; H2) Brands do not have the means to co-create their products, services, physical or digital spaces with their customers; H3) Customers do not have a go-to-place for expressing their feedback about their customer experience with brands knowing that the brand will take it into account; H4) Customers do not have enough motivation to share their personal data and feedback about their customer experience with brands; H5) Customers feel less engaged with brands when they do not feel comfortable in their virtual or physical spaces.

Solution-Hypothesis:

H6) Brands would be interested in a one-stop-shop platform where they could get real time feedback, insights and predictive analytics about their customers, in order to: a. personalize their offers and/or their customer experience; b. co-create new products/services with them; c. properly improve their physical and digital spaces to enhance the engagement; H7) Customers would value that brands would adjust the customer experience in what regards the products, services, promotions, physical and virtual places to their needs. H8) Customers would be interested in sharing their feedback on their customer experiences with multiple brands and also non-invasive personal data if there is enough value in return for them; H9) Customers engage more with brands that provide them a great customer experience than with others.

33 interviews were performed to test the hypotheses - 23 to customers and 10 to brand experts. The customers' sample was composed of Portuguese individuals, between 20 and 35 years old, from which 87% were women and 13% were men. The brand experts' sample represented a set of different customer-interaction teams, ranging from marketing, brand management, product and customer success, and a diverse set of industries, products and

company sizes – FMCG, SaaS, insurance, communication agency and application studios. The main findings are presented next.

Customer Interviews

The categories with which customers seem to be more engaged, according to the sample, are fashion (27.1% of brands mentioned were part of this category), technology (25%), cosmetics (22.9%), food (10.42%) and home (6.25%). Other categories mentioned were entertainment, pets and digital services. Also, it appears to exist much stronger engagement with product brands than with services, as 95.6% of brands chosen were product brands. These insights should be taken into consideration when defining the target brands.

The main reasons behind the choice of a brand as a favorite one were i) the product addresses their needs, solves their problems or pleases them the most (91.3% of interviewed customers mention this reason), ii) the design of the product is considered great (39.1%), iii) personal interest in the industry (30.4%), iv) long-lasting relationship and familiarity with the brand (30.4%), v) good communication strategy of the brand (26%) and vi) brand's effort towards sustainability (21.7%). Only 17.4% refer to good customer service in-store as a reason to choose it and none of them refers to the brand spaces (physical or digital).

It was found that 56.5% of customers engage more with brands with which they have a great overall customer experience. Therefore, even though their affinity with brands does not seem linked to brand favoritism, it is definitely linked to customer engagement (validating H9). 26.1% engage more with brands they cannot still afford (aspirational motivations) and 21.7% with brands whose products solve their problems better than the alternatives (high engagement utility products).

The main channels to engage with brands are websites or apps (used by 73.9% of customers), social media (65.2%), offline stores (both the brand's stores or retailers) (30.4%),

reviews from other customers (both from public figures like digital influencers and anonym or unknown customers) (21.7%) and others, mentioned by less than 20%, like newsletters, chatbots, telephone, email, news or ads. The top 3 are already included within the product scope, which is a good indicator. These channels are used for a variety of intentions such as keeping up with the brand news (new products, promotions, limited editions) or actually purchasing the product (pointed out by more than 70% of interviewed customers). To get inspiration (17.4%) and to get more information about a product (21.7%) are the other main motivations.

When asked about which factors of their experience in the digital and physical spaces impact their comfort, engagement and affinity with a brand - and all of them listed several factors (validating H5), the customers sample was very congruent. The most impactful factor of the physical spaces, with 82.6% mentioning it, was the support provided by store staff. Decoration (56.5%), organization and cleaning (43.5%), lightning (39.1%), music (30.4%) smell (21.7%), functionality (21.7%), temperature (17.4%) and number of people in the store (17.4%) were the other impactful factors pointed out. On the digital space, 87% state that the user-friendliness of the platforms (easy, quick, intuitive) strongly impacts their experiences. Design (34.8%), information about the product (34.8%), categorization of products (17.4%) and images (17.4%) followed that factor and also seem to impact considerably the customer engagement with the brand. These factors are a valuable indication of the data types the CBE product should provide to brands, as they are the most impactful for customers.

Only 3 customers out of 23 assume that they do not share any type of feedback with brands (invalidating H4). The remaining, however, choose to do so due to a diverse set of reasons, through different channels and with different expectations in return. Also, it is important to note that, even though the majority assumes to share feedback under certain conditions, 30.4% of the interviewed customers feel their feedback will not be heard nor will make a difference.

It was possible to identify different profiles when it comes to sharing feedback and personal data (demographic and/or behavioral) with brands. Customers seem to be driven by strong feelings towards brands and experiences in order to proactively share their opinions – 21.7% only share feedback with brands they love, 26.1% only share feedback about very good or very bad experiences, 21.7% only share feedback when they have bad experiences and 8.7% only share feedback when they have good experiences. However, the main conclusion regarding customers' expectations when sharing feedback and personal data with brands is that almost 50% of the sample expects to receive some kind of compensation (a discount, a special offer or similar) in exchange and a direct consequence (through either an enhanced experience or the problem solved) - validating H8. The next more popular expectations were to optimize the customer experience (26.1%) - validating H7 -, and to receive a personalized answer/update, to be acknowledged and to help the brand to improve (all with 21.7%). Also, 17.4% said they would gladly share their personal data if it was anonymized, revealing an interesting trend.

Not all interviewed customers disclosed the channels used to share feedback in the past during the interview, but among those who did, the identified ones were: contact forms on websites (by 21.7%), feedback surveys (received through notifications or emails) and social media pages (both by 13%), email and in-person contacts (both by 8.7%) and, finally, telephone and customer reviews sites (by 4.35%). Only 2 interviewed customers stated that they did not feel they have the right place to give feedback (invalidating H3).

Brand Experts Interviews

It was possible to deduce that brands are already very conscious of the importance of customer data to succeed in today's market. All the interviewed brand experts declared that, from their experiences, brands already have various means to acquire and process data in order to obtain customer insights that they then use to improve the customer experience – invalidating

both Problem-Hypothesis (H1 and H2) for this segment. However, the weight attributed to this asset is set to increase and the trend is to include more and higher-quality customer data in the decision making process. The following insights validated H6.

The most popular data source, mentioned by 60% of the sample, was the website analytics (through owned software or software-as-a-service like Google Analytics). 50% refer to have specialized data teams within their companies. Market research (e.g. Nielsen studies), with 50% naming it, social media campaigns results and feedback surveys sent to customers, with 40%, newsletters subscriptions, with 30%, and AIMIA [2]data analytics software tool, with 20% were also frequently mentioned sources. Others with unique mentions were focus groups, customer service inquiries and co-creation events (e.g. hackathons).

80% of interviewed brand experts assume that the most relevant customer data a brand must possess in order to optimize the customer experience is demographic data and consumption patterns (previous purchases, correlations with other brands or products, or channels used to buy were some of the revealed examples). 70% of the sample finds the customer journey within the store, website or platform very relevant as well (with 30% specifically designating obstacles or problems in that customer journey as the most critical data point to get). Two other customer data types indicated were the overall opinion about the brand's value proposition and products (40%) and the average purchase value (20%).

In terms of business areas in which the customer data is applied, segmentation (target markets) and communication (messages, channels, campaigns) were the main strategies impacted - adjusted and optimized, with 90% and 80% allusions respectively. 60% of the interviewed experts also mentioned changes in the product or portfolio (iterations, co-creation

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[2] A global leader in loyalty management with a strategic partnership with Sonae Group. It uses a powerful combination of customer data from Continente's loyalty card overlaid with demographic and behavioral data to deliver unparalleled insights about these customers. Access to these insights is given through a subscription to FMCG brands selling at Continente (Aimia, 2014).

and new products development) as a key application of the data. It is also applied on improving processes, infer on market changes, predict future customer behaviors, upselling or cross-selling and personalize the customer service.

5.2.2. Product-Market Fit

Recent CB Insights studies (2019) show that 9 out of 20 reasons that explain a 70% of failure in startups are related to failing the customers - failing to listen to their feedback, to understand their needs or to deliver to their expectations (Yohn, 2019) (Appendix X). As such, after further validating the critical problem-solution hypothesis with additional interviews and, ideally, with other experiments like landing pages and A/B testing, the next step should be to achieve the Product-Market Fit. This means that a product's user experience, feature set and value proposition satisfy entirely underserved needs of the target customer (Olsen, 2015).

To measure this fit, the hypothesis corresponding to such assumptions regarding the CBE product should also be tested and validated. This includes the interest in the product's unique selling proposition, the willingness to pay the price charged and the usability, look and feel of the product design, for example. More interviews and experiments like the Wizard of Oz[3] or pitching the product to corporate partners that could benefit from it (to either pre-sell it or co-creating it with them), will help validate these product-related hypotheses to be defined and iterating CBE's characteristics to make it completely suitable to answer the market needs.

The outputs of this step should also be a set of clearly defined hypothesis, a presentation of the methods used to test them and the consequent major insights found, deployed in an iterated concept (and product, in case an MVP had been built in the previous step) closer as possible to the market needs.

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[3] Delivering a similar (simplified) product or service manually by simulating an automated process, and thus, creating the idea that the model and infrastructures are already in place (Board of Innovation, n.d.).

<u>5.2.3. Product-Strategy Fit</u>

After finding the Product-Market fit, the last step should be designing the product strategy, based on the other steps outcomes. This step should be continuous and iterated accordingly to the team and the product evolution. It should contain and actionably describe i) the target market, ii) its underserved needs addressed, iii) the product's vision, iv) positioning v) value proposition, vi) features, vii) metrics, viii) the main strategic goals, ix) the product roadmap and respective product backlogs and x) the go-to-market plan.

The target market translates into who is going to use and pay for the product. Moreover, its underserved needs are a simple version of the needs the CBE product answers for them. It is recommended to make use of *Personas[4]* when defining and visualizing them. This tool helps humanizing the decision makers behind the brands and, consequently, understand their behaviors, characteristics and goals well enough to iterate the product accordingly and to find adequate channels and messages to convert them into paying customers. It is critical that the *personas* identified remain present at all stages of the product, reminding the product managers that they should always focus on delivering for those (Interaction Design Foundation, 2020).

The product vision statement should be inspiring and should lead the strategy by setting the direction for the product management's future decisions and long-term results. It should consist of a strong reason for the product to exist, describe what it is aimed to accomplish with it and how it will fulfil its promise (Infinity, n.d.; Pichler, 2016). Its positioning should make clear how the product fits into the marketplace, particularly comparing to the alternatives, placing the product differentiation and value proposition. The latter should state the characteristics of the product that make it unique among the competitors in terms of benefits delivered to the target market (Investopedia, 2020).

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[4] The Interaction Design Foundation defines Persona is a fictional character based upon the company's research to represent the different types of product users that might use the product in similar ways (2020).

Product features are the different functionalities the product offers. Three major feature buckets are metric movers (features that directly influence business goals and product metrics), customer requests (features that customers actively ask for) and customer delight (features that are not obvious needs for customers but delight them when available), even though they are not mutual exclusive (Nash, 2009). There are numerous frameworks that can be used to prioritize features, with the most popular among product manager being MoSCoW[5] (Product Plan, 2020).

The product metrics (product key performance indicators such as usage rate or retention rate) and the strategic goals (business-oriented metrics like customer acquisition cost or average revenue per customer) are the tools used to monitor the success of the product. It is in the product roadmap that these goals are expressed, in the form of expected outcomes over the upcoming months sustained by strategic reasoning. The backlog is the list of prioritized task-level details required to execute the plan set forth in the roadmap. With their complementary roles, both help shipping a product from early strategic conceptualization to development and market release and are two critical tools for product managers (Product Plan, 2019).

Finally, as an overall product-led business, the go-to-market and growth strategies (the action plan to reach, acquire, retain and grow customers) should also be product-led. Instead of trying to move the customer from a certain point to another in the sales cycle, it allows customers to try the product before buying it (with free tiers or freemium models) and the whole team focuses on helping each customer becoming successful with the product – not on selling it. According to Kieran Flanagan, VP of Marketing at HubSpot, customers are increasingly expecting to use software and extract value from it before buying it. Therefore, products should not fall short on delivering this experience. Furthermore, this often translates into shorter sales cycles, lower customer acquisition costs and higher revenue per employee (Bush, 2019).

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[5] MoSCoW stands for Must-Have, Should-Have, Could-Have, and Won't-Have features, with the "O"s added to make the acronym more memorable (Roadmunk, n.d.).

It is strongly considered that, by following this framework, the chances of the CBE product becoming a winning product will be maximized and the product development and management processes will become agile, efficient, lean and solution-oriented.

6. Limitations and future work

Relevant limitations of the present project were i) the number of pages, which narrowed considerably the possible amount of topics covered and the level of diversity and depth each could present; ii) the lack of comprehensive technological skills within the group, which would have allowed for a better and quicker understanding of the CBE product; iii) the unanticipated Covid-19 pandemic's implications on the reduction of the timeframe available to develop the necessary work, which reduced the overall time invested by the group and would have allowed for deeper analysis and results. Moreover, each chapter revealed subject-specific limitations.

6.1. Future proofing a digital product - How to develop and manage products

The response rate to the launched open call for the customers interviews was considerably higher in the feminine gender (87%) and in the 20-35 age spectrum (100%). Furthermore, it only includes the Portuguese nationality. Therefore, as stated before, the validation process results would need more and more diverse interviews in order to be more complete and accurate. Likewise, a higher and more diverse sample of brand experts should be interviewed in order to further validate the insights found. The professionals' tight schedule for the project's timeframe and the inability to meet in-person were the main limitation behind the number of interviews.

Another limitation found was the diversified literature on the connections and overlaps between the product development and management processes and sub-processes. There is a

truly wide range of variations, from multiple authors, companies and business areas (from software development to design) whose differences, similarities and borders are blurred. This limitation was the foundation for an adjusted framework. On that account, regarding this chapter, next steps should be to follow the three steps presented. This includes the validation process tests pointed out in the respective sections, as well as the product strategy.

6.2. User Engagement and onboarding - the case of "STAYAWAY Covid and how it relates to physical spaces"

The survey conducted to assess user engagement to a brand within the physical and digital space exhibits some limitations. The first one lies in the nature of the method itself being a self-report, which, as it will be discussed in subsequent sections, presents validity problems. That is because respondents tend to exaggerate, under report, make mistakes and, at times, lie. Furthermore, our sample was not age nor nationality-representative. 90% of respondents were between 21 and 25 years old and 96% were Portuguese or Italian natives. Consequently, the results that can be inferred from the research respect the market in study and should not be generalized.

In order to overcome the latter, the future work for this project should include the production of a minimum viable product for the app and test customers' reactions to it in different markets across the world. Only by doing so, it will be possible to obtain accurate and representative feedback and conclude about user engagement to brands within the physical and digital space.

6.3. Overview of innovative solutions: technology state of the art

The first challenge of the chapter was to identify the technical challenges the CBE product has to solve. In order to give innovative insights on the competition environment we studied (with scarce success) technologies that are still in the early development phase, dedicating a lot of time on academic paper research to pinpoint disruptive technologies that are still on an embryonal phase of their development.

Due to the nature of these technologies (with most of them falling in the broader categories of IoT and Artificial Intelligence) and the business background of the writers it was risky to propose the implementation of technologies that were not fully understood, potentially with no feasible use in the project.

Because of this, the chapter mainly focuses on business cases that have already been implemented so that the focus is no longer on technologies themselves but rather on the innovative business uses. The paper thus conceived has no ambition in identifying risky and potentially profitable use cases but to guide Axians' managers in making informed decisions during the development phase.

Because of these limitations future work could focus on giving deeper insights on early prototypes to find potential disruptive technologies. Of course this would require a greater degree of knowledge in technological subjects (and probably a different background from the students).

7. Bibliography

- "2020: The Year Of Digital Products". 2020. *Forbes*. Accessed December 27. https://www.forbes.com/sites/forrester/2020/01/07/2020-the-year-of-digital-products/?sh=75fc0b7735ab.

- "9 Product Prioritization Frameworks For Product Managers". 2020. *Roadmunk.* Accessed December 27. https://roadmunk.com/guides/product-prioritization-techniques-product-managers/.

- "A European Strategy For Data - Shaping Europe's Digital Future - European Commission". 2020. *Shaping Europe's Digital Future - European Commission*. Accessed December 27. https://ec.europa.eu/digital-single-market/en/european-strategy-data.

- "Aimia launches strategic partnership with Portugal's leading retailer". 2014. *Aimia*. https://www.aimia.com/aimia-launches-strategic-partnership-with-portugals-leading-retailer/.

- "Building A Data Economy - Brochure - Shaping Europe's Digital Future - European Commission". 2020. *Shaping Europe's Digital Future - European Commission*. Accessed December 27. https://ec.europa.eu/digital-single-market/en/news/building-data-economy-brochure.

- "Data Protection In The EU". 2020. *European Commission*. Accessed December 27. https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en#fundamental-rights.

- "Design Thinking Vs The Lean Startup: Which One Should You Use?". 2017. *Ventureburn*. Accessed December 27. https://ventureburn.com/2017/03/design-thinking-vs-lean-startup-one-use/.

- "Digital Product Development 2025". 2020. *PwC*. https://www.pwc.de/de/digitale-transformation/pwc-studie-digital-product-development-2025.pdf.

- "How To Use A Venn Diagram". 2020. *Investopedia*. Accessed December 27. https://www.investopedia.com/terms/v/venn-diagram.asp.

- "Manifesto For Agile Software Development". 2001. Agilemanifesto.Org. http://agilemanifesto.org/.

- "Personas – A Simple Introduction". 2020. *The Interaction Design Foundation*. Accessed December 27. https://www.interaction-design.org/literature/article/personas-why-and-how-you-should-use-them.

- "Product Development | Encyclopedia.Com". 2020. *Encyclopedia*. Accessed December 27. https://www.encyclopedia.com/finance/encyclopedias-almanacs-transcripts-and-maps/product-development.

- "Product Managers For The Digital World". 2017. *McKinsey & Company*. Accessed December 27. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/product-managers-for-the-digital-world#.

- "Product Managers In 2020: Insights From Product Managers At The World's Leading Companies". 2020. *Product Plan*. https://assets.productplan.com/content/2020-Product-Managers-Survey-by-ProductPlan.pdf?hsCtaTracking=3a936aab-c883-4dd3-9b4a-3699d1f34eab%7C195cb319-ebbb-4b61-a187-b868397ec1d6.

- "Product Strategy | Product Management Framework". 2020. *Infinity*. Accessed December 27. https://startinfinity.com/product-management-framework/product-strategy.

- "Ship It: How Agile Product Managers Can Build Better Products". 2020. *Product Plan*. http://assets.productplan.com/content/Ship-It-How-Agile-Product-Managers-Can-Build-Better-Products-by-ProductPlan.pdf.

- "Ship It: Silicon Valley Product Managers Reveal All". 2018. *Product School*. https://assets.productschool.com/wp-content/uploads/2019/12/16143212/Ship-It-Silicon-Valley-Product-Managers-Reveal-All-2020-1.pdf.

- "Similarities Between Product Differentiation And Product Positioning". 2020. *Investopedia*. Accessed December 27. https://www.investopedia.com/ask/answers/062415/what-are-similarities-between-product-differentiation-and-product-positioning.asp.

- "The CEO Guide To Customer Experience". 2016. *McKinsey & Company*. Accessed December 27. https://www.mckinsey.com/business-functions/operations/our-insights/the-ceo-guide-to-customer-experience.

- "The Product Book: How To Become A Great Product Manager". 2017. *Product School*. https://assets.productschool.com/wp-content/uploads/2019/06/06073944/The_Product_Book_2nd_Edition.pdf.

- "The Ultimate Product Management Framework To Help You Build The Right Product". 2020. *Infinity*. Accessed December 27. https://startinfinity.com/product-management-framework.

- "The World's Most Valuable Resource Is No Longer Oil, But Data". 2017. *The Economist*. Accessed December 27. https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data.

- "Validation Guide: 24 Ways To Test Your Business Ideas". 2020. *Board Of Innovation*. Accessed December 27. https://info.boardofinnovation.com/hubfs/Validation%20Guide%20compressed.pdf.

- "What Is Product Development? Definition & Examples". 2020. *Product Plan*. Accessed December 27. https://www.productplan.com/what-is-product-development/.

- "Why Startups Fail: Top 20 Reasons L CB Insights". 2019. *CB Insights Research*. Accessed December 27. https://www.cbinsights.com/research/startup-failure-reasons-top/.

- Alison Kutler, Jay Cline 2020 "Top Policy Trends 2020: Data privacy" Accessed December 27. https://www.pwc.com/us/en/services/consulting/risk-regulatory/library/top-policy-trends/data-privacy.html

- Amaresan, Swetha. 2020. "The Ultimate Guide To Customer Engagement In 2020". *Hubspot*. Accessed December 27. https://blog.hubspot.com/service/customer-engagement-guide.

- Amaresan, Swetha. 2020. "What Is Social Listening & Why Is It Important?". *Hubspot*. Accessed December 27. https://blog.hubspot.com/service/social-listening.

- Apostolou, Dina. 2019. "Defining Customer Experience And Customer Engagement - Microsoft Dynamics 365 Blog". *Microsoft Dynamics 365 Blog*. Accessed December 27. https://cloudblogs.microsoft.com/dynamics365/no-audience/2019/10/10/defining-customer-experience-and-customer-engagement/.

- Banfield, Richard, Martin Eriksson, and Nate Walkingshaw. 2017. *Product Leadership: How Top Product Managers Launch Awesome Products And Build Successful Teams*.

- Blank, Steve. 2013. "Why The Lean Start-Up Changes Everything". *Harvard Business Review*. https://hbr.org/2013/05/why-the-lean-start-up-changes-everything.

- Bordeaux, Jason. 2020. "What Is Customer Experience? (And Why It's So Important)". *Hubspot*. Accessed December 27. https://blog.hubspot.com/service/what-is-customer-experience.

- Briglia, Casey. 2020. "Why Customer Engagement Is Important". *Gartner*. Accessed December 27. https://www.gartner.com/en/digital-markets/insights/why-customer-engagement-is-important.

- Bush, Wes. 2020. "What Is Product-Led Growth: A Definition & Why It's Taking Off?". *Product Led*. Accessed December 27. https://productled.com/product-led-growth-definition/#0-what-makes-product-led-growth-unique.

- Cagan, Marty, and Jones, Chris. 2019. *Empowered: Ordinary People, Extraordinary Products (Silicon Valley Product Group)*.

- Cagan, Marty. 2017. *Inspired: How to Create Tech Products Customers Love (Silicon Valley Product Group)*.

- California Consumer Privacy Act (CCPA). 2020. State Of California - Department Of Justice - Office Of The Attorney General. Accessed December 20. https://oag.ca.gov/privacy/ccpa.

- Cantante, Sandro. 2018. "Waterfall And Agile: Which One Is Better?". *Imaginary Cloud*. Accessed December 27. https://www.imaginarycloud.com/blog/did-agile-kill-waterfall/.

- Comella-Dorda, Santiago, Swati Lohiya, and Gerard Speksnijder. 2016. "An Operating Model For Company-Wide Agile Development". *Mckinsey & Company*. Accessed December 27. https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/an-operating-model-for-company-wide-agile-development.

- Coos Andrada. 2019. "Data Protection in Canada: All You Need to Know about PIPEDA". Accessed December 27. https://www.endpointprotector.com/blog/data-protection-in-canada-pipeda/.

- Data Protection Laws Of The World. 2020. Dlapiperdataprotection.Com. Accessed December 20. https://www.dlapiperdataprotection.com/index.html.

- De Keyser, Arne, Katherine N. Lemon, Philipp Klaus, and Timothy L. Keiningham. 2015. "A Framework For Understanding And Managing The Customer Experience". https://www.researchgate.net/profile/Arne_De_Keyser/publication/336916723_A_Fra

mework_for_Understanding_and_Managing_the_Customer_Experience/links/5dbaa5e7a6fdcc2128f0e606/A-Framework-for-Understanding-and-Managing-the-Customer-Experience.pdf.

- Ehrhardt, Jules. 2016. "State Of The Digital Nation 2016". *Medium*. Accessed December 27. https://medium.com/fktry/state-of-the-digital-nation-7a18ca851076.

- Eriksson, Martin. 2015. "The History And Evolution Of Product Management". *Mind The Product*. Accessed December 27. https://www.mindtheproduct.com/history-evolution-product-management/.

- Focal Point Insights. 2020. 9 Privacy Trends to Watch in 2020. Accessed December 27. https://blog.focal-point.com/9-data-privacy-trends-to-watch-in-2020

- Gibbons, Serenity. 2019. "Why You Need To Future-Proof Your Business - And How To Do It". *Forbes*. Accessed December 27. https://www.forbes.com/sites/serenitygibbons/2019/01/29/why-you-need-to-future-proof-your-business-and-how-to-do-it/?sh=5138b74f1091.

- Gonsal, Jehan. 2015. "The Difference Between Agile, Lean And Lean Startup". *Linkedin*. Accessed December 27. https://www.linkedin.com/pulse/difference-between-agile-lean-startup-jehan-gonsal.

- Islam, Jamid, and Zillur Rahman. 2016. "Examining The Effects Of Brand Love And Brand Image On Customer Engagement: An Empirical Study Of Fashion Apparel Brands". https://www.researchgate.net/publication/283084381_Examining_the_effects_of_brand_love_and_brand_image_on_customer_engagement_An_empirical_study_of_fashion_apparel_brands.

- Kotler, Philip, and Gary Armstrong. 2017. *Principles of Marketing*. 17th ed.

- Mohd-Ramly, Suhaily, and Omar, Nor Asiah. 2017. "Exploring the influence of store attributes on customer experience and customer engagement". *International Journal of Retail & Distribution Management*. https://doi.org/10.1108/IJRDM-04-2016-0049

- Nash, Adam. 2009. "Guide To Product Planning: Three Feature Buckets". *Psychohistory*. Accessed December 27. https://adamnash.blog/2009/07/22/guide-to-product-planning-three-feature-buckets/.

- Nash, Adam. 2011. "Be A Great Product Leader". *Psychohistory*. Accessed December 27. https://adamnash.blog/2011/12/16/be-a-great-product-leader/.

- Nobel, Carmen. 2011. "Clay Christensen'S Milkshake Marketing". *HBS Working Knowledge*. Accessed December 27. https://hbswk.hbs.edu/item/clay-christensens-milkshake-marketing.

- Olsen, Dan. 2015. *The Lean Product Playbook: How To Innovate With Minimum Viable Products And Rapid Customer Feedback*.

- Pernot-Leplay, Emmanuel. 2020. "Data Privacy Law in China: comparison with the EU and U.S. Approaches" Accessed December 27. https://pernot-leplay.com/data-privacy-law-china-comparison-europe-usa/#Requirements_for_Data_Collection_and_Processing

- Pichler, Roman. 2016. *Strategize: Product Strategy And Product Roadmap Practices For The Digital Age*.

- Ramanujam, Madhavan, and Georg Tacke. 2016. "In Product Development, Let Your Customers Define Perfection". *Harvard Business Review*. https://hbr.org/2016/05/in-product-development-let-your-customers-define-perfection.

- Rigby, Darrell K., Jeff Sutherland, and Hirotaka Takeuchi. 2016. "Embracing Agile". *Harvard Business Review*. https://hbr.org/2016/05/embracing-agile.

- Rogier Creemers, Mingli Shi, Lauren Dudley, and Graham Webster. 2020 "China's Draft 'Personal Information Protection Law'". Accessed December 27. https://www.newamerica.org/cybersecurity-initiative/digichina/blog/chinas-draft-personal-information-protection-law-full-translation/

- Spadea Michael, Reinke Matthew. 2019 "Global Trends in Privacy". Accessed December 27. https://chapters.theiia.org/puget-sound/Documents/Global%20Trends%20in%20Privacy%20April%20IIA%20Luncheon.pdf

- Velten, Carlo. 2018. "Turn Data Into Products". *Tableau*. Accessed December 27. https://www.tableau.com/sites/default/files/whitepapers/051018_strategiepapier-tableau_turn_data_into_products_final_full_engl_final.pdf.

- Yohn, Denise. 2019. "Why Startups Fail". *Forbes*. Accessed December 27. https://www.forbes.com/sites/deniselyohn/2019/05/01/why-start-ups-fail/?sh=32849fa728a5.

8. Appendixes

Appendix I – The Data Economy (© crisp research AG)

// The Data Economy - Global Market for Analytics Services & Data Products

Market Segment	Product, Services, Solutions	Volume 2018
"Analytics Services & Data Products"	Connected Building / Smart Home Industrial Internet / Industry 4.0 Smart Grid / Smart Energy Connected Car Healthcare / Consumer Lifestyle Multi-Channel Retail / Hospitality Public Safety / Security	225,2 bn €
"Big Data IT Infrastructure"	Consulting & Integration Services Software IT Hardware & Infrastructure	7,55 bn €
"Internet of Things"	Networks / Connectivity Sensors / Endpoints	2,56 bn €

// Source: © crisp research AG, 2018

Appendix II – Agile and Waterfall (officialconsumerreport.com)

Agile

Agile Development
1) Requirements
2) Plan
3) Design
4) Develop
5) Release
6) Track & Monitor

- Continuous cycles
- Small, high-functioning, collaborative teams
- Multiple methodologies
- Flexible/continuous evolution
- Customer involvement

Waterfall

Requirements → Design → Implementation → Verification → Maintenance

- Sequential/linear stages
- Upfront planning and in-depth documentation
- Contract negotiation
- Best for simple, unchanging projects
- Close project manager involvement

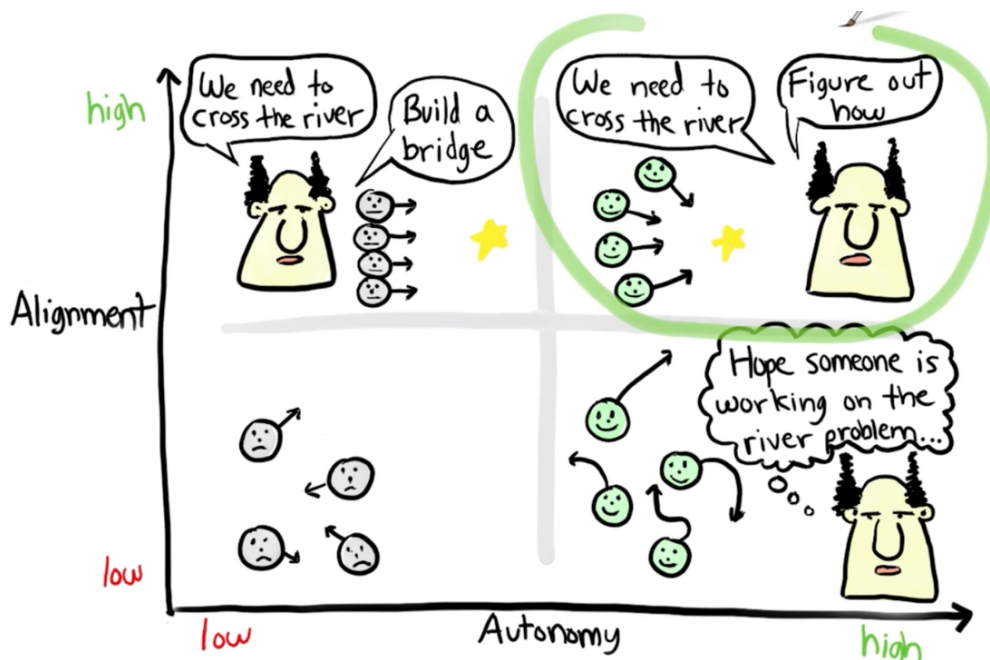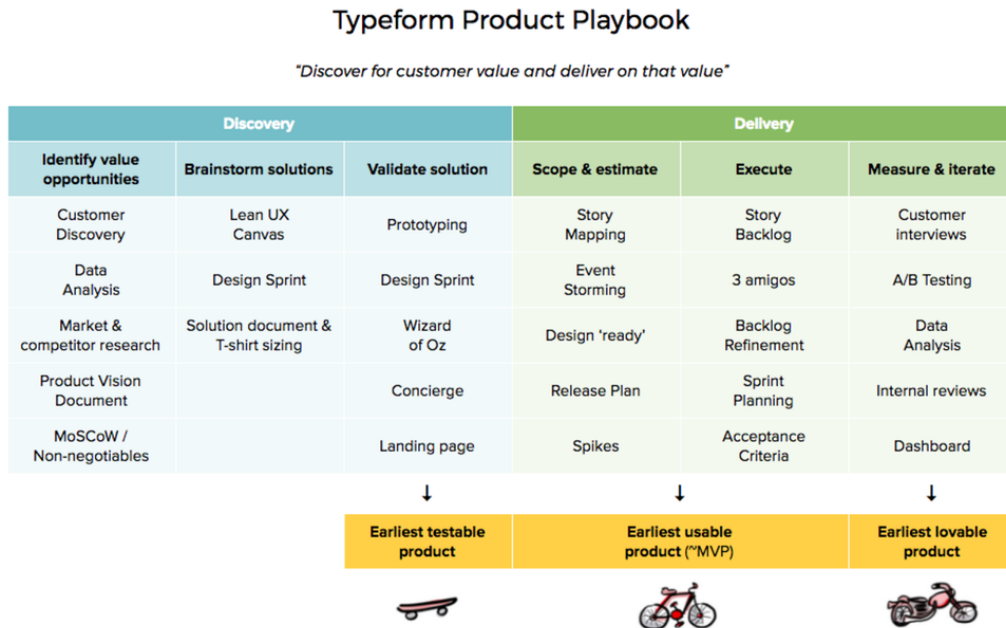**Appendix III –** Working Backwards (the Amazon method) (Product Plan)

Appendix IV – Spotify's Think It, Build It, Ship It, Tweak It framework (Spotify)

**Appendix V – Typeform Product Playbook (Typeform)**

Typeform Product Playbook

"Discover for customer value and deliver on that value"

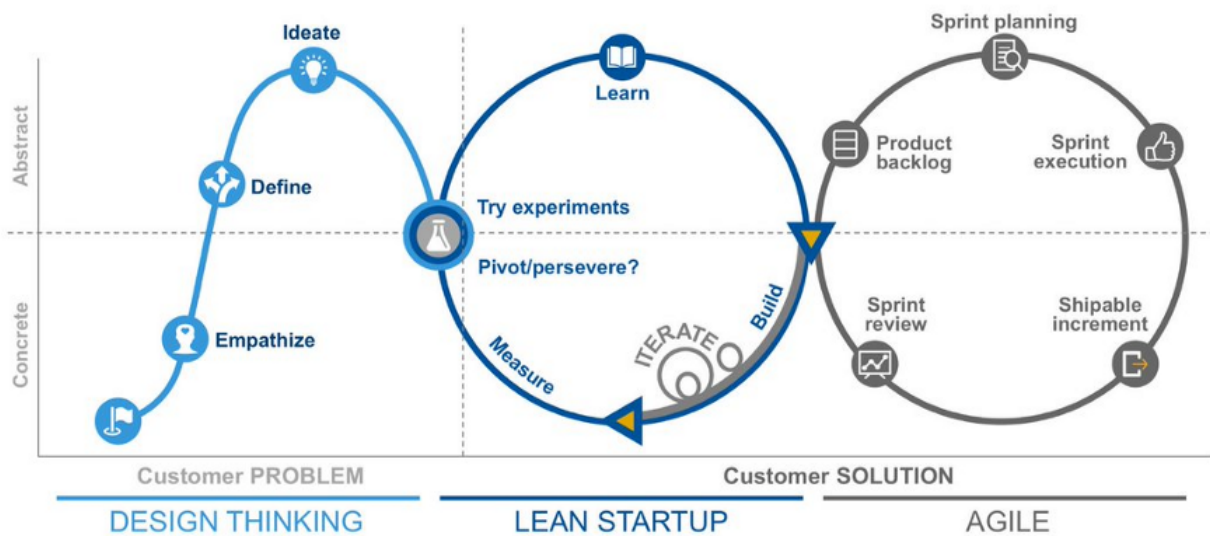| Discovery			Delivery		
Identify value opportunities	**Brainstorm solutions**	**Validate solution**	**Scope & estimate**	**Execute**	**Measure & iterate**
Customer Discovery	Lean UX Canvas	Prototyping	Story Mapping	Story Backlog	Customer interviews
Data Analysis	Design Sprint	Design Sprint	Event Storming	3 amigos	A/B Testing
Market & competitor research	Solution document & T-shirt sizing	Wizard of Oz	Design 'ready'	Backlog Refinement	Data Analysis
Product Vision Document		Concierge	Release Plan	Sprint Planning	Internal reviews
MoSCoW / Non-negotiables		Landing page	Spikes	Acceptance Criteria	Dashboard
		↓	↓		↓
		Earliest testable product	**Earliest usable product (~MVP)**		**Earliest lovable product**

Appendix VI – The Practical Product Management Framework For SaaS (Infinity)

Appendix VII – Design Thinking: A 5 Stage Process (Interaction Design Foundation)
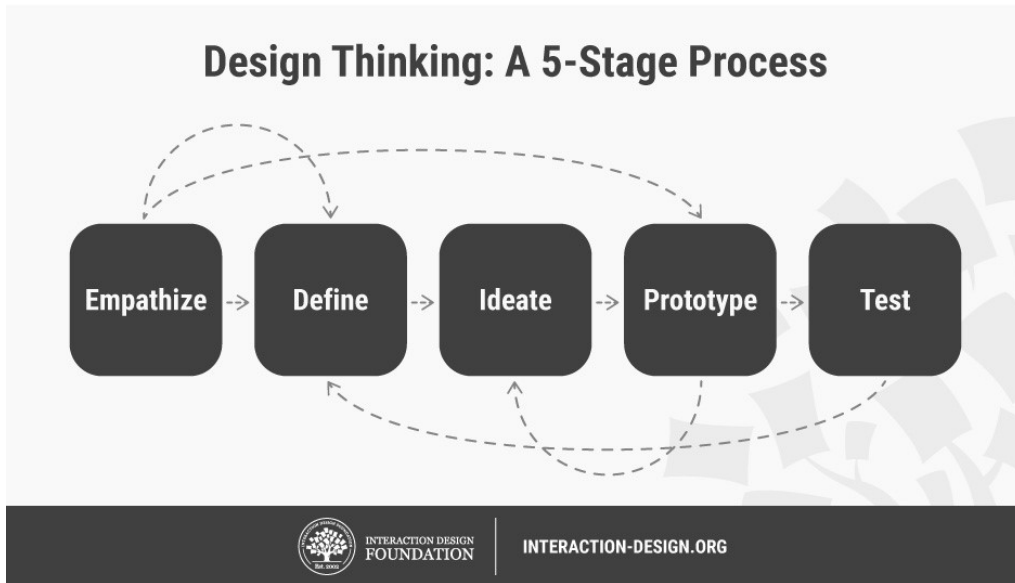
Appendix VIII – Combining Design Thinking, Lean Startup and Agile (Gartner)

Appendix IX – Top 20 Reasons Startups Fail (CB Insights)

BASED ON ANALYSIS OF 101 STARTUP POSTMORTEMS
Top 20 Reasons Startups Fail

Reason	Percentage
NO MARKET NEED	42%
RAN OUT OF CASH	29%
NOT THE RIGHT TEAM	23%
GET OUTCOMPETED	19%
PRICING / COST ISSUES	18%
USER UN-FRIENDLY PRODUCT	17%
PRODUCT WITHOUT A BUSINESS MODEL	17%
POOR MARKETING	14%
IGNORE CUSTOMERS	14%
PRODUCT MISTIMED	13%
LOSE FOCUS	13%
DISHARMONY AMONG TEAM / INVESTORS	13%
PIVOT GONE BAD	10%
LACK PASSION	9%
FAILED GEOGRAPHICAL EXPANSION	9%
NO FINANCING / INVESTOR INTEREST	8%
LEGAL CHALLENGES	8%
DIDN'T USE NETWORK	8%
BURN OUT	8%
FAILURE TO PIVOT	7%

CBINSIGHTS