

A Work Project, presented as part of the requirements for the Award of a Master's Degree in Management from the NOVA – School of Business and Economics

FIELD LAB:

DIGITAL SPACES / AXIANS “CUSTOMER BRAND ENGAGEMENT” PROJECT:
Operational Business Model

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Abstract

Driven by the rise of technology the physical world becomes increasingly connected to the digital world. As a result, vast amounts of data from sensorial measurements are available waiting to be fully utilized. The “Customer Brand Engagement” project of Axians, the field lab partner, aims to create a system for the measurement of engagement. Understanding the customer on the inside through data from the outside, will lead to a deeper customer knowledge, which enables forming long lasting and meaningful connections between customers and brands. The available opportunities of such analytics technologies are being examined in the report.

Keywords: Customer Engagement, Smart Environments, Sensing Spaces, Analytics

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“How can we measure from outside something that is felt inside?” (Rui Calmão, Director at Axians, 2020).

1. Introduction

As in any interaction, the whole scope of interaction between customers and brands is never just explicit. Customers feel and think certain things when engaging with a brand, wherever and whenever it is taking place. While the online and offline world are increasingly intertwining, new technologies appear with the aim to capture more information through data. Aided by the rise of mobile technologies, more and more technologies find their way seamlessly into people’s lives. With 86 percent of its population being subscribed to a mobile service, Europe tops all other regions (GSMA 2017). Furthermore, more than three quarters of the connections come from smartphones (GSMA n.d.). As the 5G technology is now on the brink of becoming the new network standard, the spread of the Internet of Things is accelerating. IDC (2019) predicts 41,6 billion connected devices or “things” to be connected by the year 2025, which will generate 79,4 zettabytes (ZB) of data. On top of that, global spending on information communication technology (ICT) is expected to reach almost 6 trillion dollars by the end of 2023, a 25% increase in just 5 years (Holst 2020) (Appendix 1). Sensing technologies will connect the physical world further with the digital data world.

This abundance of data creates a chance for companies to develop solutions, that help to understand people from the inside by utilizing the available data. A deeper knowledge enables one to predict possible responses, in order to evaluate options and lastly to undertake measurable actions. These analytical technologies can pave the way for building and encouraging greater levels of engagement.

2. Axians

1. The Company

As part of the French concessions and construction company VINCI S.A., Axians is located within the technology arm of the group, VINCI Energies. Axians acts as the ICT brand that specializes in digital transformation and, due to its history of 20 years, the company is experienced in disruptive processes. Its core business is technology, where they cover the whole lifecycle of data through their expertise domains: Telecoms Infrastructure, Cloud & Data Center Infrastructures, Enterprise Networks, Digital Workspace, Data Analytics and Cyber Security. Through their vast expertise, Axians caters to all sectors and aims to be a one-stop shop for customers who are striving for digital transformation. With the client in mind, Axians adjusts its solutions to their needs, in order to provide them with the ideal service experience.

2. Project “Customer Brand Engagement”

Project Idea

Aware of the changing circumstances in the physical world driven by digital transformation, Axians’ research and development came up with a project idea of sensing physical space. As Rui Calmão, board member of Axians, explained in the initial meeting call, the overarching question behind the process is: “If it’s felt inside, how can it be measured from outside?” Like “Google Analytics in the real world”, Axians wants to be able to understand the impact of people’s interaction with brands. Consequently, the R&D project “Customer Brand Engagement” was launched with the goal to measure this engagement via data derived from sensors and other data sources.

Project Status

The project is still in a research & development stage, with intentions to roll out first prototypes in the upcoming half year. Due to its early stage, there is no clear product yet, and research is still broad. The productization of the findings will happen at a later stage of the project.

3. Challenge for the Field Lab

Axians partnered with Nova SBE to enrich and complement their own research of the project by leveraging the managerial expertise of current business students. The challenge is tackled by two Field Lab teams and one PhD researcher to dive deep into multiple aspects associated with the project.

3. Customer Brand Engagement

1. Explaining Customer Engagement

The term customer engagement (CE) is not universally defined and differs in detail due to different points of views. However, they share a common core, which is explained in the following two defintory approaches.

Clarabridge (n.d.) defines CE as the “emotional connection between a customer and a brand”, adding that customers with higher engagement tend to purchase and promote more, as well as show increasing loyalty. Hence, it is crucial to provide a superb customer experience, which should be at the core of a company’s customer engagement strategy. Hollebeek (2011) defines CE as the “level of a customer’s cognitive, emotional and behavioural investment in specific brand interactions.” This definition suggests three CE elements: immersion (cognitive), passion (emotional) and activation (behavioural). No matter the exact definition, customer engagement proves to be a vital goal for businesses. As Gallup (n.d.) concluded through their research, customers with high engagement represent a 23% increase in “profitability, revenue, and relationship growth over the average customer.”

2. How CE Was Measured Previously in the Physical Space

Holbrook and Hirschman (1982) were the first to identify the experiential dimension of customer behaviour. Since then, the Retail Industry, for instance, has pursued human observation as a key instrument in order to understand and formulate basic behavioural analysis (Bell et al. 2018). Nonetheless, it is necessary to stress the fact that human observation is not as reliable nor as fast as machine sensing

analysis (RetailNext 2014). The latter grants indeed multiple advantages such as the easiness in collecting a vast number of data, and the unbiased observation of people, which reduces drastically the margin of error.

The Example of Retailers

Contrary to the brick-and-mortar retailers, online retailers face a situation of “retail heaven” because they can easily gather vast amounts of detailed customer data on the web (Renno n.d.). Not only because they can track what was bought and at what time, but are also able to enrich the purchase event with data such as location of the shopper or the device used. Tools track how much time was spent on the web page, where it was spent and what other articles were looked at. The associated IP address and cookies make it possible to address the customer with relevant information such as deals or suggested products via website ads or the email connected to the shopper account. It creates a dual purpose of easing and enhancing the shopping experience of the customer on the one hand, but also creates greater chances for the business to engage the customer in further purchases in future on the other hand. While current in-store designs of brick-and-mortar retailers focus on customer experience, they perform poorly in the shoppers’ perception. Just 32% of shoppers are visiting stores because they like the general in-store experience (WBR Insights 2018). For instance, just 16% of surveyed senior-level retail executives of a study by RIS and Gartner (2018) responded that their stores have up-to-date capabilities for shopper-tracking or location-based sensing for marketing. As a result, the availability level of customer information is comparatively low with just 78% of retailers being able to identify customers before checkout and, what is more, 15% of retailers cannot identify them at all (Retail Consulting Partners 2020) (Appendix 2). Without the ability to gain information on the customer in an early phase of the journey it is not possible to

influence the decision making in an informed way. Consequently, vital engagement opportunities remain untapped.

Before the data advent, retailers relied mostly only on antiquate methods of analysis, such as point-of-sales (POS) or traffic counters, to grasp information on customers. Collecting all these data manually was a costly and time-consuming process. It was hard for retailers to keep up with inconstant flows of customers and changes in shopping behaviour. Thus, the results were often non-scalable, with erroneous analysis and very limited (RetailNext 2014). However, retailers are grasping the significance of the technological trends for their business and are planning to act on it. German retailers, in a 2019 study, were asked to name the technological trends of the upcoming years, which are most important to them. They were ranked as follows: Artificial Intelligence (75%), Cloud (41%), Omnichannel (31%), Analytics (31%), Internet of Things (31%) and Mobile Communication (25%) (EHI Retail Institute 2019). The recognized importance is also reflected in the impact retailers believe that technology will have on enhancing the instore experience (61%), and the importance of providing personalized offers (44%) (WBR Insights 2018).

While retailers, especially pure brick-and-mortar players, might be the most obvious ones in need of deeper customer insight gathered in the physical space, they are not the only ones. Multiple other entities acting in the physical space are also facing a knowledge gap and can profit from advanced insights in order to foster better interactions and operations, for instance, educational facilities or airports.

3. How CE Can Be Measured in the Future – the Advance of Tech

Sensors are the first step to getting information about consumer behaviour, sentiment, comfort, experience, and overall engagement. Such a degree of innovation itself creates a huge number of real-time insights able to boost real-time actions and strategies to improve engagement. From

location and wayfinding services to guide and follow people, even to tracking systems for equipment, they provide a strong incentive to closer interact with customers and visitors.

However, these technologies will not be the end result of a strong evolutionary impetus. As many companies are already finding and realizing their competitive assets, digital twins become the main tool through which information obtained from sensors is displayed. Being the digital copy of the physical systems, this technology enhances administrations to monitor, analyse and act on real-time based information for a prompt and effective response to changes or improvements in a certain environment.

Real-time data integration and real-time machine learning are fundamental to create a bridge between the physical and virtual dimensions. The former, based on edge computing, can boost automatic responses to stimuli almost instantaneously, without ever be stored inside an accessible memory space. The latter drives decision making processes based on data processing on real-time streams and on historic data (Kienzler 2019).

Within customer engagement, the presence of a digital twin represents an advantage not only for the possibility of tracking of physical assets and their proper functioning. People equipped with a device and a profile on social media also become part of the system. Thanks to the high elasticity of this kind of platform, it is possible to implement a wide variety of functionalities: from services capable of understanding people's movements to sentiment analysis interfaces. Having therefore an extensive vision of the internal system, any available mean or resource can be deployed to act and affect visitor's mood and behaviour.

In the long term, they allow the understanding of social and behavioural dynamics, analysing their change over time and predicting future trends. In fact, the adoption of digital twins enables administrations to predict multiple scenarios more efficiently and to analyse all the components that entail a change in strategy. By connecting all the activities, assets, and consumers of a network, it is possible, for example, to establish a *modus operandi* in the event of a much

stronger inflow than expected, or to mobilize resources to respond immediately to an emergency.

Another very impactful advantage of digital twins is certainly the higher quality of visualization and manageability of data and scenarios. Through different levels, the administrations are able to navigate through the structure passing to more and more specific levels of analysis. For example, starting from the analysis of the entire building, then to the single floor and finally to a single department (Lazotti 2020).

One of the most developed examples today is the implementation of the virtual city of Singapore. Thanks to 3D models scanning and digital twin facilitators, such as IoT sensors and virtual reality, the city was able to recreate a perfect copy in the virtual dimension (Liceras 2019).

During the research of this paper, it was not possible to identify an industry standard nor provider of such a solution. The market appears to have multiple single solutions, but no holistic one, meaning that it is of the utmost importance to create analytics with a rich set of data. These solutions, which are dependent on the available data sources, range from basic heatmaps to online-to-offline attribution of customer knowledge. No matter of the configuration of the analytics solution, customer analytics enabled by digital technologies will enable businesses to take action based on the provided insights.

The Example of Retailers

With the introduction of more and more digital devices and the growing amount of data generated, a chance for a new way of gaining customer insight was created but is still yet to be captured. Websites have been using data analytics since the mid-1990s, when brick-and-mortar stores did not have the technology to do so (Groenfeldt 2012). While most early solutions dealt with metrics such as footfall, newer solutions include more variables to create a more holistic customer image. However, analytics on the customer's emotional and engagement level with

brands are still few up to today. Proof of that is there is only one company – Sensing Feeling – that tracks emotional customer response through image - listed in the “Retail In-Store Analytics Guidebook” by Postscapes (2019).

Understanding the consumers path to purchase, will enable retailers to validate what fixtures, displays, and products are capturing the most exposure and engagement. Changes in engagement due to alternations of layout, design, pricing, or messaging can be captured. Through evaluation of the recorded changes, retailers will be able to identify the most successful strategies to drive exposure, engagement, and ultimately revenue (RetailNext 2014). Whereas retailers had a multi-channel view with the online and offline channel competing, they are adapting an omni-channel view, in which channels complement each other, which is closer to the consumer’s needs (Verdict and British Land 2016). The offline world and the digital one are increasingly blending and therefore influencing each other. A consumer might visit a store to get a feel for a product, but then order it online in a colour which is currently out-of-stock in the store as an example. Everything taken into account, it is imperative to analyse the physical space in order to act on those insights to create greater customer satisfaction, but also to understand the customer in his/her omni-channel behaviour. Besides just driving footfall and helping to convert in-store sales, retailers are aiming at enhancing the customer engagement through leveraging mobile technologies. Findings of WBR Insights’ (2018) Future Stores-Study indicated 63% of retailers expect to enhance the in-store shopping experience, 56% the ability to provide personalized offers, 43% driving customer loyalty and retention, 42% closing the gap between online and in-store customer experiences and 33% advantages in brand promotion. As an additional side effect, technology and data analytics have the potential detect fraudulent activities and theft (James et al. 2013) as well as upgraded business processes in general beyond the point of mere customer experience, leading to improved operations.

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FIELD LAB: DIGITAL SPACES / AXIANS

BUSINESS MODEL

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1. Introduction

Axians’ core business is technology; the company focuses on six expertise domains covering the whole lifecycle of Data (Appendix 1). This project belongs to the Data Analytics domain and reflects the intentions of Axians to exploit and understand Data in order to reduce the gap in customer experience between consumers and brand (Calmão, 2020). The overall strategy that has been shaped from internal and external context; fosters greater proximity and focus on the customer’s influence, decision center for digital transformation. Moreover, the objective to prioritize Axians XaaS offers, adoption consumption, and recurrent models. Expand and leverage on platforms for full lifecycle service. Investing in Cloud & DC Transformation, Data & AI, Customer Engagement & Low Code Platforms (Axians, 2020).

2. Objective of the Work Project

Elaborate and deep dive into the expectations of Axians “Brand Engagement” project in regard to the field-lab; the objective is to offer an in-depth analysis of a Business Model to the reader. The report will analyze a cruising business model of Axians, already running and stable, in order to eliminate a degree of uncertainties and hurdles typical of a Business Model which has to implement yet new technologies or disruptive business approaches. Therefore, it is necessary to stress the fact that that the model will rely on assumptions and hypothesis.

The paper will frame a broad and general business model canvas to ensure flexibility and adaptability for future approaches, the canvas and will give particular relevance on the blocks Axians expressed its interests within the call of action. This paper does not aim at providing a set of universally applicable recommendations.

3. Methodology

3.1. How to design a winning business model?

The effectiveness of a Business Model relies upon its structure and should meet three points:

1. *It is aligned with the Organization's goals.*

The decision-making process when elaborating the business model should reflect the intentions of the organizations to pursue their objectives. It may sound redundant, though there are a consistent number of counterexamples. Xerox Parc, a new segment of Xerox, in 1970 disrupted the market with its innovative technologies: Ethernet or laser printing; nevertheless, Xerox Parc could not capture value from its innovations either develop new businesses due to the miscoordination and conflict with Xerox's general goals. (Mui, 2012)

2. *It is self-reinforcing.*

The decisions made in the business model creation must have a complementary relation. It is indeed necessary for the success of the organization to have internal consistency and avoid conflicts within the model. (Teece, 2010)

3. *It is resilient.*

The Organization's business model must be resilient and effective over time; indeed, it has to fend-off three threats (Ghemawat, 2014).

The Replication: understand if competitors can reproduce the business model; Hold-up it is necessary to predict if any of the stakeholders or other players could encapsulate the value the organizations offer by twisting their bargaining power, and finally the substitution threat: can new technologies decrease or disrupt the value of the service the organization offers? Although the lifespan of companies has decreased in the last decade (Garelli, 2016) the resilience has still a significant role in the success of the business model.

3.2. Potential interviews, surveys, and research

The following report has been written with conducted literature review from scientific papers, statistics, opinion leaders' sector, and best practice benchmarking. Additionally, it will quote and refer to the insights provided from the interviews with the two following professionals: Jacobo Rey (Senior Retail Expert EMEA, RetailNext), and Iacopo Carrera (CEO and managing director, Thinkinside). December 2020.

4. Scope of Analysis

In order to proceed with the Axians report, it is necessary to identify the role of emotions and feelings within Customer Brand Engagement and which are the difference that characterize them. *Emotion* could be defined as the lower layer of response of the subcortical region of the brain (Salzaman, and Fusi, 2012). Emotions have a significant role with conscious thought, reasoning and decision making, and it is possible to detect it with behavioral mapping, eye scanning, skin conductance, brain activity, heart-beat and facial tracking.

Feelings could be defined as the conscious experience of emotional reactions (Brown, 2017).

Measuring and tracking feeling it is much more complex and there is not yet a defined path.

The role of the emotions and feeling in the customer journey is essential, studies affirms indeed that brand perception is mostly based on emotions and personal feelings rather than information's (Eshelby, 2019).

5. Best practice benchmark

The benchmark of the best practices is helpful to get a broader perspective of the competitors that are leading the market. The key players operating in the global big data analytics in the market are Alteryx Inc., IBM, Microsoft, MicroStrategy Inc., Google, Oracle Corporation, Qlik Technologies Inc., Retail Next, SAP SE, SAS Institute, and Teradata (Market and research, 2020).

The research scope was to identify an established competitor and a successful start-up. Among the targeted companies, the identified ones were: RetailNext (San Jose, CA.) considered to be “a worldwide market leader and expert in retail analytics for brick-and-mortar retail” (RetailNext, 2013). The company uses ultimate AI technologies implementing tracking and counting sensors and operates in multiple industries from Retail, Telco, Healthcare, smart facilities, and buildings (RetailNext, 2013).

ThinkInside, Italian start-up that operates utilizing location intelligence for indoor spaces. ThinkInside mission is to drive a physical space smart, a space in which the movement of people is tracked in real-time, analyzed, transformed into effective key performance indicators. The company suggests interventions able to optimize the efficiency of processes and enhance customer experience, operates in Retail and Industry 4.0, and had projects in United States, Japan, Canada, and Europe. (ThinkInside, 2019).

6. The Business model canvas

Among the various instruments used to understand and shape the business model of a company the business model canvas has been chosen for several reasons: The Canvas is well-known among managers and professionals (Massa et al., 2017), and it is as well, widely recognized among researchers. The business model canvas is a tool which can help organizations to elaborate structured, effective, and strategic vision of new businesses extensively. (Osterwalder & Pigneur, 2010). The order of the Canvas sections in the paper will follow the Osterwalder & Pigneur order. The relevance and the space dedicated to each block of the canvas will vary and will be elaborated according to the degree of interests expressed by Axians. As mentioned in the “Objectives of the work project” (Paragraph 2), the Business model Canvas will frame a general scenario in which Axians operates and offers its value proposition to a broad set of customer segments in order to describe to the reader a broad spectrum of opportunities.

Business Model Canvas



Key Partners <ul style="list-style-type: none"> • AWS • Cisco • DELL EMC • HPE • IBM • Juniper • Microsoft • SAP • VMWARE • Service One Alliance 	Key Activities <ul style="list-style-type: none"> • Software Development • DevOps Activity • Network Activity • Data Collection • Behavioural Mapping • Sentiment Analysis • User Comfort & Digital • Footprint Analysis 	Value Propositions <ul style="list-style-type: none"> • Become the global partner for digital transformations • Identify drivers of customers' brand engagement • Increase sales • Higher shopper engagement • Build customer loyalty • Optimize marketing spend • Reduce capital expenditures • Make data-driven decisions • Improve overall store performance 	Customer Relationships <ul style="list-style-type: none"> • Interaction with Customers through Web Services • Sales & Supports Teams • Advertisers & Network Partners • Personal Assistance • Subscription Engagement 	Customer Segments <ul style="list-style-type: none"> • Retail <ul style="list-style-type: none"> ✓ Shopping malls ✓ Retail stores ✓ Supermarkets • Hospitality • Health Care • Stadiums • Cities • Universities • Airports • Casinos • Fairs • Theme parks
Cost Structure <ul style="list-style-type: none"> • R&D Costs • Cloud Enterprise • Data Centre & IT Infrastructures • Marketing Costs • Human Resources 		Revenue Streams <ul style="list-style-type: none"> • Recurring Model • Subscription • Usage Fee • Pay-per-use • Premium • Freemium • Hybrid 		

6.1. Customer segment

The customer segments block describes the different industries Axians is aiming to reach. Given the intent of Axians of operating both nationally and internationally the paper will explore the market accordingly. The customers are the core of each business as it would not survive without them (Osterwalder & Pigneur, 2010). The most flourishing analytics markets are in order of relevance: North America, United States and Canada and in Europe with United Kingdom, Germany and France and rest of Europe (AlliedMarketResearch, 2019).

The Segmented model is suggested for Axians, and differentiates the customer segments with moderate different needs and impact over the BM for instance a difference in profitability or different types of relationship (Rey, 2020).

In this report the Customer Segments will be presented in accordingly the Market relevance for Axians.

Retail Segment: The global retail analytics in terms of market size is expected to grow from 4.3 billion USD to 11.1 billion USD by 2025, at a CAGR of 21.2% (ReserachandMarket, 2019). The brick-and-mortar sector, in order to counter the booming of e-commerce has desperate need of understanding how to improve its customer service and enhance the shopping experience. It follows that given its size demand growth it could be considered the most appealing segment for Axians (Research and Markets, 2019). Moreover, the Covid-19 it is expected to have a significant impact over the demand in analytics from the retailers (Fortune, 2020). The rise in demand for predictive analytics in retail are expected to generate future opportunities in the retail segment (Appendix, 2).

Within the retail industry shopping Malls for Axians are a crucial segment not only for the vast number of visitor and variety of brand offers, but for the relevance of the customer engagement within the shopper journey (Vindel, 2017), Retail Stores; retailers are at the core of the customers for Axians. In Portugal there are 256 big retailers (Retail-Index 2019). Supermarkets: more and more it is possible to derive data from the shopper journey within the supermarket and understand and forecast trends in products and customer perception of brands (Carrera, 2020).

Airports: Crucial customer segment given the presence of Axians in Vinci airport. It is important although to stress the fact that the customer journey within airports is different and more complex to evaluate compared to Retail (Maechler, Neher, and Park, 2016). Tracking the flow of people across the airport from the security check till the departure it is decisive for a positive experience and efficiency of all the processes (Carrera, 2020).

Museum and library: non-profit organizations, in terms of profit generation not the most appealing segment, but definitely sensible to Axians value proposition given the crucial role of customer experience within those structures (Rey, 2020).

Hospitals: The customer journey within healthcare industry has many similarities with retail, both are customer focused and value the customer experience, factors such as waiting times, quality of service, treatment fee, and the patients turnover according Bain & Company could drastically increase the profits of the hospital.

Casinos: customer segment which values extremely the customer experience (Forbes, 2019) and therefore might have a strong interest in Axians value proposition.

Other interesting segments were identified via research and interviews with competitors such as: Fairs, smart buildings and theme parks, unfortunately given the space constraints of the report it is not possible to provide further information's.

6.2. Value proposition

The value proposition is the solution to the customers' needs, whether it is a product, a service or a mix of products and services (Osterwalder & Pigneur, 2010). The over-arching value proposition of Axians is to provide “greater **proximity** and **focus** on the customer's influence and decision center for digital transformation” (Axians, 2020). The sequent sub-set of Axians' value proposition within this project is to **Identify** customer brand engagement and which are the factors shaping the behavior of consumers within the customer journey (Calmao, 2020). Axians provides multiple value propositions for its clients such as: **Increase** comparable store sales, **generate** higher shopper engagement resulting in increase of sales, **build** customer loyalty, **enable** businesses to make data driven decision, **reduce** capital expenditure, **improve** overall business performance, **Understand and forecast** new potential opportunities and trends, **compare** KPI's and actual performance more precisely and effectively, and **implement** loss prevention strategies (Axians, 2020). To better understand the relevance and deep dive in

the value proposition it is relevant to perform a value proposition canvas, a tool which combines and integrate customer values and needs. (Appendix, 3)

6.3. Channels

The business model canvas refers to the channels building blocks as the ways in which a company interfaces with its customer segments (Osterwalder & Pigneur, 2010). The channels building blocks comprise the communication, distribution and sales channels. Moreover, channels can be direct i.e., owned by the company, indirect i.e., managed by partner companies or they can be a mix of both forms (Carrera, 2020). All these channels can play a crucial role for companies as they represent customer touch points to communicate the company's value proposition. In turn, channels have a focal point in the customer experience. Particularly in the case of Axians, the company leverages its operations by two types of direct channels and one type of indirect channel. The first ones are an in-house sales force and a company website. The latter is a partner-owned website (Axians, 2020). Axians' partner company is "Service One Alliance". This company is a trusted network of international leading ICT service providers offering clients a set of homogeneous first quality services and providing a deep national expertise anywhere (Service One Alliance, 2020).

6.4. Customers Relationships

In the business model canvas customer relationships refers to the types of relationships a company builds with specific customer segments (Osterwalder & Pigneur, 2010). Relationships can be personal that is, based on human interaction, or automated that is based on AI. Moreover, customer relationships can be driven by different factors such as the necessity of customer acquisition, customer retention or upselling (J. Rey, 2020). Several categories of customer relationships can be identified. These categories may exist independently or co-exist in organizations. The main categories of customer relationships are personal assistance, dedicated personal assistance, self-service, automated services, communities, and co-creation. These

categories differ one from the other for the type of relationship with customers i.e., personal or automated, and for the type of interaction with customers that can range from a one-to-one customer-vendor type of relationship to co-creation of value by multiple stakeholders (Osterwalder & Pigneur, 2010). In the specific case of Axians, the company opted for a customer relationship based on personal assistance. This type of relationship has its roots and relies on human interaction. Particularly, Axians' customers can get in touch with a real customer representative to get assistance during the vending process. This takes place on Axians official website, where customers have the chance to fill out a form with the company's main information and needs. In this way, Axians' representatives can elaborate and propose the most adequate solution to the company (Axians, 2020). This category of customer relationship reflects Axians' need for customer centricity. In fact, as in the case of many XaaS providers, crucial for Axians are its customers' needs (Revue, 2020).

6.5. Revenue Streams

The Revenue Streams building block refers to the in-flow of money the company generates from the interactions with the customer segment (Osterwalder & Pigneur, 2010). The pricing mechanisms among the revenue streams might differ; it is possible indeed to perform through fixed list process, auctioning, market-dependent volume-dependent, and Yield management (Corporate Finance Institute, 2020). In a business model, it is possible to identify two types of Revenue Streams: Transaction revenues related to one-time customer payments, and Recurring revenues dependent on the ongoing payments, and resulting from the delivery of the Value Proposition or customers-support after the purchase of the service (Belyh, 2020). The Recurring model is prioritized from Axians strategy for several reasons: Its predictable nature which ensure a secure and ongoing source of revenue, higher margins in the long-term compared a non-subscription model, the capability to upsell or cross-sell to its customer segment which evolves in what is commonly defined among business-to-business providers "Customer

Stickiness” (Mathieu, 2017). The As-a-Service offer according Gartner is expected to grow with a CAGR of 12% by 2022. Among the types of recurring revenue models, it is possible to determine different types of XaaS models (Deloitte, 2018).

Unlimited subscription, unlimited usage of the service with a time constraint. **Predefined Subscription**, plan which ensure the user to have access to a certain amount of service for a given period. **Subscriptions plus overages**, defined package in terms of service access and time with the optionality to get charges overages on effective usage. **Freemium**, the customer segment has the basic package for free and there is the possibility to upscale to the **Premium** in order to obtain the full set of functionalities, **Consumption-based**: package that offers a pay-per-use method, and finally the **Outcome based**, the fee is interconnected with the value the service provider is giving to the customer segments (Bedi, 2019).

For Axians, it is crucial to evolve a new disruptive approach, and holistic combined strategy in order to fully benefit from the recurring model approaches.

6.6. Key Resources

The Key Resources Building Block involves the most relevant assets necessary to make the business model work (Osterwalder & Pigneur, 2010). Among the key resources, it is possible to identify multiple segments such as Physical, Intellectual, Human, and Financial Resources. In this particular case being Axians a resource-driven model, its value proposition heavily relies on the existing IT infrastructure, and over the intellectual resources (A. Giratra, 2014). Moreover, the core asset for a XaaS provider is its codebase, which requires technical service delivery and deep knowledge of consumer behavior (Eijk, 2014). The most evident differences between cloud providers and software delivery companies are identified in multi-tenancy and function velocity. Every XaaS provider has to focus about how it is crucial to understand how multi-tenant his software needs to be to implement the right scalability model for its customers. In order to gain a competitive advantage, it is necessary to foster velocity and flawless in the

process. Therefore, Axians needs an integrated “DevOps” approach which requires qualified people, technologies, and new processes (P. Waterhouse, 2018). In-depth Axians “Brand Engagement Project” key resources comprehends: Cloud services, Enterprise network, Artificial Intelligence, Low-code platforms, Converged Infrastructure & Data Center, Collaborative solutions in order to achieve flexibility and efficiency, and Cyber Security (Axians, 2020).

6.7. Key activities

In the Canvas the Key activities are the most important actions Axians must perform to make its business model work (Osterwalder & Pigneur, 2010).

The core main activity in cloud-providers is the development of the software that should consequently reflect in the value increase of the codebase (Eijk, 2018).

The most crucial segment in XaaS providers is to interpret customer behaviors and their necessities, translating those needs into new functions, and convey them to its customers. It has to be implemented as an integrate pipeline. Business models designed with a software a Key Resource are predominantly governed by Software development and “DevOps”, and network-connected Key Activities according Accenture. In-depth key activities for Axians brand engagement project are: Sentiment analysis in order to interpret and understand emotions relying on text data, Movement tracking through sensors, behavioral analysis relying on integrated data sources, user experience to personalize the offer, user comfort and digital footprint to measure the comfort of users within the physical space combined with the digital footprint of their devices (Axians, 2020).

6.8. Key Partnerships

For companies’ success it is vital to have a strong network of key partnerships that help companies achieve their objectives. Within the context of the business model, key partnerships stand for the alliances with suppliers and other business partners that a company establishes to

safeguard its operations. Particularly, key partners help companies in optimizing their business models, reducing risk, or acquiring resources (Osterwalder & Pigneur, 2010). Moreover, it is possible to identify four main types of partnerships: strategic alliances between non-competitors, cooptation i.e., strategic partnerships between competitors, joint ventures to develop new businesses, buyer-supplier relationships to assure reliable supplies.

In the case of Axians, the company has several key partnerships. Axians' main partners are: AWS, Cisco, Dell Emc, HPE, IBM, Juniper, Microsoft, SAP, VMware. For Axians, these key partnerships represent strategic means to deliver high-quality solutions to clients. With the help of these key partners, indeed, Axians' product offerings value is significantly increased. This is achieved mainly thanks to the extensions of Axians' own capabilities. In fact, Axians' range of resources and activities is enriched by relying on the company' key partners to provide specific resources or perform particular activities.

6.9. Cost structure

This Cost Structure block describes the most relevant costs occurred while implementing particular business model (Osterwalder & Pigneur, 2010). The cost structure is strongly dependent over Key Resources, Key Activities, and Key Partnerships. It appears evident that costs should be minimized at all level within the business model, but the degree of priority of costs reduction it is determined by the intentions of the company: to be a value driven or a cost driven business model (Young and Reeves, 2020).

The most significant costs within Axians model are associated with the cloud enterprise, IT infrastructure development and in the creation and maintenance of new functionality. According BCG for XaaS providers once the software has been coded, the shipment has low incremental cost and the cost of infrastructures is strictly connected to the demand volume (Carrera, 2020). Surprisingly for what concerns the R&D the main cost driver is related to detection and reinforcing future customer needs rather than current.

7. Limitation

Because of the rudimental phase of Axians' project, the paper has some limitations that can be exploited in the future as further topics of research.

In fact, Axians intent of **improving and understand customer experience through data's collection and analysis** is still in its R&D phase. For this reason, the final business model of Axians' activities is still to be defined. Within this context, it is likely that more facets will emerge as the project goes towards the final stages of development. Moreover, the proposed business model is to be considered valid only in the context of what is currently publicly disclosed by Axians. In fact, the paper is based on public available information and does not encompass Axians' own research on the topic.

These elements may constitute interesting future research proposals. In fact, as the project reaches its final stages and as more information will be available, new and compelling insights can be drawn. On a final note, it is important to point out that if on one hand, the project is easily approachable from people with a business background, on the other a more technical expertise is required to fully grasp its totality. A research paper characterized by a more interdisciplinary approach i.e., conducted from people of the business, engineering and data analytics' world, would contain further insights and a better-rounded outlook on Axians' work.

8. Future Work Proposal

An interesting future work proposal could be the one of investigating Axians' project, in the context of the business model, according to multiple customer segments. In this way, the business model would be analyzed in a more specific way. Each particular customer segment is, indeed, characterized by its particular business model. In turn, a more detailed view on Axians' business model would arise together with a more specific analysis of Axians' activities associated with specific customer segments. In addition to this, an operating model could be integrated to the mentioned business model canvas. The operating model will describe the main

ways in which Axians structures its core processes. These models together will provide a very detailed and comprehensive view of Axians' work. Highlighting not only the way in which Axians captures value for different customer segments but also the way in which the business is run.

9. Conclusion

Axians' challenge is certainly ambitious and looks ahead in the future; the world is globally shifting towards data, and a customer-centric society. According Cisco almost two-thirds of the population will be able to access internet by 2023 reaching almost 5.3 billion of users, it follows that the number of data source will increase drastically, increasing the value of data analytics and improve significantly the precision of data driven strategies. Most of the business today are not aware of the value and impact data can bring (Harvard Business Review), Axians' has to foster its value proposition to the identified customer segments and prioritize the Everything-as-Service offer and the Cloud will be the main character of this specific approach. Having reached the conclusion of this paper, it is time to answer the question posed by Rui Calmao, the Director of Critical business Functions at Axians, at the beginning of this project: "If it's something felt inside, how can it be measured from outside?" As mentioned in the report in the Scope of analysis, there is a substantial difference between emotions and feelings, and the possibilities to measure them. On one hand emotions are rather easier to capture and analyze compared to feelings, on the other feelings have a significant role in shaping the sub-conscious of human beings, therefore

he degree of understanding has the limit to human imaginations and technologies

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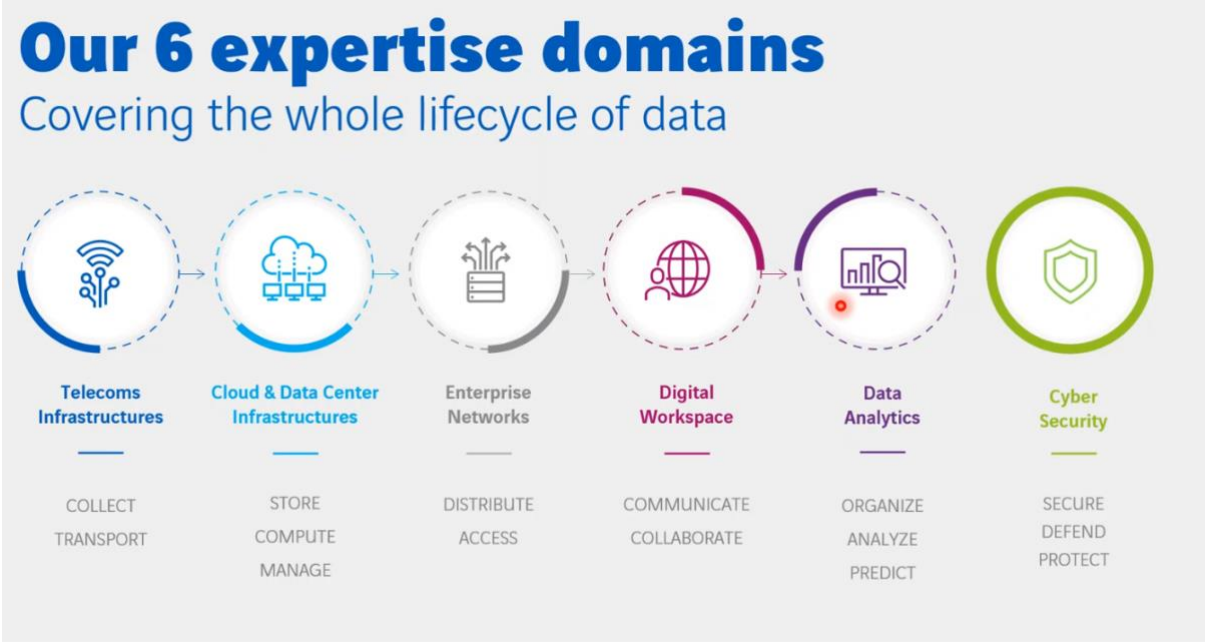
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11. Appendix

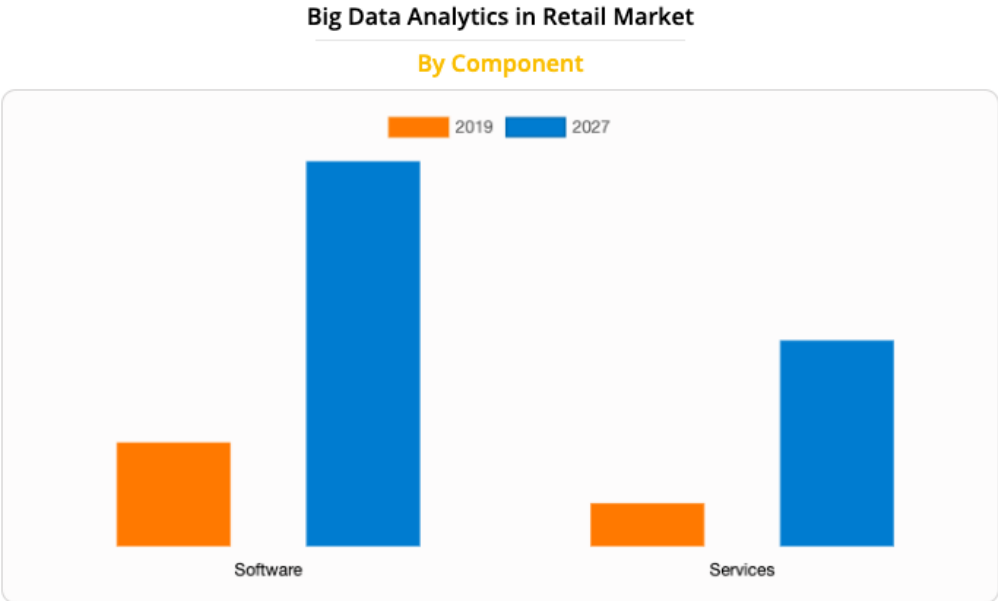
Appendix 1- Axians Domains of Expertise

Source: Axians



Appendix 2- Big data analytics in retail market 2019

Source: Allied Market Research



Big Data Analytics in Retail **Software** segment is projected as one of the most lucrative segments during the forecast period.

Appendix 3- Value Proposition Canvas

Source: Axians

