Master's Thesis Research Project – Sustainable Business and Innovation

Dealing with an identity threat: Porsche and the transition to electric mobility

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Abstract

Due to sustainable transitions, industries and organizations across the globe need to transform and align their product offerings and business practices with more environmentally friendly and socially accepted ways of operating. The movement towards this reality may come to confront organizations and industries' business as usual, creating an identity threat. This is especially the case for incumbent organizations, who have reached their current market positions based on legacy business practices and products. Understanding *how* incumbent organizations deal with the identity threat within their external communication becomes important as theory acknowledges that an organization's ability to communicate the process of change to its stakeholders and manage the expectations of these stakeholders as the organization transforms is as important as the act of changing processes, structures, and products.

This longitudinal study explains how an incumbent organization deals with an identity threat caused by a sustainable transition in its external communication, and identified which corporate identity elements does it alter, maintain, and disrupt. As empirical context, the study analyzed Porsche and the transition to electric mobility. The study used Porsche's external communication (annual/sustainability reports and website for press-related matters) and interviews with Porsche's senior executives, searched on Nexis Uni research database, during the period of 2005 and 2020. The data was first analyzed to reconstruct the case chronology and then analyzed for the identification of maintenance or change of corporate identity elements. This led to the identification of specific themes related to maintenance and change, which were then used to construct a process model that depicted *how* Porsche communicated about corporate identity change during this timeframe.

The findings demonstrate that Porsche does not disrupt any corporate identity elements within its communication but maintains three corporate identity sub-elements and changes five. Porsche's communication about maintenance and change of specific corporate identity sub-elements interplay, creating, at times, an ambiguous message which creates an impression that Porsche is changing while remaining the same to possibly balance different stakeholder interests. Such dynamic sheds light on Porsche's struggle to align itself to the sustainable transition and demonstrates that such transformational process is a slow and gradual one. The results can bring improved understanding of the transformational journey and deeper knowledge of what challenges and barriers incumbent organizations meet within the context of sustainable transitions.

List of Abbreviations

The following table describes the meaning of various abbreviations and acronyms used within the study.

Abbreviation	Meaning
AR	Annual Report
CI	Corporate identity
CO2	Carbon dioxide
DFI	Direct fuel injection
ECJ	European Court of Justice
EU	European Union
EV	Electric vehicle
FIA	*Fédération Internationale de l'Automobile*
ICE	Internal combustion engine
LEV	Low-emission vehicle
LMP1	Le Mans Prototype 1
PHEV	Plug-in hybrid electric vehicle
R&D	Research & Development
SUV	Sports utility vehicle
VW	Volkswagen

1. Introduction

The current state of our planet calls for more environmentally and socially responsible business practices. The way societies function needs to be rethought and current business practices need to be challenged in order for humanity to be able to operate within the planet's regenerative capacity (Rockström et al., 2009). Making this a reality requires a large-scale socio-economic change and system actors need to transform accordingly. Innovation academics refer to such transformation processes as 'sustainability transitions'. Sustainability transitions are formally defined as *"long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption"* (Markard et al., 2012, p. 956).

Individual organizations experience sustainability transitions in distinct ways, due to variables such as the industry setting, their internal capabilities, maturity level and market position (Turnheim & Sovacool, 2020). Unlike sustainable startups, which have sustainability as an integral part of their strategy, incumbent organizations often find themselves challenged by sustainability transitions (van Mossel et al., 2018). The shift to more sustainable operations can require incumbents to abandon their legacy business model and become 'a different type of organization' (Augenstein & Palzkill, 2015). Sustainability transitions can thus threaten the corporate identity (CI) of incumbents, which is defined as a set of attributes or features that are perceived to be central, enduring, and distinctive to an organization (Albert & Whetten, 1985).

To date, transition research has been dominated by *"perspectives portraying incumbents as 'villains' who irremediably resist, slow down, prevent transition efforts (Byrne and Rich, 1983; Geels, 2014; Penna and Geels, 2015; Sovacool et al., 2017; Stirling, 2014, 2011) due to their shared and deep attachment to 'dominant regimes'"* (Turnheim & Sovacool, 2020, p. 181). This study takes a different perspective and tries to understand how incumbents communicate about changes to their CI in response to an identity threat caused by a sustainability transition.

With this in mind, the following research question and sub-question will be answered:

How does an incumbent organization deal with an identity threat caused by a sustainable transition in its external communication? Which corporate identity elements does it alter, maintain and disrupt?

As empirical context, this study will focus on Porsche and the transition to electric mobility. As a sports car manufacturer, Porsche is being confronted with the issue that their legacy

products, which are heavily anchored in the internal combustion engine and brand attributes such as speeding and racing, may no longer be legitimate when the transition to electric mobility advances. Over the last two decades, Porsche went from opposing electric mobility to considering the shift to the electric engine as a *"perfect match"* for the company (Oliver Blume, Porsche CEO, in Mertens, 2019, p. 9). The objective of this longitudinal study is to understand how Porsche went about communicating about such changes to its CI. It considers a timeframe of 16 years and uses company-specific archival data. The data will be analyzed through the lens of CI theory. Importantly, this study does not seek to establish which change actually took place within the organization, but how the organization communicates about CI change to external audiences.

Investigating how incumbents communicate to external audiences 'who they are' is important to understand because theory recognizes that the success of change depends not only on an organization's ability to implement new structures and processes, but also on the ability to express new direction and priorities to its many stakeholders (Fiss & Zajac, 2006). Understanding the process of communicating about changes to CI is thus relevant for gaining insights into the bigger problem of how incumbent organizations deal with strategic change. This, in turn, is important for understanding the unique challenges this actor group confronts in sustainability transitions.

To support and answer the research question, the study will draw on CI theory, which will be further elaborated in the next section. The study will follow with the methodology section, where the approach to collecting and analyzing data will be explained. Next, the analysis section will provide the results of the research. Then, the discussion section will provide insights to how the results connect to already existing theory and describe the study's limitations. Finally, the conclusion will summarize the results of the study and provide implications.

2. Theory

This section will first explore the various perspectives within the concept of CI and further explain the perspective used in this study. Then, it will elaborate on what is already known about sustainability transitions as identity threats. The section will then follow with an overview of theory on how companies deal with identity threats.

2.1 Corporate identity

As Cornelissen and Elving (2003) state, the concept of CI "*is a varied and complex phenomenon involving many cross-currents, but a few broad patterns present themselves"* (p. 114). The first pattern identified by the authors is related to the perspective of public relations and communications industry. This perspective is traced back to Lippincott and Marguiles (1957) who coined the term 'corporate identity' in reference to "*an organization's logos and symbols as these were seen as 'identifying' the organization to third parties"* (Cornelissen & Elving, 2003, p. 114). Therefore, within this perspective, the focus is primarily the design of the different components of the visual identity of an organization as described by Olins (1978; 1990).

The second pattern observed "*[arises] from the public policy and legal sphere"* (Cornelissen & Elving, 2003, p. 115). This perspective emphasizes the personification of organizations – in the sense that they have their own identity, in much the same way that a natural person develops his or her own personal identity. In the legal realm, this means they are accountable for their respective actions as a legal person (Czarniawska-Joerges, 1994).

A third and final pattern refers to the use of the term within the academic organizational behavioral and management literature (Cornelissen & Elving, 2003). This perspective moves past seeing CI simply as a branding strategy or legal person and understands CI as an interdependency of multidisciplinary functions and activities of an organization (Melewar et al., 2005). More specifically, it refers to CI as "*a set of intrinsic characteristics or 'traits' (e.g., strategy, culture, core competencies) that give the organization its specificity, stability and coherence"* (Cornelissen & Elving, 2003, p. 115).

The latter perspective is the one that will be used in this thesis, because it is precisely the organization's communication about these traits and features that are described within this perspective which are the subject of interest in this study.

Scholars have developed CI models to describe the elements that constitute CI (Balmer, 1995; Melewar & Jenkins, 2002; Melewar et al., 2005), CI strategic-management models (Markwick & Fill, 1997), CI formation and performance models (van Riel & Balmer, 1997), CI management process models (Stuart, 1999), and CI management models (Alessandri, 2001; Cornelissen & Elving, 2003). Figure 1 depicts one common model proposed by Melewar et al. (2005) that describes the elements which constitute CI.

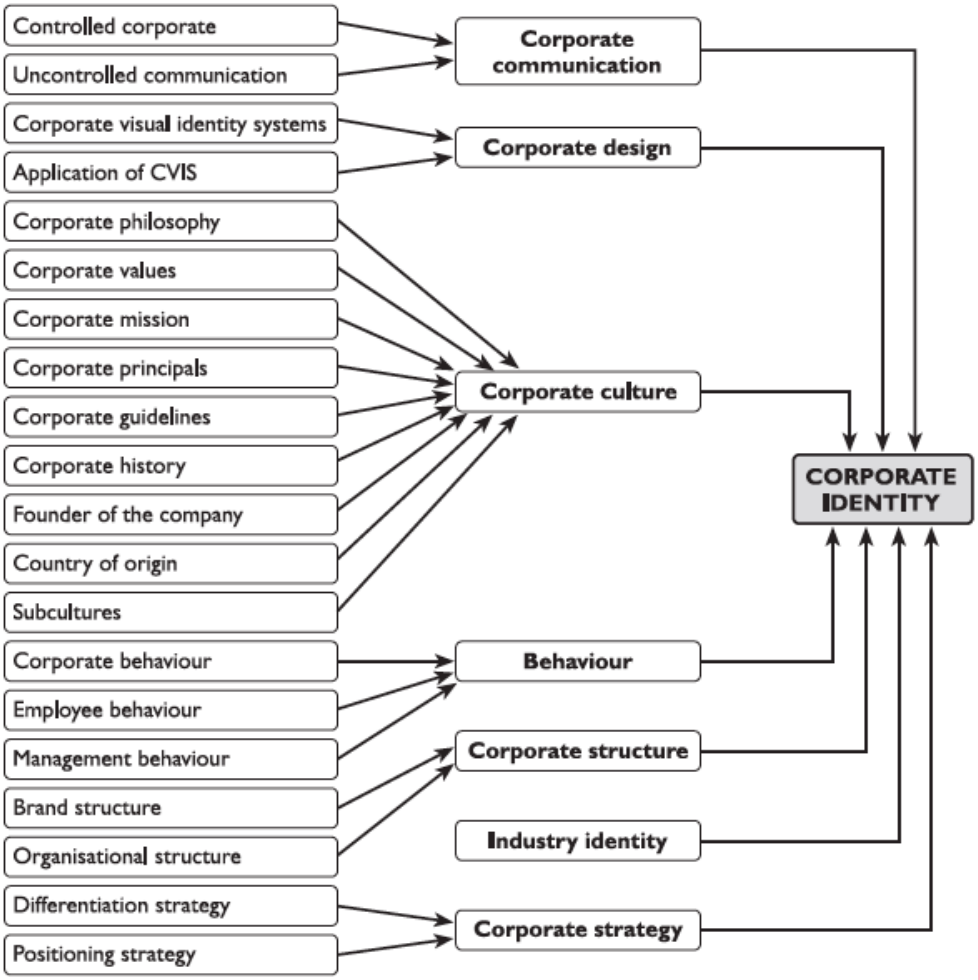


Figure 1: *Corporate identity components and elements (Melewar et al., 2005).*

The authors of the model define a list of 'core components' in which CI is manifested and built upon. They are corporate communication, corporate design, corporate culture, behavior, corporate structure, industry identity and corporate strategy. These components reflect mostly the first and third perspectives of CI – design and visual identity of an organization and set of 'traits' of an organization respectively – as described by Cornelissen & Elving (2003) above.

Gioia et al. (2013) adds to the interpretation and discussion of CI that the expression of a CI is a dynamic process, which transforms and evolves over time according to the context in which it happens. As Simões & Sebastiani (2017) clarify: *"[a]lthough identity evolves over time, it establishes the motives for the company's existence and defines the tone of the way to do business"* (p. 428). Consequently, trying to understand the process of dealing with an identity threat and the communication procedure that it entails, requires a longitudinal perspective (Gioia, 2013).

Despite various nuances, in essence, CI reveals "*'what the organization is', 'what it stands for', 'what it does', 'how it does it' and 'where it is going'*" (Bernstein, 1984, Melewar & Jenkins, 2002 as cited in Melewar et al., 2005, p. 61).

2.2 Sustainability transitions as identity threats

There is an increasing interest in incumbent behavior in sustainability transitions (e.g., van Mossel et al., 2018). Research has demonstrated that organizations, in general, can behave differently within sustainability transitions. With the objective of aligning themselves and the sector they operate in with the ongoing transition dynamics, they can try to influence new regulations (Barley, 2007), come together to promote common industry standards (Slager et al., 2012), develop new products, processes, and technologies (Kaplan & Murray, 2010), create collective expectations (van Lente & Rip, 1998), and take part in societal discourses and problem framing (Lefsrud & Meyer, 2012). On the other hand, organizations can also work against the change that sustainability transitions are trying to bring about. This can be done by maintaining existing infrastructures, industries, technologies and institutions (Smink et al., 2015), lobbying against upcoming environmental regulation (Hess, 2014) or by persisting on the "greening" of established technologies (Garud et al., 2010).

Incumbents are often considered to use these means to work against change, because sustainability transitions imply a dilemma for them. For example, upcoming technologies challenge incumbent technologies and new lifestyles challenge products incumbents stand for. Yet, it is known that after a period of opposition, incumbents eventually reorient to adjust to a new reality that is brought by the sustainability transition (Penna & Geels, 2012).

As Augenstein & Palzkill (2015) point out:

> *Incumbents are slowly beginning to face this challenge [sustainability transitions], which can be described in terms of a dilemma: if incumbents stick with their proven strategies and business models, they contribute to the emerging crises, which will most likely affect them in the long run. However, if they transform their business model in radical ways, they will most likely fail in the short run* (p. 16).

Managing the transformation of their business model and proven strategy is therefore a delicate act for incumbents, combined with tensions which inevitably arise between 'who they are' as an organization and sustainable transitions.

Still, we do not know much about the process of reorientation and how incumbents convey their new trajectory to stakeholders. This study sets out to better understand this process and focuses on incumbents' efforts to *communicate* about this transformational process.

2.3 Dealing with identity threats

Dealing with identity threats means looking at organizational responses to situations or events that question the core of the organization (Ravasi & Schultz, 2006). How companies deal with this in their external communication is an issue that has been addressed in different literatures, for instance in symbolic management or impression management (Gardner & Martinko, 1988; Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Gioia et al., 2000; Fiss & Zajac, 2006). One important finding in this literature is that organizations can decouple their talk from their actions (Fiss & Zajac, 2006; Wright & Nyberg, 2017). Especially in the context of sustainability and environmental communication, researchers have looked at greenwashing or whitewashing (Laufer, 2003; Torelli et al., 2019). This refers to the intentional manipulation of communication to mislead audiences.

There is also research that does not look at intentional miscommunication but points out that organizations need to balance multiple stakeholder interests when communicating change (Richardson & Denton, 1996; Lewis et al., 2001). Communicating about change is important because organizational change may impact incumbent's stakeholders (Hill & Jones, 1992). For example, to investors, who are usually seeking short-term gains, change can be understood as a significant threat to their investments, as organizations may need to refurbish their factories, re-think their procedures, while continuing to maintain a profitable business. Internally, the transformation can bring insecurity and uncertainty to employees (Dent & Goldberg, 1999). Consequently, in order to successfully tackle the dilemma that is imposed by sustainability transitions, incumbents need to act and, at the same time, balance stakeholder interests as part of their efforts to adapt to a new reality.

Overall, literature acknowledges that achieving understanding and the acceptance of new priorities among key constituents is critical for an organization to maintain legitimacy. Organizations need to secure stakeholder buy-in for their new pathways and external communication efforts are a critical means to do so. Thus, it is reasonable to observe and analyze an organization's efforts to 'give sense' to who they are and plan to become.

3. Methodology

3.1 Research design

Identity change is a processual phenomenon (as argued in 2.1), therefore a longitudinal research design fitted to the objective of this study. Observing the case longitudinally allowed for mapping, comparing, and identifying patterns in Porsche's communication about its identity at different points of the defined timeframe.

A single case study was best suited to explore the research question because CI is a unique feature to every organization and analyzing a single case allowed for a deeper analysis and nuanced account of the phenomenon under investigation (Ozcan et al., 2017).

As typical for single cases, it is relevant to search for a "revelatory" or "extreme" case that offers a high chance of observing the phenomenon of interest (Yin, 2014; Ozcan et al., 2017). Porsche was considered an extreme case as electric mobility threatens its core product and the lifestyle that it represents.

3.2 Case selection

The case selection was guided by two criteria: (i) the organization had to face a sustainability transition that threatens its identity and (ii) the organization is in the process of dealing with such identity threat, meaning that it shows signs of responding to it.

Given this, Porsche is a suitable case because it is an organization that is heavily invested in the incumbent technology of the automobile industry, the internal combustion engine. The incumbent technology is under threat due to the emergence of a novel technology, the electric engine. At the same time, Porsche is an organization that stands for a legacy product and tradition that is synonymous with a lifestyle involving driving, racing, and speeding for many car lovers across the globe. The organization is also currently one of the world's largest race car manufacturers, building one-make Porsche's for their premier racing series, Porsche Carrera Cup, which hosts Grand Prix around the world (Porsche, n.d.). These are all elements (or parts of elements) that shape the CI of Porsche. In the context of the transition to electric mobility, however, these attributes clash with the rising sustainable lifestyles and choices made by consumers. Porsche has not been at the forefront of implementing electric mobility. For a long time, the organization argued that electric mobility does not fit into its products' identity. Instead,

it gradually introduced hybrid engine models, which are mainly powered by fossil fuels, although partly powered by electricity. With increasing regulatory pressures (e.g., EU directive on emission standards), social pressure (e.g., Greenpeace protesting at Porsche's main plant and calling their products "climate pigs"), societal expectations and acceptance of electric mobility by the automobile industry and consumers, this seems to have changed. In 2019, Porsche launched its first fully electric model, the Taycan. This was a move that many journalists and industry experts classified as a "culture shock" (Mertens, 2019). Yet, the automaker claimed that *"electric mobility is a perfect match for Porsche"* (Oliver Blume, Porsche CEO, in Mertens, 2019, p. 8). This storyline demonstrates how Porsche is currently in the process of dealing with the transition to electric mobility and the related changes to its CI.

3.3 Data collection

The temporal scope of collected data covered a 16-year time frame, from 2005 until 2020. This temporal cut is based on the fact that 2005 was the year in which the Kyoto Protocol entered into force (Grubb et al., 2018). Signed in 1997 by 193 countries, the Protocol is a commitment of its signatories to work on the reduction of greenhouse gas emissions on the quest to combat their negative impact on global warming (Grubb et al., 2018). From 1997 onwards, emission requirements were introduced for car manufacturers and attention to sustainability matters were enhanced. The Kyoto Protocol is also considered as one of major agreements that pushed economies across the globe to take sustainability practices seriously, making its enforcement year a transformational one. Against this background, 2005 onwards is also the period which it was expected for car manufacturer responses to this reality to become apparent within the data. On the other hand, 2020 was the other natural delineator as the transition is ongoing and data was collected during winter 2020/2021.

Single case studies and understanding change processes requires rich data (Ozcan et al., 2017). Therefore, multiple data sources were used. Importantly, this study was interested only in communication coming directly from the organization. It was above all, about Porsche's own discourse regarding identity change. Therefore, only data sources that fit this criterion were considered in-scope. It was recognized that external communication usually puts the organization in a favorable light. However, Gurses & Ozcan (2015) argue that it is exactly the fact that public statements are carefully prepared for external audiences that can provide rich insights into actors'

framing efforts. Maguire & Hardy (2009) also argue that official media accounts make actors' ongoing discourses and negotiations accessible via texts and that archival data such as newspapers articles, newsletters, or even filings to regulatory agencies are key resources for researchers that want to study such dynamics.

Given this, the following data sources were included:

26 Annual/Sustainability Reports (12 of Porsche AG and 14 of Porsche SE)

Annual and sustainability reports were valuable sources in the context of this study because they have the ultimate objective of communicating and informing *external* stakeholders about what is happening within the organization and where it is heading to. These reports included shareholder letters and contained interviews with high-level executives or other employees that offered detailed descriptions of corporate strategies and the logic underlying changes.

It is important to note that there was a different number of annual and sustainability reports for each company because Porsche SE was created in June 2007, by renaming the old Porsche AG, and became a holding company. At the same time, a new Porsche AG was created for the car manufacturing business. Therefore, although a different number of annual and sustainability reports were available for each specific company, the documents covered the entire timeframe of the study. The availability of Porsche AG annual and sustainability reports only from 2011 is because the company did not publish annual reports (ARs) between 2007 and 2010. This information was confirmed to the researcher upon request by Porsche's department responsible for Planning, Strategy and Investor Relations.

Press releases and articles in dedicated website for press-related matters (Porsche Newsroom)

Porsche's media portal contained a database of press releases and other company-specific communication material, which allowed for filtering of topics, format, and date. Press information is another source of data which has the objective of informing the *external* world about Porsche's communication about CI. Filtering the database for search terms related to electric mobility and the predefined timeframe[1], resulted in 139 documents, such as press releases and company-specific articles. These results were filtered further by selecting those that refer to the topic under

[1] **Search term:** Electric mobility. **Category:** All (company, products, engineering, motorsports, history, scene and passion, sustainability). **Date:** January 1st, 2011 to December 31st, 2020 (this is the maximum timeframe available in the database). **Results:** 139.

investigation. Therefore, the actual number of documents used from this data source was 80. Alongside the press-specific website, the corporate website and two Environmental Statements published by Porsche during the timeframe of the study were used to complement the data.

Interviews with senior executives

With specific interest on direct communication from the organization and its leadership members, the research focused on Porsche's CEOs as key representatives of the leadership team. Interviews with the organization's senior executives were searched on Nexis Uni (previously Lexis Nexis Academic). This business research database allowed for the search of specific news items about business. It also allowed for a search within a specific timeframe and language. Filtering was narrowed down further by choosing particular publication types, subject and industry. It further filtered search results by allowing to perform searches within initial searches, by including or excluding specific terms. The initial search performed in this database[2] returned 10,000+ results, but they were filtered further. In Step 2, the terms used to further filter the initial results referred to the identity threat to Porsche (electric mobility) and the names of the organization's CEOs as the key representative of the firm during the study's timeframe. The word "interview" was added to filter results that would most probably include direct statements of the CEOs.

A secondary filter of the 257 results was made to make sure that the data collected remained true to only including direct communication from the organization and its leadership members. For example, news articles that mainly reflected journalists' views were excluded. The secondary filter also excluded exact duplicates of interviews and news pieces published in different publications and the results that referred to namesakes of the CEOs present in the search string. Therefore, the actual number of documents used from this source was 62.

Table 1 below is a summary of the different data sources and the number of documents used within each data source. The use of multiple data sources ensured the reliability of the study. This avoided the overinterpretation of communication becoming apparent in a single data source.

[2] **Step 1:** **Search Term:** Porsche. **Language:** English. **Timeline:** January 1st, 2005 to December 31st, 2020. **Subject:** Business News OR Company Activities & Management OR Environment & Natural Resources OR Science & Technology OR Sports & Recreation. **Results:** 10.000+. **Step 2:** **Search within results (including):** electric mobility OR electric AND Wiedeking OR Macht OR Müller OR Blume AND Interview. **Results:** 257.

Table 1: *Summary of the data sources and the number of documents used within each data source.*

Source	Date Availability	Number of Documents	Number of Results	Number of Results - Filter 1	Number of Results - Filter 2	Total Number of Used Documents
Porsche SE Annual Reports	2006/2007 - 2020	14	N/A	N/A	N/A	14
Porsche AG Annual/Sustainability Reports	2004/2005 - 2005/2006 and 2011 - 2020	12	N/A	N/A	N/A	12
Porsche AG Environmental Statements	2005 and 2016/2017	2	N/A	N/A	N/A	2
Porsche Newsroom	2011 - 2020	N/A	139	80*	N/A	80
Nexis Uni	2005 - 2020	N/A	10,000+	257**	62***	62
Total number of documents used within the research						**170**

N/A = Not applicable
* Results were filtered considering the topic under investigation: electric mobility.
****** Search within initial results (including): electric mobility OR electric AND Wiedeking OR Macht OR Müller OR Blume AND Interview.
*** Results were filtered by only including direct communication from the organization and its leadership members.

3.4 Data analysis

The data analysis was a two-step process. The first stage was more descriptive and the second one was more interpretative. The analysis relied on temporal bracketing, which is a common analysis strategy for process data (Langley, 1999). A temporal bracketing strategy is a data analysis approach coined by Langley (1999), in which the data is placed into successive adjacent periods and *"enables the explicit examination of how actions of one period lead to change in the context what will affect action in subsequent periods"* (p. 703). Langley (1999) also argues that this "*type of temporal decomposition also offers interesting opportunities for structuring process analysis and sensemaking"* (p. 703), which aligned with the objective of this study.

Stage 1: Chronological ordering of the documents, temporal bracketing of the data and first round of coding

1.1 Chronological ordering of the documents and temporal bracketing of the data

Once all 170 documents were collected, each document was named in the same format. The format YYY_MM_DD (Year_Month_Day) followed by the title of the document/news piece and the source name abbreviation (e.g., 2015_09_24_Member_of_Board_changes_PNR) was adopted as the nomenclature of the documents. This allowed for all documents to be placed in

chronological order in a folder. Later (2.1), this also enabled all documents to be imported into NVivo software in the same order as the folder.

All documents were read and searched for identification of *critical events*, which related to internal and external events (e.g., changes to regulation, corporate scandals, launching of new strategies, new leadership/management). In a first step, this served to reconstruct the case chronology and delineate temporal brackets.

This part of the analysis identified three temporal brackets within the studied timeframe. The temporal brackets were defined by two internal company events that were considered turning points on Porsche's journey towards electrification and deemed as company responses to the identity threat posed by the electric engine.

1.2 Coding for identity elements

Each document was then coded within NVivo, with the objective of extracting statements about CI. The elements of the model by Melewar et al. (2005, see Figure 1) and their definitions served as initial orientation for organizing and coding the data. The identified data was coded using NVivo software, assigning each piece of data to a node that was named after the CI elements of the Melewar et al. (2005) CI model. An extra node, named "R&D", was added to include references that made mention to Porsche's Research & Development (R&D) activities. In an iterative process, the coded information was reviewed to make sure the data was assigned to the correct node. Next, all references contained in each node of NVivo were exported into a Word processing document. All codes were available in chronological order, which allowed a high-level overview on changes over time. This provided first indications of answers to the research question. For instance, the launch of new corporate strategies across the studied timeframe and how electric mobility gradually gained importance within them.

Appendix A demonstrates an overview of the number of documents used for coding each of the CI elements and how many references were coded under each of them. It is important to note that the collected data did not cover each element of Melewar et al.'s (2005) CI model to the same extent. This is because the data scope refers to external communication *about* CI. For example, the CI core component 'corporate strategy' evidently had a stronger presence in the collected data as companies often inform external stakeholders about any changes to their strategic thinking and acting. 'Corporate culture' is another core component of CI that was prominent within

the data. An organization's principles, guidelines, mission, values, and philosophy provide the organization with a clear and effective guide for making decisions. On the other hand, the element 'behavior' was more difficult to encounter in the data, as individual behavior of employees or management is not a topic which organizations usually report and communicate externally about. Still, it was considered helpful to take recourse to existing definitions of CI elements that are already offered in the literature to initially organize the data.

Stage 2: Second round of coding and comparing temporal brackets to identify patterns

2.1 Coding for maintenance or change within CI elements

The second stage of the analysis involved a more detailed coding within each code category (CI element), checking for indications of change or continuity. More specifically, the second round of coding looked for keywords, excerpts, and explanations that indicated what was maintained or changed within the code category. These references were then highlighted with a comment indicating if it referred to maintenance or change of the CI element. For example, references that spoke about the reasons behind specific corporate decisions and choices, communication about change of corporate strategies and plans, including the organization's storytelling about its journey towards electrification provided valuable insights. Additionally, interview references that contained responses of Porsche's leadership on the past and future of Porsche's product offering and where the organization was heading to were also deemed valuable during this second round of coding.

Next, these indications were clustered and cross-compared, which led to the identification of specific themes within the CI elements. For example, "adapting and aligning motorsport strategy for product development" was a theme that emerged under "corporate behavior". In total, eight themes were identified within the CI elements. The identification of these themes reflected that CI elements, mostly, did not entirely change or were completely maintained across the studied timeframe, but sub-components of these elements clearly did.

2.2 Comparing temporal brackets and identifying patterns

The last step of the data analysis was mapping of the data and an iterative process of cross comparing the different temporal brackets and elements of the CI. This part of the data analysis had the objective of identifying connections between the different themes that emerged in the

coding for maintenance or change within CI elements. Theoretical references such as the constant comparative method developed by Glaser and Strauss (1967), where parts of the data are constantly compared with other parts of data, supported the exploration of similarities, variations, differences and meaning amongst the themes. Comprehending the relationships between these themes allowed for the construction of a process model that explained how Porsche went about dealing with the identity threat in its external communication within the timeframe of the study.

A pattern was observed on Porsche's journey towards electrification, where certain CI sub-elements changed, which in turn, allowed others to be maintained. The interplay between the CI sub-elements that changed and the ones that remained the same enabled the automaker to manage the balancing act between remaining the same organization and becoming a different one.

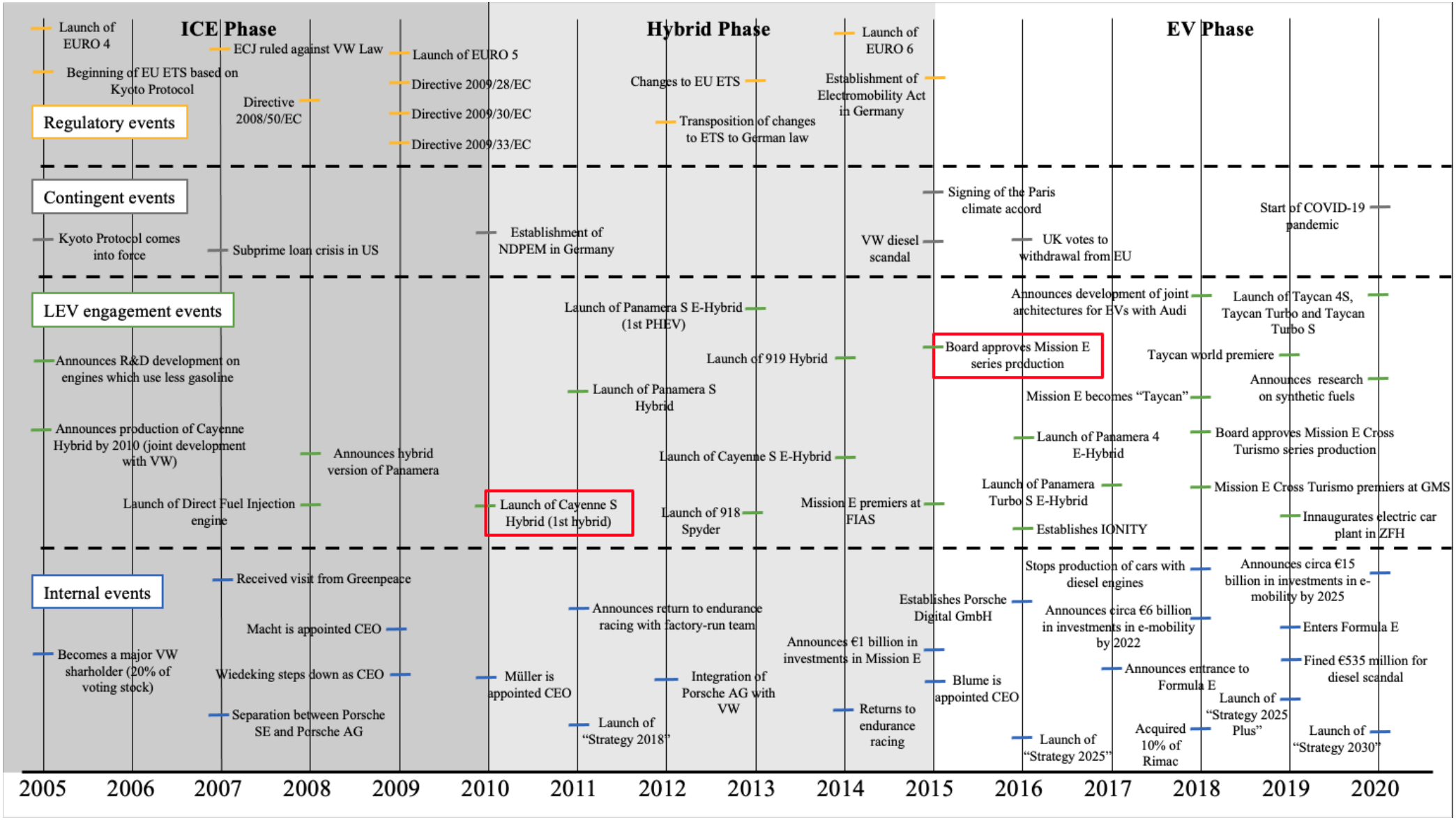
4. Analysis

4.1 First-order analysis: Case chronology and temporal bracketing

The first step of the analysis was delineating temporal brackets within the case chronology. The temporal brackets were defined by two internal company events. First, the launch of Porsche's first hybrid model and, second, Porsche's decision to initiate the series production of its first fully electric model, the Mission E, which later officially became "Taycan". These internal events were deemed turning points for Porsche within the studied timeframe and, therefore, considered critical events. More specifically, the events were turning points on the organization's quest for low-emission vehicles and considered responses to the "identity threat" posed by the electric vehicle. Not only were these two events concrete steps towards the electrification of Porsche's models but they were also considered defining moments by Porsche itself as will be demonstrated below.

These two events resulted in the distinction of three temporal brackets within the studied timeframe, which were labelled as ICE (Internal Combustion Engine) phase, Hybrid phase and Electric Vehicle (EV) Phase, respectively (Figure 2). The ICE phase runs from the beginning of 2005 until the launch of Porsche's first model with a hybrid engine, in 2010. The Hybrid phase runs from the latter to Porsche's official decision to mass produce its first fully electric car, in 2015. And finally, the EV phase runs from the afore-mentioned decision until the end of 2020. Figure 2 below depicts the three defined temporal brackets and lists in chronological order the main events that occurred in the studied timeframe.

The main events are labelled as internal events, low-emission vehicle (LEV) engagement events, contingent events, and regulatory events. *Internal events* were events or decisions that occurred within the boundaries of the organization. *LEV engagement events* were related to Porsche's involvement with low-emission vehicles. *Contingent events* were events dependent on other external events. Finally, *regulatory events* were those related to the adoption or change of European and/or German law, with focus mainly on automotive law. The two events that are highlighted in red are the events that defined the temporal brackets.



EU ETS = European Union Emissions Trade System; ECJ = European Court of Justice; NDPEM = National Development Plan for Electric Mobility; VW = Volkswagen; PHEV = Plug-in Hybrid Electric Vehicle; FIAS = Frankfurt International Auto Show; EV = Electric Vehicle; GMS = Geneva Motor Show; ZFH = Zuffenhausen

Figure 2: *Case timeline and defined temporal brackets.*

The section will follow with an overview of the main events which occurred in each of the defined phases and an explanation of what discerned each phase. The overview of each of the phases integrates and allows the reader to understand what happened in the industry and the organization, while it also depicts what Porsche did and communicated regarding electromobility.

ICE phase: period between 2005 and 2010

During the ICE phase, a time where automakers across the world were launching their hybrid models, Porsche was still very much reluctant about the technology. Along with other European automakers, Porsche stated that the hybridization of the auto industry had been a consequence of a clever promotion by the Japanese automakers (Wendelin Wiedeking, Porsche CEO, in Landler, 2005). In a battle regarding fuel efficiency, Europeans saw more potential with diesel engines and the emergence of hybrid vehicles across the industry was the consequence of a *"[lost] marketing battle between Europe and Japan, and diesel engines were Europe's proposal"* (Wendelin Wiedeking, Porsche CEO, in Landler, 2005, p. 4).

At the same time, Porsche acted more on the defensive and concentrated its efforts on praising and underlining the high emission standards fulfilled by its sports cars. The ICE phase is characterized by Porsche betting on the fact that future gasoline-fueled engines would be more efficient and, when compared to diesel, gasoline would not have to sacrifice in terms of cost, weight, or power density (Porsche AG, 2005). *"Development activities with this aim in mind [were] in full swing"* within the organization (Porsche AG, 2005, p. 73). During 2005, Porsche announced that the upcoming 2008 Cayenne model would feature a direct fuel injection (DFI) engine, enabling circa 15% reduction in fuel consumption compared to previous models (Porsche AG, 2006). The DFI engine was the result of ten years of development and a three-digit million amount of investment on the optimization of powertrain technology (Porsche SE, 2007). The organization also claimed it was a car manufacturer that ranked amongst the lowest in terms of CO2 emissions and stated that, by 2012, average CO2 emissions of the organization's vehicles would have fallen by 20% compared to the 1995 figure (Porsche SE, 2007). Therefore, the automaker still very much backed and was working on a future based on a fossil fuel powered engine.

Nonetheless, already in 2005, Porsche announced the Cayenne model would have a hybrid engine launched by the end of the decade. Under pressure of tough new European environmental

standards, Porsche started promoting its new hybrid model during 2007. However, on the day of the model's media release, Porsche's headquarters, and main plant in Zuffenhausen, Stuttgart was the stage of a Greenpeace demonstration. Activists brought with them a pink-colored Cayenne model disguised as a pig and held a banner which read: "Porsche builds climate pigs". Porsche claimed they had finally made a name for themselves by receiving such protests and placed signs at their plant asserting that the organization's cars contributed to less than 0.1% of CO2 emissions in traffic and that it had the lowest CO2 emissions per horsepower (Porsche SE, 2007). Porsche's leadership also stated, *"we are not the dirty dogs of the industry"* (Wendelin Wiedeking, Porsche CEO, in Boyes, 2007, p. 9) and mentioned that starting in 2008, all Porsche models would not only fulfill the EURO 5[3] emission standards coming into force in 2009 but would also already fulfill EURO 6, scheduled to come into force only in 2014 (Wendelin Wiedking, Porsche CEO, in McClellan, 2007). Different European directives, which updated provisions of previous directives concerning quality of petrol and diesel fuels and promotion of clean and energy-efficient road transport vehicles also came into effect during the ICE phase.

Internally, the ICE phase is distinguished by the organization's engagement with Volkswagen AG (VW). Until then, VW was an important technological and production partner, involved in over one third of Porsche's sales volume (Porsche AG, 2005). Anticipating the annulment of the VW Law, which gave the German state a blocking 20% minority vote and capped all voting rights at the same level within VW, while pre-emptively protecting VW from a possible hostile takeover by investors with such annulment, Porsche became a major shareholder of VW by purchasing 20% of its voting stock in 2005 (Porsche AG, 2005). Porsche gradually built its stake in VW every year until 2009, when it held a total of 50.7% voting stock shares of the Wolfsburg based auto-giant. In 2007, as a majority shareholder in VW, Porsche decided to separate its operating business from its financial investments. Porsche Automobil Holding Societas Europeae (Porsche SE) renamed the old Dr. Ing. h.c.F. Porsche Aktiengesellschaft (Porsche AG) and became an automotive holding company, dedicated to the holding of the VW shares and other automotive industry investments. At the same time, a new Dr. Ing. h.c.F Porsche Aktiengesellschaft (Porsche AG) was created for the car manufacturing business. These events

[3] The EUROs refer to emission standards for vehicle exhaust emissions of new cars sold in the EU. Such standards were defined by a series of EU directives, staging the progressive introduction of increasingly more stringent standards.

were only possible due to the 2007 European Court of Justice (ECJ) decision against the VW Law (Porsche SE, 2007). More precisely, the ECJ argued the VW Law breached European laws on the free movement of capital (Porsche SE, 2007).

Considering the above, Porsche was set to takeover VW. However, during 2009, Porsche dropped the takeover intentions and decided to lay the foundation for a merger between the two automakers, forming an integrated automotive group (Porsche SE, 2009). The objective behind the merger was *"not just to ensure that the sum [was] more than the parts, but that the new group also [spearheaded] progress in terms of technological competence and quality, raising the benchmark in each of its respective market segments"* (Michael Macht, Porsche CEO, in Porsche SE, 2009, p. 4). The automaker also stated that the merger would place the organization in an excellent position to introduce alternative drive technologies (Porsche SE, 2009). In short, Porsche AG became a 100% owned subsidiary of VW and became responsible for the actual production and manufacture of the Porsche vehicle lines while Porsche SE was the majority shareholder of VW.

With the merger decision of 2009, Wendelin Wiedeking stepped down from his position as CEO as he did not agree to the terms of the deal (Porsche SE, 2009). Michael Macht, a Porsche AG Executive Board member since 1998, who oversaw Production and Logistics, was then appointed as Porsche's CEO during the same year. As Wiedeking's right-hand man and the one managing in the background during the restructuring of the car maker in the early 1990s, which was led by Wiedeking, Macht was considered the right person for the job (Porsche SE, 2009).

Towards the end of the ICE phase, Germany was setting the stage for electric mobility within the country. The National Platform for Electric Mobility was created in 2010 as an advisory council of the German Federal Government for electric vehicle introduction. Such a council had the objective of pushing on the National Development Plan for Electric Mobility, which itself had the goal of developing the country as the leading supplier and leading market for electric mobility by 2020.

Hybrid phase: period between 2010 and 2015

Porsche's reluctancy towards the hybrid technology and defensive behavior considering the low emission standards of its cars changed after the automaker launched its first fully hybrid model in 2010. During the Hybrid phase, Porsche's overall behavior was more acceptive and

progressive regarding hybrid powertrains and electrification. The embracing of the technology can be seen when, between 2010 and 2013, Porsche launched two hybrid models and two plug-in hybrid electric vehicles (PHEV). During 2010, Porsche also started testing racing competitions with the 911 GT3 R Hybrid, a first hybrid high-performance model/development vehicle. With the launch of the Cayenne S E-Hybrid, Porsche was the first automaker to launch a plug-in hybrid in the premium Sports Utility Vehicle (SUV) segment (Porsche AG, 2015a). The feat classified the organization as being *"on the vanguard of plug-in hybrids […] making [Porsche] the only marque already offering three plug-in models in the premium segment"* (Wolfgang Hatz, Porsche Head of R&D, in Porsche AG, 2015a, p. 45). So not only did the organization embrace the technology but presented themselves as pioneers of the next generation of hybrid engines, the PHEV. In 2013, Porsche launched the 918 Spyder, a limited-production PHEV model, and, in 2014, the 919 Hybrid, a Le Mans Prototype 1 (LMP1) racing car. Porsche referred to the two latter models as "*an open declaration by Porsche of the kinds of technologies that might be available in future models"* and assured that "*the vehicles to achieve these feats [maximum efficiency] [would] see their first kilometers on the test track in Weissach [Porsche's R&D location]* (Porsche AG, 2015a, p. 40).

It was during the Hybrid phase when Porsche decided to make a big step back into its victorious history in motorsport to continue the development of the hybrid engine, by testing it on the racetrack (Porsche AG, 2012). However, rather than just sponsoring or constructing the sports cars used during racing events, Porsche was now responsible for a factory-run car. This meant that Porsche was fully responsible and engaged with the development (engineering-wise) of a racing car and management of a motorsport team under its own name (Porsche AG, 2012). With this, during 2011, Porsche announced it would be back to top league motorsport racing, after a 12-year hiatus, by participating in the 24 hours of Le Mans and in the FIA World Endurance Championship as of 2014 (Porsche AG, 2012). The automaker stated that

> *[t]he classical Porsche virtues of efficiency and reliability are more crucial in a 24-hour race than in any other motorsport discipline. So it [was] only consequent that an LMP1 sports prototype as the latest addition in a long line of ancestors should contest in Le Mans from 2014* (Porsche AG, 2012, p. 92).

With the announcement, Porsche was back on the racetrack but now with a hybrid drive.

Internally, there were changes to the organization's leadership, corporate structure, and corporate plans. During 2010, Matthias Müller, who until then held positions at VW Group as General Representative and Product Strategist, replaced Michael Macht as Porsche's CEO. Müller's experience within the VW Group and the integration of Porsche with VW made him *"the ideal man for the job"* (Porsche SE, 2010, p. 9). Macht, who only served as Porsche's CEO for about a year, was then appointed to the Board of Management of VW, holding responsibility for the Group's production (Porsche SE, 2010). During 2012, the integration of Porsche with VW officially happened, after the two automakers did not meet the merger deadline set for 2011. During 2011, Porsche launched its new corporate strategy, named "Strategy 2018". Strategy 2018 had the *"declared vision of securing Porsche a lasting position as the world's most successful manufacturer of exclusive sports cars"* (Porsche AG, 2012, p. 3) and encompassed four major goals. The first goal was to *"spark [Porsche's] customers enthusiasm with a unique purchasing and ownership experience"* (Porsche AG, 2012, p. 3). The second goal referred to maintaining Porsche's current *"position as one of the most profitable carmakers in the world for the long term, with a return on sales of at least 15 percent and a return on capital of at least 21 percent"* (Porsche AG, 2012, p. 3). The third goal aimed at being *"an excellent employer, ensuring employee motivation and commitment, and to be a fair and reliable partner for all its stakeholders – investors, suppliers and dealers alike"* (Porsche AG, 2012, p. 3). The fourth and final goal was to *"increase unit sales to around 200,000 vehicles by 2018"* by *"leveraging [Porsche's] immense innovative strength and vigorously promoting [its] development efforts"* (Porsche AG, 2012, p. 3).

On a regulatory level, there were changes to the emissions trading schemes set by the Kyoto Protocol, the German parliament established the Electromobility Act and new European emission standards came into force. The new rules of the emissions trading schemes meant the setting of an overall European Union (EU) cap, with allowances allocated to EU members, and tighter limits on the use of offsets. In 2014, the Electromobility Act enabled measures to give priority to electric vehicles on road traffic. By giving electric vehicles priority, this would aim to promote their use and would be seen as an effort to reduce the climate and environmentally harmful effects of motorized individual traffic in Germany. Finally, during 2015, the sixth stage, EURO 6, of the European emission standards came into force. With this, Porsche models were now under a stricter limit of emission standards.

As Porsche started to fully embrace the hybrid technology, the automaker also started to align the technology to the sportiness provided by its models by claiming that *"[s]porty performance and environmentally sound reduction of consumption and emissions are not irreconcilable opposites"* (Porsche AG, 2012, p. 75). By bringing together the themes of environmental and fuel efficiency and sports performance, a fully electric Porsche was considered as the next logical step for the organization (Stefan Weckbach, Porsche Head of Battery Electric Vehicles, in Willenbrock, 2019).

EV phase: period between 2015 and 2020

The EV phase is marked by the complete involvement of Porsche with electric vehicles and electrification of the auto industry. The Porsche Mission E, which later was officially named "Taycan", premiered at the Frankfurt International Auto Show in 2015, and *"[t]he decision made by the company's Supervisory Board […] to build Porsche's first all-electric sports car signal[led] the start of a new chapter in the history of the brand"* (Porsche AG, 2016a, p. 119). This led to the announcement and series production approval by the Board of a second fully electric model, the Mission E Cross Turismo, and the electrification of an already existing model, the Macan. During 2019, the Taycan made its world premiere and reached Porsche dealerships across the globe. Porsche called it *"the dawning of a new era"* within the organization (Porsche AG, 2020b, p. 8).

The EV phase also included a highly significant event within the automotive industry and was very close to home for Porsche – the VW diesel scandal, which came to light in 2015. The scandal came to light when the United States Environmental Protection Agency found that VW cars powered by diesel being sold in the country had a software that could detect when they were being tested for emissions, changing the performance accordingly to improve results. As a result, during 2019, Porsche paid a €535 million fine, which the automaker claimed was an important step towards concluding the proceedings and ending the diesel topic within the organization (Porsche AG, 2019d). Porsche had already decided to withdraw diesel models from its product range back in 2018, but the announcement of the settlement related to the scandal also highlighted that Porsche was fully centered on the development of cutting-edge gasoline engines, high performance hybrid powertrains and electric mobility (Porsche AG, 2019d). The decision was tied to Porsche's claim that interest in hybrid models was increasing enormously, while in contrast, demand for diesel models was declining (Porsche AG, 2020a). The automaker also claimed that

"[a]s early as 2025, half of all new Porsche vehicles could feature an electric drive system – either hybrid or fully electric" (Porsche AG, 2020a). Therefore, Porsche expressed full commitment to EVs.

Once Porsche announced the series production of the Taycan, the organization emphasized its new electric sports car was "*not a concession [to the market, but] more of an enrichment […] setting a bold exclamation mark for the future of the brand"* (Oliver Blume, Porsche CEO, in Porsche AG, 2016b, p. 3). Porsche was *"resolutely taking on the challenge of electric mobility. Even with solely battery-powered sports cars, Porsche [was] remaining true to its philosophy and offering customers the sportiest and technologically most sophisticated model in this market segment"* (Oliver Blume, Porsche CEO, in Porsche AG, 2015b, p. 6). Electric cars were described as the *"perfect fit"* for the organization (Stefan Weckbach, Porsche Head of Battery Electric Vehicles, in Porsche AG, 2018f, p. 21) *"not just because they share a high-efficiency approach, but especially because of their sporty character"* (Oliver Blume, Porsche CEO, Porsche AG, 2019b, p. 3). In the EV phase, Porsche's efforts towards electric cars and electromobility started to become apparent in different aspects within the organization:

Investments. In terms of financial commitment, the automaker progressively increased pledges towards electromobility. During 2015 Porsche announced that it would invest €1 billion into Mission E (Porsche AG, 2016a). This developed to another €2 billion being destinated to the construction of the new electric car factory and further development of the hybrid engines. During 2018, Porsche announced it would double its initial investment of circa €3 billion in electromobility, to over €6 billion, by 2022 (Porsche AG, 2019a). Finally, during 2020, Porsche announced it would invest even further into electric mobility by pledging circa €15 billion by 2025 in the electrification, digitalization, and sustainable production of its cars, consistently expanding its electromobility offer (Porsche AG, 2021).

Motorsport. In 2016, at the beginning of the EV phase, Porsche announced it would *"reorganize [its] motorsport strategy and align it with [their] corporate strategy"* (Michael Steiner, Porsche Member of the Executive Board for R&D, in Schurig, 2017, p. 3). This meant, starting from 2019, a switch away from endurance racing with a PHEV to Formula E, where racing was strictly with a fully electric engine. By doing so, the organization mentioned it would be able to *"generate added value in the development of future electrically powered series vehicles based*

on the large number of interesting technical topics in Formula E" (Michael Steiner, Porsche Member of the Executive Board for R&D, in Schurig, 2017, p. 5).

New ventures and partnerships. Nonetheless, the automaker's efforts were not limited to the product offering – Porsche started to present itself as part of a bigger strategic transformation of the automotive industry, beyond a single product. The letter from the Executive Board of Porsche AG published within the automaker's 2017 AR made a clear statement about how the organization decided to tackle its own future within the context of (electric) mobility:

> *Seventy years after the first Porsche sports car was created, and at the threshold of a new era in automobile development, [Porsche is] combining tradition with innovation […] putting uncompromising sportiness onto the road, together with the benefits of new technology. We are adapting the power of our history to fulfil the requirements of future individual mobility. […] Porsche is developing itself, from a manufacturer of exclusive sports cars into a leading provider of digital mobility solutions in the premium segment of automobile manufacturer* (Porsche AG, 2018a, p. 7).

Emphasizing that the shift to electric mobility was beyond the car itself, Porsche went on to investing in charging infrastructure and digital solutions that met the expectations of its customers and the sports car of the future. This also meant that the automaker started new ventures and created new partnerships.

During 2016, Porsche established a joint venture – IONITY – alongside the BMW Group, Daimler AG, Ford Motor Company and Audi, a fellow VW Group automaker, with the objective to construct and operate 400 powerful fast charging stations along the major European traffic routes by 2020 (Porsche AG, 2017d). The difference between the "Turbo Charging" and other conventional charging stations was that it charged 80% of the battery in just 15 minutes, basically eliminating the customer concerns of slow charging times being experienced in the industry so far (Porsche AG, 2017d; 2018b). Porsche was confronted with the chicken-and-egg dilemma considering the charging infrastructure:

> *No charging network, no electric vehicles. And if there are no electric vehicles, no one will invest in a charging network. So we can only sell electric cars if we give customers the security of knowing that there is a viable charging network available* (Michael Kiefer, Porsche Manager of High Voltage Systems, in Schilder, 2018, p. 3).

Porsche Digital GmbH, a 100% owned subsidiary of Porsche AG, was established in Berlin, Germany during 2016 and was considered the organization's *"digital innovation offensive"* (Porsche AG, 2017b, p. 11). The objective of the organization was identifying and developing digital customer experiences, products, business fields and business processes, with the intention to establish a leadership position as a provider of digital mobility solutions in its high-end car segment (Porsche AG, 2017b). The subsidiary later set foot in other technology hubs, such as in the Silicon Valley, Barcelona, Beijing, Shanghai, Tel Aviv, and Zagreb, demonstrating its commitment to the new digital era within the automotive industry and positioning itself strategically within these innovation hubs.

The EV phase was also a period where Porsche created partnerships around EV production and development. In 2018, Porsche acquired shares of Rimac, a Croatian startup that develops and produces electric sports cars, drivetrains, and battery systems (Porsche AG, 2019a). The automaker also announced the development of joint car architectures for EVs alongside Audi, a historic partner in car parts development (Porsche AG, 2017d). Therefore, it was clear that Porsche was seeing its future as an EV manufacturer.

Corporate strategy. During the EV phase, three different corporate strategies were rolled out by the organization, which saw a progressive level of incorporation and importance to the topics of digitalization, electromobility, and sustainability. In 2016, "Strategy 2025" set the future of the sports car as its main priority (Porsche AG, 2017b). For Porsche, the sports car of the future would combine the tradition and values of the Porsche brand with the upcoming innovative technologies, while ensuring sustainability (Porsche AG, 2017b). "Strategy 2025" added innovation and sustainable business practices as corporate objectives. Key themes involved in the latter were electrification, digitalization, and innovation, *"[assuming] the task of shaping the exclusive and dynamic mobility of tomorrow"* (Porsche AG, 2017b, p. 28). During 2019, "Strategy 2025" was reformulated as "Strategy 2025 Plus", which highlighted a stronger alignment amongst product, sustainability, and innovation (Porsche AG, 2021). Finally, "Strategy 2030" was a strategy based on different societal and trend scenarios created by the automaker itself (Porsche AG, 2021).

The different corporate strategies were led by Oliver Blume, who became CEO right at the beginning of the EV phase, in 2015. Blume further endorsed innovation within Porsche, by taking a different approach to the subject. Innovation was previously limited to the R&D department, but

he brought it over to the production area as well (Porsche AG, 2016a). Blume also wanted to make sure the innovation culture at Porsche was open, direct and results oriented. To achieve this, Blume implemented short communication channels, flat hierarchies, and open exchange of ideas (Porsche AG, 2016a). Blume also encouraged Porsche employees to make use of synergies with the VW Group, preserving the Porsche exclusive manufactory idea and, at the same time, earning the potentials from large-scale series production (Porsche AG, 2016a).

When it came to the optimization of combustion engines, Porsche said it was working on synthetic fuels, known as eFuels. *"This technology is particularly important because the combustion engine will continue to dominate the automotive world for many years to come"* (Michael Steiner, Porsche Member of the Executive Board for R&D, in Porsche AG, 2020c, p. 2). As an automaker in which over 70% of the cars ever produced are still driving across the globe, "*[wanting] to operate the existing fleet in a sustainable manner, eFuels are [considered] a fundamental component"* (Michael Steiner, Porsche Member of the Executive Board for R&D, in Porsche AG, 2020c, p. 2). This demonstrated Porsche's commitment to a mobility revolution considering the environmental aspects of its cars. The organization invested €20 million in the project alongside other interested partners and claimed *"eFuels are a sensible addition to electromobility and make a further contribution to climate protection"*, as they are suitable for combustion engines and plug-in hybrids (Porsche AG, 2021, p. 46). The automaker also backed the investment in eFuels as it saw electromobility in itself as not enough to achieve what the automaker wanted in terms of sustainability, or at least not as quickly as Porsche desired (Michael Steiner, Porsche Member of the Executive Board for R&D, in Porsche AG, 2021). The automaker also envisioned the application of eFuels in motorsport where cars still run on, or partially on, fossil-based fuels (Porsche AG, 2021).

In conclusion, during the EV phase, Porsche communicated about concrete steps and gave strong indications towards a future that puts electrification, digitalization, and sustainability at the center of its activities and what it stands for. Overall, the case chronology shows Porsche went from being highly skeptical of the hybrid technology, to completely embracing the electrification of engines, including hybrid ones. The automaker also decided to take on a more active role and considered itself a "shaper" of the future of sustainable mobility, providing innovative products, pioneering technologies, and attractive services (Porsche AG, 2021).

4.2 Second-order analysis: Identity change over time

As previously presented in section 3.2, Porsche is in the process of dealing with the transition to electric mobility and the related changes to its CI. When asked if Porsche's identity could change, the answer was: *"Of course. In fact, you have to let your identity continue to evolve. We are experiencing that at the moment. We are currently in the middle of a massive technological upheaval"* (Oliver Blume, Porsche CEO, in Porsche AG, 2018g, p. 51). These changes to Porsche's CI are due to the electric engine, which is seen as a threat to the conventional combustion engine that corresponds to the racing and speeding lifestyle provided by Porsche's product offering over its 70 years of existence. Additionally, the electric engine has been regarded as a solution to the greenhouse gas emissions and pollutants generated by the combustion engine. With this, Porsche has been dealing with a threat to the legacy product that it stands for.

The second part of the analysis highlighted which elements of continuity and change Porsche emphasized in its communication over the process of responding to this identity threat. Referring back to the research question *(How does an incumbent organization deal with an identity threat caused by a sustainable transition in its external communication? Which corporate identity elements does it alter, maintain and disrupt?)*, it is important to highlight that the data did not demonstrate any CI element or sub-element was disrupted, i.e., where Porsche argued they had to completely abandon parts of their identity or adopt novel ones. Instead, Porsche's communication demonstrated a gradual process of reinterpreting and reframing certain elements of their identity.

Table 2 below demonstrates how the data was structured to reach the conclusions about continuity and change of the CI elements and sub-elements throughout Porsche's journey towards electrification. Remember that the first round of coding highlighted references under each CI element, then a second round of coding highlighted indications of maintenance or change of the CI element and identified specific themes within them. Finally, these themes were compared across the phases to generate a model of the overall change process within the automaker's communication. The results of the second round of coding will be presented in this section.

Maintenance was linked to three themes: continuous focus on emotional sportiness, preserving the production location, and continuous and intensified cooperation with VW. In turn, *change* was linked to five themes: from results-oriented to product development-oriented strategy, aligning motorsport strategy for product development, stronger emphasis on sustainability, re-training of the workforce and hiring specialized employees, and, finally, addition of novel

production processes. Each of these will now be discussed in greater detail. Table 2 provides evidence for each theme and the interested reader can find additional evidence on Appendix B.

Table 2: *Selected data supporting each theme.*

Maintenance	Change
Continuous focus on emotional sportiness.	***From results-oriented to product development-oriented strategy.***
• "But I can allay their concerns: the purely electrically driven Porsche contains **everything that you would expect from our brand – extremely sporty driving dynamics, outstanding performance, and last but not least, a great deal of emotionality**." – Oliver Blume, CEO, 2019 • "We will be the producer of very sporty luxury cars. That's it. **Our core business is and will be sports cars in the future**." – Wendelin Wiedeking, CEO, 2007 • "Porsche will be **just as sporty as the Porsche of today**." – Oliver Blume, CEO, 2016 • "But I can assure them that they'll find **everything they expect from our brand** in a purely electric Porsche like the Taycan: **extremely sporty driving dynamics, outstanding performance figures, and not least of all, a high degree of emotional appeal."** – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2019	• ""**Strategy 2018" provides a guideline for our entrepreneurial activities. We have derived four corporate goals from our declared vision of securing Porsche a lasting position as the world's most successful manufacturer of exclusive sports cars**." – Porsche AG, 2011 • "The future of the sportscar – this is the theme of Strategy 2025. **At the heart of the strategy is the future product portfolio**." – Porsche AG, 2016 • "**The themes of electromobility and vehicle architecture of the future are cornerstones of the Porsche Strategy 2025 Plus**" – Porsche AG, 2019 • "**A strategy leads to success when it is recalibrated over and over, and flexibly adapted to new parameters.** […] **And that is exactly what we have done: Strategy 2030 replaced Strategy 2025 Plus at the end of the financial year. Why? The world is changing at breakneck speed. It is becoming more digital, more connected also and more volatile…"** – Porsche AG, 2020
Continuous and intensified cooperation with VW.	***Aligning motorsport strategy for product development.***
• "By the end of this decade we will therefore be **introducing a Cayenne with hybrid driveline – a joint development project with the Volkswagen Group**." – Porsche AG, 2005 • "The industrial logic of our Volkswagen participation is therefore also to be sought in **the fact that Porsche will cooperate with Volkswagen in important technological areas**, which will result in significant economies for both parties." – Wendelin Wiedeking, CEO, 2005 • "At the end of November 2016, Porsche **invested in a joint venture for an ultrafast, high-performance charging network for electric vehicles. With this effort, the Volkswagen Group with Audi and Porsche**, Daimler AG, the BMW Group and Ford Motor Company intend to achieve significant gains in the long distance travel capability of vehicles with electric motors." – Porsche AG, 2016 • "**We're working very closely with our counterparts, in particular at Audi, on the use of joint modules for the e-vehicles we are currently planning.** The brands are also working on the joint development of a platform for new BEV projects in the future." – Stefan Weckbach, Head of Battery Electric Vehicles, 2018	• "With this level of concentrated technological expertise, **we are also taking on motorsports.** After rolling out our highly innovative 919 Hybrid racing car last summer, the **2014 Porsche Team will be at various starting lines of the World Endurance Championships, including the legendary Le Mans track in June 2014. The toughest endurance race in the world will serve as our laboratory and test bench for our hybrid vehicle developments**." – Porsche AG, 2013 • "**We have decided to reorganize our motorsport strategy and align it with our corporate strategy**: As well as pure GT road-going sports cars, fully electric sports cars are a fixture of this strategy […] In the future, we will split our commitment between conventionally powered products in GT and customer racing, **and an increased focus on electromobility. That is why we will enter Formula E in 2019**." – Michael Steiner, Member of the Executive Board for R&D, 2017 • "After more than 30 years, Porsche returns to single-seater racing. **Entering Formula E and the accompanying restructuring of the motorsport involvement can be derived from the 2025 Porsche strategy**." – Porsche AG, 2019 • "**Porsche had decided to start again with an LMP1 prototype in 2014 at the 24 Hours of Le Mans and in the World Endurance Championship […] Many components and concepts with which it established itself as the most successful Class 1 prototype found their way into road vehicles such as the Panamera Turbo S E-Hybrid**." – Porsche AG, 2019
Preserving the production location.	***Stronger emphasis of sustainability.***
• "Blume added that the E Mission project **underlines the importance of Stuttgart-Zuffenhausen as a production site**, of Baden-Württemberg as a center of technology and of the whole German automotive industry." – Porsche AG, 2015 • "**This is where the heart of Porsche beats.** Everything has developed from here; this is where the future has a tradition. Zuffenhausen is the home of the 911, the icon of the brand. **What could be a better site for a car that marks the beginning of a new Porsche era?**" – Oliver Blume, CEO, 2016	• "**Sporty performance and environmentally sound reduction of consumption and emissions are not irreconcilable opposites**" – Porsche AG, 2011 • "**Electric drive systems offer, first of all, the possibility of CO2-neutral and zero-emission mobility. Another bit of good news: electric motors also offer an outstanding driving experience. Being CO2-neutral and fun to drive are not mutually exclusive.** An electric vehicle is a highly emotional product." – Dirk Lappe, Technical Director at Porsche Engineering, 2016

• "This project involves the emergence of a **completely new plant at our headquarters in Zuffenhausen – a factory within the factory**." – Porsche AG, 2017 • "The decision was made in light of the fact that we wanted to build the Taycan here at the **Zuffenhausen site, the birthplace of Porsche, even though this requires more investment in an existing factory than, say, Leipzig**." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018	• "The sports car of the future **combines the tradition and values of the Porsche brand with innovative technologies and sustainability**." – Porsche AG, 2017 • "People who visit or simply drive past the headquarters in the future should **immediately recognize that Porsche places a premium on sustainability and climate protection**." – Porsche AG, 2018
	Re-training of the workforce and hiring specialized employees. • "**In the next few years, thousands of employees working in production at the site in Zuffenhausen will undergo a huge number of qualification and training programs, giving them the skills they need to overcome the challenges associated with these technological changes**." – Porsche AG, 2018 • "**The Taycan is one of biggest creators of jobs in the history of Porsche**. Not all of these new employees will be producing the Taycan; they will also build two-door sports cars. **Porsche's aim for the Taycan is to create a team with a healthy mix of experienced sports car manufacturers and new staff**." – Andreas Haffner, Member of the Executive Board for Human Resources and Social Affairs, 2018. • "At the same time, the sports car manufacturer is establishing an **unprecedented qualification initiative, in which the topic of electric mobility at Porsche is introduced to Porsche employees. All employees are offered a four-day qualification program in addition to extensive e-learning opportunities. For the colleagues which are directly involved in the production of the Taycan a multiweek training is planned**." – Porsche AG, 2019 • "**This marks the dawn of a new era – and one requiring intensive preparation**, **most notably for the Taycan production staff**. […] **Topics such as sustainability, charging infrastructure and charging services are discussed in an in-depth and open manner**. Participants are also treated to a detailed look at all of the Taycan's technical features and functions. **The training focuses on establishing a tangible and emotional link between the participants and the course content**." – Porsche AG, 2019
	Addition of novel production processes. • "**We're reinventing our main site with the Taycan, building a factory within a factory**. **We're integrating a completely new production facility with new technology and new processes…"** – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2019 • "**[T]he ongoing development of Porsche Production 4.0** and an unparalleled knowledge campaign rolled out throughout the entire company: **in firmly committing to electric mobility, the sports car manufacturer is undergoing a process of major change and once again reaffirming its ability to safeguard its future**." – Porsche AG, 2018 • "To produce the Taycan, **Porsche is dispensing with rigidly interlinked belt installations, instead ushering in a new era in vehicle production**. As far as the Taycan is concerned, the traditional production line has had its day." – Porsche AG, 2018 • "Moreover, **we're putting highly innovative production methods into practice with the Taycan and taking a step toward the factory of the future. We call it Porsche Production 4.0—smart, lean, and green.**" – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018

It is important to highlight that, at times, themes contained references pointing to both maintenance and change. For example, references under the theme "preserving the production location" speaks about maintaining the physical location of Porsche's production facilities, but also about refurbishing these facilities. In such cases, a judgement call was made in light of the entire data whether change or maintenance was highlighted to a greater extent. In the case of "preserving the production location", for instance, Porsche emphasized the legacy location is part of the automaker and its product offering in the past, present, and that it would continue in the future. Therefore, the communication on the topic demonstrated the theme was a constant within Porsche's identity and classified under "maintenance".

4.2.1 Corporate identity sub-elements that were maintained

4.2.1.1 Continuous focus on emotional sportiness

Differentiation strategy is an important CI element for Porsche. What differentiates a Porsche from other luxury cars in the market is that *"no other cars bring sportiness to the streets like a Porsche"* (Porsche AG, 2014, p. 77). *"Porsche stands for sporty-high performance engines"* (Oliver Blume, Porsche CEO, in Porsche AG, 2016c, p. 3). Porsche aficionados are also attracted to the brand as their models can deliver a sporty and performance-oriented drive experience, while also being able to deliver an everyday drive experience – embodying lifestyle and utility (Porsche AG, 2014). Thus, emotional sportiness delivered by Porsche models stands out as a differentiation factor and brand value to its consumers.

Emotional sportiness is a sub-element of CI that Porsche maintained throughout the organization's journey towards electrification. *"What we offer will in part be different. But whatever is labelled Porsche must always be a Porsche inside. I call it emotional sportiness"* (Oliver Blume, Porsche CEO, in Porsche AG, 2016b, p. 4).

The emotional sportiness was present in the ICE, hybrid and fully electric cars produced by Porsche. When informing about the sales of its ICE cars in the 2005/2006 AR, Porsche details that its models *"met the high expectations of Porsche customers in terms of sportiness, dynamism and driving enjoyment coupled with excellent everyday performance"* (Porsche AG, 2006, p. 42). This same tone is used to describe Porsche's PHEV models, which *"confidently handles any demands made by drivers looking for sportiness, agility, responsiveness, and excitement on the road"* (Porsche AG, 2013, p. 107). Regarding the Taycan, the same sportiness character was

present, as the *"goal was to usher in the era of electromobility for Porsche with the sportiest, most innovative and most emotionally charged of cars"* (Oliver Blume, Porsche CEO, Porsche AG, 2020b, p. 48) The Taycan *"combines the sportiness and everyday usability typical of Porsche […] We're building on our brand values and aiming to ensure that our purely battery-powered vehicles can still deliver on the promises customers are already familiar with from our conventionally powered vehicles"* (Stefan Weckbach, Porsche Head of Battery Electric Vehicles, in Porsche AG, 2018f, p. 10). "Soul, electrified" – the slogan attached to the Taycan – also brings this feeling and persuasive statement that the new fully electric Porsche remains true to the Porsche "soul".

In summary, Porsche kept true to its sporty differential in any given phase. The continuous focus on emotional sportiness is a theme that the automaker maintained as part of its CI throughout its journey towards electrification.

4.2.1.2 Continuous and intensified cooperation with Volkswagen

Cooperation with VW is an aspect that is tightly coupled with the organization's journey towards electrification and was a theme that was constant within Porsche's corporate behavior during the studied timeframe. The link between the two automakers working together towards electrification can be traced back to when Porsche decided to develop its first hybrid model in 2005 up-to the launch of the Taycan in 2019.

Looking to meet the emission standards imposed by the EU starting in 2005, the partnership with the German auto-giant meant that engineering expertise could be shared, and engineering costs could be reduced (Porsche AG, 2012). Porsche's joint project with VW on the Cayenne and Touareg, both SUV models constructed by each of the brands, had already been proof of a successful partnership (Porsche AG, 2012). The Cayenne project turned out to be a success story within Porsche as it is considered a symbol of the organization's turnaround from a financially gloomy reality in the late 1990s and the establishment of a new segment at the automaker (Porsche AG, 2012).

When Porsche decided to purchase VW shares in 2005, the organization also declared that it did not merely see itself as an investor, *"but rather as a strategic and industrial partner"* (Porsche SE, 2007, p. 4). The automaker also stated that the integrated automotive group would place the organization in an excellent position to introduce alternative drive technologies (Porsche SE, 2009). Previously, the automaker had already indicated that environmental concerns would

force automakers such as itself to look for partners in drivetrain technology (Wendelin Wiedeking, Porsche CEO, in Stein, 2007). Porsche made a clear statement that it wanted technology and shared investment in new technologies alongside the partnership with VW (Wendelin Wiedeking, Porsche CEO, in Brown et al., 2007). The hybrid model announcement made in Porsche's 2005/2006 AR stated that the project was being held in partnership with VW, as the Wolfsburg-based partner was also developing a hybrid Touareg and both cars shared parts and platforms from the previous successful partnership (Porsche AG, 2006). During 2012, VW's corporate R&D and Porsche Engineering Group GmbH, a wholly owned subsidiary of Porsche AG, partnered to take on the leadership of the "e-generation" research project to develop a new generation of components for electric vehicles (Porsche AG, 2013). The project, which was partly funded by the German Federal Government, had as one of its main objectives achieve cost benefits through modularization and modular component sets for electric cars (Porsche AG, 2013). During 2016, Porsche came up with the idea of cooperating with VW on fully electric vehicles (Oliver Blume, Porsche CEO, in Hanley, 2018). Porsche and Audi founded two project houses for the cooperation. The project houses were located in each of the automaker's headquarters, *"distributing the responsibility so that every brand [had] the vehicle modules that best [suited] them. […] Teams from both brands [worked] together to lay the foundations for future e-vehicles"* (Porsche AG, 2018d, p. 7). E-mobility was also considered a "Herculean task" in monetary terms (Porsche AG, 2018f). Therefore, *"[g]roup-wide cooperation [was considered] a huge plus for [Porsche]"* (Stefan Weckbach, Porsche Head of Battery Electric Vehicles, in Porsche AG, 2018f, p. 26). If Porsche had to cope with electromobility challenges on its own, the costs would be around 30% higher, which demonstrates the financial importance of such collaboration (Oliver Blume, Porsche CEO, in Porsche AG, 2018c).

The synergies created with Audi also generated the development of a joint architecture for electric vehicles. More specifically, the cooperation led to the creation of the Premium Platform Electric (PPE), which had the goal of *"[shaping] the mobility of tomorrow together and to put future electric vehicles on the market more quickly"* (Porsche AG, 2018c, p. 2). Together, *"both high-tech brands [created] more opportunities for the topics of electrification, digitalization and autonomous driving"* (Porsche AG, 2018c, p. 2). The partnership with Audi also extended itself to the creation of IONITY, an ultrafast, high performance charging network for EVs. As members of the VW Group, both brands created the joint venture with other automakers to obtain substantial

gains in the long-distance travel capability of vehicles with electric motors (Porsche AG, 2017b).

In summary, cooperation with VW played an important role as part of Porsche's CI in its journey towards electrification. It was a CI sub-element that was maintained across all phases identified in the study and the cooperation between the two automakers was directly reflected on the hybrid and electric cars Porsche produced. *"Porsche couldn't have made it into electromobility and digitalization on its own [referring to Volkswagen]"* (Hans Michel Piëch, Porsche founding family member, in Hawranek, 2016, p. 25).

4.2.1.3 Preserving the production location

The "Made in Germany" seal of Porsche's cars *"is a very important selling point"* (Oliver Blume, Porsche CEO, in Deutsche Welle Business, 2016, p. 2). Porsche's decision to produce its first EV in Germany and within the automaker's main plant, Zuffenhausen, where some of the brand's iconic models were first produced, demonstrated a continuity of this selling point, and maintained strong links to the automaker's corporate history. Porsche stated the production site of its first fully electric car was established

> *where the heart of Porsche beats. Everything has developed from here; this is where the future has a tradition. Zuffenhausen is the home of the 911, the icon of the brand. What could be a better site for a car that marks the beginning of a new Porsche era?* (Oliver Blume, Porsche CEO, in Porsche AG, 2016b, p. 15).

Ever since Ferdinand Porsche founded the automaker in 1931, all Porsche models were made in Germany. Throughout the entire period studied in the research, Porsche models have been either produced in their factory in Zuffenhausen, a district of Stuttgart, or in Leipzig in the state of Sachsen. When the Taycan series production was approved and announced by the organization's Board in 2015, the statement also emphasized that the car would be produced in Zuffenhausen (Porsche AG, 2015b). *"Zuffenhausen is where the Porsche legend was born, and it lives on"* with the Taycan (Uwe Hück, Porsche Chairman of the General Works Council and Deputy Chairman of the Supervisory Board, in Porsche AG, 2016c, p. 4). Porsche also stated that Leipzig was not considered as a production location for the Taycan as *"Zuffenhausen is the birthplace of [Porsche's] sports car. The Taycan is a clear sign of [Porsche's] commitment to this traditional site"* (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e, p. 11).

To maintain the tradition for its EV, Porsche *"deliberately decided to produce this iconic new car at its main site in Zuffenhausen, the heart and home of the brand"* (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e, p. 3). To be able to produce the Taycan at Porsche's main plant, the site was restructured, building a factory within a factory (Porsche AG, 2017a). It was considered an open-heart surgery by the automaker (Porsche AG, 2019e). Restructuring included the expansion of the body shop, the building of a new paint shop, assembly hall, engine assembly hall and installation of a new conveyor technology throughout the site, which cost over €1 billion (Porsche AG, 2017a).

Such decisions made by Porsche demonstrated that the organization wanted to make a clear statement that its first EV would be built at the site where an important part of the brand's history was located. Production in Zuffenhausen made sure that the first fully electric Porsche did not lose a very important selling point and was closely related to the automaker's roots and heart. Therefore, the production location is a CI sub-element that Porsche decided to maintain on its journey towards electrification.

4.2.2 Corporate identity sub-elements that changed

4.2.2.1 From results-oriented to product development-oriented strategy

During Porsche's journey towards electrification, the organization made changes to its overall corporate strategy which, overtime, became guided by the topics of digitalization, electromobility and sustainability. It was clear that the automaker's corporate mission and vision were adjusted to adapt to the new reality it was facing.

The first official corporate strategy present within the studied timeframe was "Strategy 2018" and had the *"declared vision of securing Porsche a lasting position as the world's most successful manufacturer of exclusive sports cars"* (Porsche AG, 2012, p. 3). Thus, the focus of the strategy was oriented towards holding a superior market position and achieving specific results that had brought the automaker to its current sales and financial success. At the time, Porsche also claimed to be the most profitable car manufacturer in the world (Porsche AG, 2012).

During 2016, "Strategy 2018" was substituted by "Strategy 2025" and was a *"project dedicated to shaping the future of the sports car"* (Porsche AG, 2017b, p. 10). With this, there was a clear shift of mission of this strategic plan, which now put Porsche's product offering at the center of the strategy. Additionally, this was a moment when Porsche decided to incorporate

innovation and sustainable business practices as an objective within the new corporate strategy (Porsche AG, 2017b). Key themes that integrated this new corporate objective were electrification, digitalization, and innovation (Porsche AG, 2017b). This revealed how the corporate strategy gained a new dimension, which was more product-oriented and forward-thinking – concerned with adjusting the organization's product offering to a new reality. This fact also demonstrated that the automaker recognized that the electrification of the drivetrain was the path to follow. The new strategy also shed light on the automaker's sustainability practices, which became a stronger global interest after the signing of the 2015 Paris Climate Accord.

In the course of 2019, "Strategy 2025" was reformulated as "Strategy 2025 Plus" and was considered a sharpening of the previous one (Porsche AG, 2020b). The sharpened strategy was guided by further advancements of the cross-cutting issues of product, sustainability and innovation being tackled to an even greater extent across the business at Porsche (Porsche AG, 2021). Therefore, Porsche decided to give an even greater importance to the topics and wanted to promote and emphasize that product, sustainability, and innovation were comprehensive in scope.

Finally, "Strategy 2030" was launched in 2020 and was considered a view into the future (Porsche AG, 2021). "Strategy 2030" was based on three different scenarios created by Porsche. The "Digital Frontiers" scenario encompassed the automaker's ability to navigate an ever-increasing digitalized world. The "Equilibrium Race" scenario highlighted how climate change was changing people's views and values. The final "Game of Cities" scenario illustrated the life in megacities (Porsche AG, 2021). The scenarios chosen by Porsche also highlighted the topics that became central to the automaker's strategy, which had fully incorporated digitalization, sustainability, and electromobility as the way forward.

In short, Porsche's corporate strategies moved from an image and result-oriented strategy towards a product-development oriented one, which took into consideration the digital and environmental concerns around the automaker's product offering. The changes to Porsche's corporate strategy across the studied timeframe demonstrated an increasing leading role of digitalization and electromobility tied with sustainability.

4.2.2.2 Aligning motorsport strategy for product development

Porsche's motorsport strategy played a key role in the automaker's product development into electrification and was realigned throughout the studied timeframe to reflect Porsche's overall

corporate strategy. Porsche gradually moved towards electrification, but during this journey it made sure that the racing character, which differentiates its models in the luxury car market (presented in section 4.2.1.1), was maintained. The motorsport strategy was the main contributor to this fact and was an important part of Porsche's corporate behavior during the automaker's journey towards electrification.

"Motor racing is one of Porsche's roots" (Oliver Blume, Porsche CEO, in Porsche AG, 2018e, p. 13) and *"is part of Porsche's DNA"* (Oliver Blume, Porsche CEO, in Porsche AG, 2019l, p. 4). Motorsport was also considered a *"vector for development"* within the automaker (Oliver Blume, Porsche CEO, in Porsche AG, 2019l, p. 3). Racetracks are *"essentially a testing ground for Porsche"* (Porsche AG, 2017b, p. 63) and is considered the automaker's technology laboratory (Porsche AG, 2021). As Porsche stated, "*[t]esting new technologies and innovations under extreme pressure facilitates the continuous technological enhancement of series sportscars – and this is how Porsche [transferred] its technology* [from the racetrack to series production]" (Porsche AG, 2017b, p. 63). Therefore, racing had a particularly noticeable impact on the development of battery technology and other car characteristics.

Since the late 1990s Porsche re-aligned its motorsport commitment: instead of competing professionally with a company-owned racing team, it supported customers in motorsport events all over the world and provided one-make vehicles for racing competitions across the globe, where all competing vehicles are identical models (Porsche AG, 2006). In 2013, this changed – Porsche announced that it would be back to the racetrack with a company-owned racing team participating in the 2014 World Endurance Championships, including the legendary Le Mans track (Porsche AG, 2014). The experience would *"serve as [Porsche's] own laboratory and test bench for hybrid-vehicle developments"* (Porsche AG, 2014, p. 5) and the insights from motorsports would help the automaker on its quest for maximum energy efficiency (Porsche AG, 2015a). The result can be considered a success, as *"[i]n terms of hybrid management, the Le Mans prototypes advanced into regions previously considered unattainable […], the 919 Hybrid [was] a rolling test laboratory [which] paved the way for the voltage level of future hybrid and electric powertrain systems"* (Porsche AG, 2019k, p. 18). At the same time, Le Mans and other races enabled innovative work in advancements of battery technology and improvement of exhaust energy recuperation systems (Porsche AG, 2019k).

During 2016, Porsche announced it would reform its motorsport strategy to align it with fully electric mobility (Michael Steiner, Porsche Member of the Executive Board for R&D, in Schurig, 2017). As of 2019, Porsche had a company-owned racing team competing in Formula E, returning to single-seater racing after more than 30 years (Porsche AG, 2019f). The automaker credited a large part of the development of the first fully electric Porsche *"[to] the presence and success in motorsport with race cars with electric drive [Formula E]"* (Porsche AG, 2019f, p. 28). Porsche further explained that

> *[i]n terms of hybrid technology and thus e-drive technology, racing and production have been enriching each other at Porsche for around a decade: the first hybrid race car, the 911 GT3 R Hybrid of 2010, went into the development of the 918 Spyder. In part, the 918 was the basis for the 919 Hybrid, which in turn influenced the development of the Porsche Formula E powertrain and the Porsche Taycan* (Porsche AG, 2019f, p. 28).

In brief, changes to the motorsport strategy were able to bring Porsche developments it needed to offer the sports car it is famous for in electric form. Although motorsport was and will remain an integral part of Porsche and its product offering, it was a CI sub-element that was re-aligned to focus on the development of electric powertrains and transferring the racetrack technology developments to series production. The automaker itself stated that the performances and successes against tough competition on the racetracks *"have shaped the image and positioning of the brand since the late 1940s – and continues to do so today"* (Porsche AG, 2019l, p. 4).

4.2.2.3 Stronger emphasis on sustainability

On its journey towards electrification, Porsche also started giving stronger emphasis to the topic of sustainability of its product offering. It was a corporate principle that gained more importance over time and became widespread within Porsche's communication, especially after "Strategy 2025" was launched. More specifically, Porsche tried to promote and emphasize the environmental benefits brought by electric vehicles. For example, the organization stated:

> *Electric drive offers, first of all, the possibility of CO2-neutral and zero-emission mobility. Another bit of good news: electric motors also offer an outstanding driving experience. Being CO2-neutral and fun to drive are not mutually exclusive. An electric vehicle is a highly emotional product* (Dirk Lappe, Porsche Engineering Technical Director, in Damköhler, 2016, p. 9).

Therefore, Porsche was bringing together its product differential with environmental benefits.

The automaker highlighted the sustainability character of the electric Porsche, which *"[would] blend the tradition and values of the Porsche brand with innovative technologies, while at the same time ensuring sustainability"* (Porsche AG, 2017a, p. 2). Porsche claimed that it had set itself the task of furthering the appeal of the brand and delivering an emotional sporty driving experience, all while fostering environmentally friendly, resource-saving mobility (Porsche AG, 2021). Aware of the success that the sporty performance, power and exclusivity of its brand and products stood for and that consumer demands of its cars were changing, as resources were becoming scarcer and emission regulations stricter, Porsche claimed that *"[f]uel efficiency, reduced exhaust emissions, lightweight construction and reusability of materials [were] becoming fundamental characteristics of a modern vehicle architecture"* (Porsche AG, 2017b, p. 38). Against this background, Porsche stated that it was determined to tackle this challenge and was *"endeavoring to build sportscars that combine performance with efficiency and exclusivity with social acceptance"* (Porsche AG, 2017b, p. 38). Additionally, Porsche stated that fuel consumption and vehicle emissions had become central to the organization and its stakeholders (Porsche AG, 2017b). Overall, Porsche defined it as redesigning the sports car with sustainability in mind (Porsche AG, 2019g).

Porsche also acknowledged its own responsibility towards sustainability as a luxury sports car manufacturer. More specifically, the automaker recognized it had a responsibility to reduce CO2 emissions from transport, although it owned a small market share as a premium manufacturer (Oliver Blume, Porsche CEO, in Porsche AG, 2019c). Moreover, Porsche stated it should perceive the prestige of its brand as giving the automaker the resources to set a positive example (Oliver Blume, Porsche CEO, in Porsche AG, 2019c). This was not only reflected on Porsche's product offering, but also within the automaker's overall operations. In 2017, Porsche started purchasing 100% green energy for 100% of its production sites and, during the same year, Porsche also started measuring the CO2 emissions of its transport logistics and started testing electric trucks in its own logistics network (Porsche AG, 2017c; 2018a). During 2019, Porsche announced it would initiate a sustainability rating of suppliers and created the "Porsche Sustainability Index", with the objective of reducing the complexity of sustainable actions while also improving measurability and control of the organizations's own actions (Porsche AG, 2020b).

In summary, during Porsche's journey towards electrification, the automaker gave a

stronger emphasis to the topic of sustainability. Mainly, it did this by linking the topic to the organization's product offering and acknowledging its role towards a sustainable future as a luxury sports car manufacturer. Altogether, the drive to associate the organization with sustainability became so strong that Porsche claimed that *"people who visit or simply drive past the headquarters in the future should immediately recognize that Porsche places a premium in sustainability and climate protection"* (Porsche AG, 2018i, p. 10).

4.2.2.4 Re-training of the workforce and hiring specialized employees

Porsche's journey towards electrification had a significant impact on its employees. The automaker stated that an important keeper of Porsche's DNA are its employees (August Achleitner, Porsche Head of 911 model, in Willenbrock, 2019).

> *Every now and then, people from outside say that we [Porsche] have to be careful not to lose our DNA. I don't see any danger of that. That's because the brand's gene pool is in the people who plan, think, build and live the Porsche. And like any genetic material, the formative features change a bit more with every evolutionary step* (August Achleitner, Porsche Head of 911 model, in Willenbrock, 2019, p. 9).

More specifically, the key part is to identify what he mentions as "changing the formative features", referring to employee's knowledge and capabilities adapting to every technological advancement of the Porsche engine. Thus, as part of Porsche's corporate behavior, it was able to mold and change its workforce according to the new engine that it decided to produce – first the hybrid and then the electric one.

Making sure that its employees were well equipped to contribute and actively participate in the development and production of the Taycan, Porsche rolled out a knowledge campaign throughout the entire organization. Building an electric car is not simply putting a battery where the gasoline tank was and installing a battery, an electric motor and cooling system is different when compared to installing a combustion engine with an exhaust system (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e). Therefore, specialized knowledge was needed to enable Porsche's workforce, giving them the skills they needed to overcome the challenges associated with the technological changes. To do so, a large-scale training initiative took place in the Zuffenhausen premises via a digital learning platform (Porsche AG, 2018c). Over 1,400 training units on issues related to electric mobility and

digital transformation were available for the entire workforce, allowing trainees to study independently and according to their needs (Porsche AG, 2018h). For the employees who were directly involved with the Taycan production, training over various weeks were planned (Porsche AG, 2019j). Such training provided comprehensive knowledge of the Taycan's technical features and functions and the organization's electromobility strategy (Porsche AG, 2020b). As Porsche explained, *"[t]he training [focused] on establishing a tangible and emotional link between the participants and the course content"*, and by going back to Porsche's historical roots, the workshops helped participants *"discover how Porsche [came] to enter the field of electromobility"* (Porsche AG, 2020b, p. 106). Hence, Porsche was changing its workforce, but at the same time, making sure they understood how the automaker got there in the first place.

Electromobility also created circa 1,500 new jobs within Porsche (Porsche AG, 2019h) and is considered *"one of the biggest creators of jobs in the history of Porsche"* (Andreas Haffner, Porsche Member of the Executive Board for Human Resources and Social Affairs, in Porsche AG, 2018h, p. 4). At the same time, Porsche claimed that no layoffs were made as a consequence of the greater focus on electromobility (Porsche AG, 2016d). On the other hand, during 2016, Porsche stated that it planned to recruit experts in the fields of digitalization, electric mobility, smart mobility, and vehicle connectivity to support the automaker's development and production of its first fully electric car (Porsche AG, 2016d). Porsche affirmed that these positions and changes to the workforce were driven by Mission E and that

> *additional knowledge, as well as a certain type of employees who approach things in a novel way, [were] needed for the digital transformation that affects products and services, customers and retail operations, the company and its processes and people and culture* (Porsche AG, 2016d, p. 3).

Thus, Porsche made changes to its workforce to adapt itself during its journey towards electrification.

It is important to highlight that Porsche employees made concessions to support the automaker's plan to enter electromobility. In 2016, Porsche announced the Executive Board and the general works council came to an agreement for future safeguarding of the workforce and securing production sites in the long-term, already envisaging the production of electric vehicles in Zuffenhausen (Porsche AG, 2017b). Via a "future contribution" all employees under collective agreements, managers and executives agreed to give up on salary increases for a determined period

to support Porsche's electromobility ambitions (Porsche AG, 2017b). Porsche stated that such a decision by its employees was an unusual concession from the employee's representatives and unprecedented within the automotive industry in general (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e). Starting in 2026, Porsche's pay scale tables will be adjusted to compensate for the wage increases that were not passed on to employees during the period (Porsche AG, 2017b).

In summary, Porsche made changes to its workforce to be able to develop itself into the world of electromobility. Porsche provided current employees with trainings about electromobility and digitalization so that they could adapt and contribute to the organization's future.

4.2.2.5 Addition of novel production processes

Porsche's journey towards electrification also meant new production infrastructure and implementation of new production processes. It was a clear part of the automaker's corporate behavior. Porsche refurbished the already existing manufacturing site in Zuffenhausen to accommodate the production of its first fully electric model – spending circa €700 million to build a new paint shop and new assembly line and expand the engine factory and body shop, taking around four years to complete (Porsche AG, 2015b). More specifically, *"[Porsche was] reinventing [its] main site with the Taycan, building a factory within a factory […] integrating a completely new production facility with new technology and processes"* (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e, p. 8). Part of the novelty was the fact that Porsche removed the classic assembly line, and instead, implemented a flexi-line with the use of driverless transport systems (Porsche AG, 2019h). The new vehicle assembly installation offered the site more flexibility with more versatile assembly processes, while also increased the number of work cycles using the same amount of floor space (Porsche AG, 2019h). With the new factory, Porsche also implemented "Porsche Production 4.0", a process that the organization claimed to be "smart, lean and green" (Porsche AG, 2019i). "Smart" due to the new flexible production process, "lean" for the responsible use of resources and optimized handling stages, and "green" as it caters to sustainability and environmental protection (Porsche AG, 2018h). During the construction of the factory, *"[r]esource-efficient production methods [were] of the highest priority for Porsche, and [were] also factored into the restructuring of [Porsche's] traditional plant in Zuffenhausen for the production of the first purely electric*

Porsche" (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2017d, p. 5). With the new factory in place, Porsche also claimed that the Taycan was its first model produced carbon-neutral, including use of renewable energy, biogas for heat generation, electrified logistics vehicles, use of waste heat within the paint shop and greening of roof areas (Porsche AG, 2019h). Porsche stated it had stronger ambitions regarding the changing of its production facilities in the future, wanting production to leave no environmental footprint whatsoever, encompassing the entire supply chain and product life cycle (Albrecht Reimold, Porsche Member of the Executive Board for Production and Logistics, in Porsche AG, 2019e).

In conclusion, Porsche made physical changes to its production facilities for the purpose of its first fully electric car. Additionally, the automaker implemented new production processes to support the electric car, which also included more sustainable business practices.

4.3 Model of the overall process of change

From the points presented in the previous section, it results that Porsche made changes to specific CI sub-elements in its communication, while also maintaining others on its journey towards electrification. This part of the analysis serves as an overall conclusion on *how* Porsche went about this process. It presents a model that depicts which themes Porsche emphasized in its external communication during the studied timeframe (Figure 3). It is important to highlight that although the model depicts the dynamics as neatly separated, in general, they in fact overlapped and happened simultaneously.

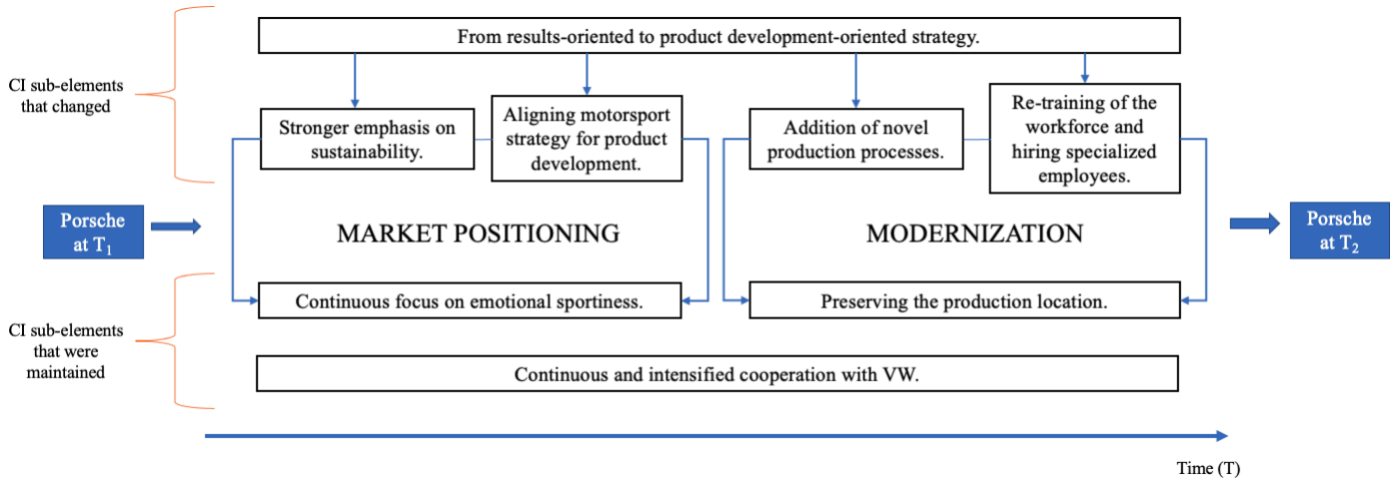


Figure 3: *Porsche's process of communication about CI change on its journey towards electrification.*

An overall pattern that became apparent was that certain CI sub-elements change, which in turn, enabled others to be maintained. The interaction among the CI sub-elements that changed and the ones that were maintained allowed Porsche to manage the balancing act between remaining the same organization and becoming a different one.

Specifically, the process started with Porsche communicating about change to its overall *corporate strategy* from a results-oriented strategy, to one that was product-development oriented. When "Strategy 2018" was substituted by "Strategy 2025", Porsche emphasized that the objective of building the sports car of the future was at the center of its activities. Once it had defined such strategy, communication about other CI sub-elements started to demonstrate change to adapt to what the automaker had set out to complete.

The new overall corporate strategy brought a stronger emphasis to the topic of *sustainability* within Porsche's communication. The automaker acknowledged it had a role to play within the sustainability transition as a luxury sports car manufacturer and communication about sustainable business practices became more apparent.

Communication about Porsche's *motorsport strategy* was clearly impacted with the change in the overall corporate strategy. In Porsche's communication about motorsport, it was highlighted that the automaker's decision to switch from endurance racing to Formula E had the objective of enhancing technological developments for electric vehicle development within the organization.

Next, communication about the addition of *novel production processes* was also emphasized by Porsche. The communication was clear about the organization's efforts to construct a new plant within an already existing plant to enable the production of the new fully electric car.

Once it had set the objective of building the sports car of the future, Porsche communicated about its efforts to *re-train its workforce* to give them the necessary skills to deal with the new technology and communicated about *hiring of new employees* that would fill in the knowledge gaps that were created within the automaker's process of embracing of electromobility.

The communication about aligning the motorsport strategy to the new corporate strategy, along with a stronger emphasis on sustainability, worked together to contribute directly to the communication about the maintenance of *emotional sportiness* within the automaker's identity. This dynamic interplay between the themes was labelled as *market positioning*, as they refer to how Porsche distinguishes itself within the market. Porsche emphasized that motorsport technological developments were directly linked to the development of the racing characteristics it was bringing over to the electric car. At the same time, Porsche's stronger emphasis on sustainability communicated about bringing together emotional sportiness with an environmentally friendly appeal. By realigning its motorsport strategy for product development and promoting a stronger emphasis on sustainability regarding the electricity-powered engines, Porsche kept the emotional sportiness present within its identity.

A similar dynamic happened with the communication about re-training of the workforce and hiring of specialized employees, addition of novel production processes and preserving the *production location*. This dynamic was labelled *modernization*, as it refers to Porsche's efforts to modernize its workforce and physical infrastructure to be able to move towards electrification. The communication about preserving the production location is directly linked to Porsche staff being re-trained according to the arrival of new technology, hiring of new specialized employees, and new production processes being implemented at the production location. By re-training the workforce and investing in new hires and production processes within the location, Porsche kept the production location that represents so much to its identity.

The theme of continuous and intensified *cooperation with VW* did not have a direct link or worked together with any other themes within the model but was a theme that was clearly apparent across Porsche's communication on technological developments towards building its fully electric

car. Therefore, it was important to be kept within the model, as it also characterized and played a part in Porsche's communication about CI change due to an identity threat.

To summarize, Porsche's communication about CI change demonstrated a gradual revision of CI instead of a disruptive one and that the gradual revision took place along a main pattern, where there was an interplay between CI sub-elements that changed and those that remained the same.

5. Discussion

This study set out to understand *how* an incumbent organization dealt with an identity threat in its external communication and identified which CI elements did it alter, maintain and disrupt. Within the context of sustainable transitions, organizations are shifting their mindset, products, and operations towards more sustainable business practices. On the other hand, this shift may come into conflict with what the organization had represented and stood for until that point in time. The sustainability transition can thus be seen as an identity threat to the organization. This is especially the case for incumbent organizations, which are anchored and committed to technologies, current market infrastructure, internal processes, and other organizational characteristics that have brought them to their current success. As empirical context, this study focused on Porsche and the transition to electric mobility. Porsche, who over the course of the last seven decades produced ICE sports cars and is synonymous with racing, had to explain how electric cars and a greater focus on sustainability fit to its identity.

Based on Porsche's external communication and communication of its leadership, this study provided a model that explained *how* Porsche dealt with the identity threat posed by the electric engine. The model demonstrated a dynamic between the CI sub-elements that changed with the ones that were maintained. Looking at the bigger picture, this dynamic created, at times, an ambiguous message within the automaker's communication about its journey towards electrification. This ambiguity reflects the overall strategic dilemma incumbents need to deal with in sustainable transitions, as proposed by Augenstein & Palzkill (2015). Incumbent organizations need to demonstrate that they are acting and contributing towards a sustainable transition but cannot rupture completely with its current reality and way of doing things. Hence, a combination of communication about maintenance and change within the organization plays a role in communicating about this struggle. At the same time, this study contributes to the line of research

that argues that organizations need to balance multiple stakeholder interests when communicating about change and navigating through stakeholders' conflicting demands (Richardson & Denton, 1996; Lewis et al., 2001). Porsche was sometimes vague about what was changing and what was not regarding the organization's identity and constantly shifting between change and no change in its communication. This fact reflects well on what previous research has said on the efforts to communicate about the change process without disappointing any of its stakeholders. So, for example, on one hand, in an effort to maintain the support of shareholders, Porsche could not declare that major changes would occur and that it would become a completely new company with the arrival of the electric engine. On the other hand, Porsche needed to make a reasonable claim for why it should change and why it was good to venture into the future focused on fully electric cars, and how electric mobility still fits with what the automaker stands for. Literature also recognizes that upholding ambiguity, called "strategic ambiguity", can indeed be a measure to balance conflicting stakeholder demands (Eisenberg, 1984). Following strategic ambiguity, communication remains so vague that every stakeholder can project their interests in what is being said. So, to balance diverse audiences' interests, Porsche uses words and phrases that pursue those goals and speak to the different audiences at the same time. More specifically, Eisenberg (1984) also argues that strategic ambiguity can facilitate change as the organization and its leaders can explain a future direction in ways to which each individual listener can relate, which fits well with the context of the research. In summary, the constant "back and forth" between maintenance and change created, at times, an ambiguous message within Porsche's communication which may reflect the strategic dilemma regarding the automaker's journey towards electrification and can be considered a strategy to balance various stakeholder interests during this journey, bringing the feeling that Porsche is changing while remaining the same.

These ambiguous messages may also explain why and how such CI transformational process is a gradual and long-term process rather than a disruptive one. As previously stated, the constant tension between maintenance and change can be linked back to the bigger strategic problem Porsche is dealing with by moving away from the ICE, associated with both a sporty driving experience and an environmental problem, and embracing the electric engine and associated low emission future. What this case indicates is an effort to carry over elements of the past legacy and history of Porsche onto future pathways. Therefore, it can be classified as more of a revisionist process than a disruptive one. Striking the right balance within the organization and

deciding on what to change and maintain facing an identity threat can be a slow process. The data also shows how much effort goes into explaining this process and crafting a change narrative, which in turn, may be a component that explains why incumbent transformation is often slow and gradual.

It is important to highlight the results obtained in this study can be transferred to other contexts or settings. The ambiguous dynamics observed within Porsche's communication can be expected in other car manufacturers facing the same identity threat. Like Porsche, many players across the car manufacturing industry are going through the same transformation process of electrifying their cars, and until recently, only offered combustion engine powered ones. The ambiguity dynamics present in Porsche's communication may also hold for companies operating in other industries, which also have their legacy product under threat due to a sustainable transition. For example, the food industry is being pushed to move away from animal-related products and may also take recourse to strategic ambiguity to balance the interests of multiple stakeholders in their communication while navigating through the transformation of their business.

On the other hand, it is necessary to recognize the boundary conditions of the case analyzed, which might influence the shape of the dynamics in other contexts or settings. First, Porsche is a consumer good. This fact may influence the shape of the dynamics found in this study because Porsche is an organization in which its identity is heavily dependent on its heritage and legacy, which may influence the fact of wanting to carry over such elements of its identity towards future pathways. This may not be the case, for example, for an organization operating in the energy or commodities sector, where there is less attachment to a specific brand. Second, Porsche is a small luxurious car manufacturer compared to other industry players. Catering products to a niche market may make it more difficult/easier to maintain or change specific CI elements when compared to auto-giants selling millions of cars per year. Overall, the results of the study may be observed in other contexts, but it is necessary to acknowledge the differentials Porsche has as a luxurious, niche-market, consumer good.

Another, very practical, limitation to the study refers to the usage of the English language during the search for company-specific articles and interviews with the organization's leadership. As the native language of Porsche's leadership and the organization itself is German, valuable sources could have been missed that are only available in German. This limitation could not be overcome as the researcher did not read or understand the German language. Nonetheless, multiple

data sources and a significant number of sources were used considering the English language, avoiding the overinterpretation of Porsche's communication in a single data source.

Additionally, presenting the model to a company insider who worked at the automaker during the studied timeframe could also have enriched the study results and given it stronger reliability. This was not done as the researcher's professional network did not include a company insider who could possibly assist and the period for the execution of the research also did not allow for a possible relationship to be created.

Collecting data pre-2005 could have brought further insights to the study. Already in 2005, the first year of the collected data, Porsche announced it was going to launch a first hybrid model in 2010. Observing Porsche's communication before that and understanding how Porsche communicated about its future without the electric engine in sight, could have demonstrated a greater change to the communication compared to when it was already planning on launching a hybrid car. This could not be executed as Porsche Newsroom and Porsche's annual reports, main sources of the automaker's external communication, were not publicly available pre-2005. Still, the period considered in this study captured the main dynamics and the results are considered robust, as the studied timeframe captured a period from when the organization was mainly focused on production of combustion engine powered cars and ran until after the launch of its first fully electric model. Therefore, the studied timeframe captures a moment of transition within Porsche that can be linked back to the identity threat posed by the electric engine.

Three avenues for future research are suggested. First, it could be valuable to verify the ambiguous communication pattern found in this research in further cases. As the electric engine can be considered an identity threat to almost all car manufacturers which focus on the construction of ICE cars, verifying the communication pattern across these different industry players can provide insights on an industry level. The pattern could also be verified by using other data collection instruments, such as interviews with company insiders and using company-specific articles and communication efforts in the local language. Second, matching the actual perceptions of the different stakeholders with how the organization communicates about CI change can provide insights on how the message is received by the target audience. Understanding better the dynamics between message sender and receiver within the context of sustainable transitions can bring insights on to how communication can be further sharpened to reach its objective. Finally, matching the communication pattern with the organization's actual actions can produce valuable

insights on what is changed and what is maintained within both realms. This research avenue may raise knowledge on how communication can become "performative" in the sense that it shapes expectations and prospective action.

6. Conclusion

This study analyzed Porsche's external communication and communication of its leadership between the period of 2005 and 2020 with the objective of understanding how the organization dealt with the identity threat posed by the electric engine. The study also set out to identify which CI elements were altered, maintained and disrupted within Porsche's external communication. Data was collected in different sources, including Porsche's annual and sustainability reports, Porsche's dedicated website for press-related matters, and interviews with Porsche's senior executives extracted from Nexis Uni research database. The data was first analyzed to reconstruct the case chronology, then analyzed to identify data points that referred to specific CI elements, and finally, analyzed for the identification of maintenance or change within the CI elements. This led to the identification of specific themes related to maintenance and change of CI sub-elements, which in turn were used to construct a process model that depicted *how* Porsche communicated about CI change on its journey towards electrification.

First, the study demonstrated that Porsche did not completely abandon or adopt novel CI elements on this journey. So, no CI elements or sub-elements were disrupted. Second, the study demonstrated that CI elements did not entirely change or were completely maintained, but rather, sub-components of the CI elements did (sub-elements). Third, the study identified a total of eight sub-elements which were established as changed or maintained. Across the entire studied timeframe, Porsche's communication gave continuous focus to its car's emotional sportiness, highlighted a continuous and intensified cooperation with VW, and emphasized the preservation of the production location at Zuffenhausen. On the other hand, Porsche's communication demonstrated that the automaker moved from a results-oriented corporate strategy to a product development-oriented one, aligned its motorsport strategy to better engage with product development, gave a stronger emphasis to sustainability, revealed that employees were re-trained and new employees were hired to adapt the workforce to the new drivetrain technology, and novel production processes were added. Finally, the study demonstrated that, at times, sub-elements that changed interact with sub-elements that were maintained, bringing a sense of ambiguity within the

automaker's communication efforts on change and maintenance of CI. The ambiguity present within Porsche's communication reflects the automaker's efforts to navigate through and balance multiple stakeholders' interests. At the same time, the dynamic created by the change and no change showcases how such transformational process is more of a revisionist and gradual process for Porsche and that the automaker struggles with the dilemma of aligning itself to the sustainable transition and keeping the organizational characteristics that have brought the organization to its current success.

This study does not offer any *direct* managerial implications. However, this study can help better understand the process involved in CI change caused by a sustainable transition within an incumbent organization. Shedding light on how an incumbent organization communicates about CI change can bring an improved understanding of the dynamics involved in such transformational process and deeper knowledge of what hurdles they face and which barriers they meet when facing an identity threat. Therefore, this study can be used to inform, for example, policymakers and help raise their understanding of the behavior of this important actor group within the context of sustainable transitions.

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Appendix A

Table 3: *Summary of the number of documents used for coding each CI element and number of references coded under each CI element.*

CI Element – NVivo Node	Number of Documents Used	Number of References Coded
Corporate behavior	79	194
Employee behavior	14	18
Management behavior	12	21
Corporate guidelines	15	20
Corporate history	10	26
Corporate mission	17	31
Corporate philosophy	24	36
Corporate principles	23	27
Corporate values	6	15
Country of origin	1	1
Founder of the company	7	15
Subcultures	0	0
Differentiation strategy	16	40
Positioning strategy	14	32
Brand structure	6	17
Organizational structure	14	27
Industry identity	23	33
R&D*	18	37

* R&D was added by the researcher.

Appendix B

Table 4: *Selected data supporting each theme.*

Maintenance	Change
Continuous focus on emotional sportiness. • "**The model policy met the high expectations of Porsche customers in terms of sportiness**, dynamism and driving enjoyment coupled with excellent everyday performance and value for money." – Porsche AG, 2006 • "We will be the producer of very sporty luxury cars. That's it. **Our core business is and will be sports cars in the future**." – Wendelin Wiedeking, CEO, 2007 • "In a nutshell, the **Porsche plug-in hybrid confidently handles any demands made by drivers looking for sportiness, agility, responsiveness, and excitement on the road**" – Porsche AG, 2013 • "'Race Hybrid' is the top-performance mode and **is especially intended for sporty handling**." – Porsche AG, 2014 • "**No other manufacturer offers the sportiest and technically most impressive vehicle in each segment**." – Porsche AG, 2015 • "But I can allay their concerns: the purely electrically driven Porsche contains **everything that you would expect from our brand – extremely sporty driving dynamics, outstanding performance, and last but not least, a great deal of emotionality**." – Oliver Blume, CEO, 2019 • "Essentially, the Porsche plug-in hybrid benefits from the intelligent interaction of both engines to **deliver sporty acceleration** from a stop and excellent driving dynamics at higher speeds…" – Porsche AG, 2012 • "Porsche will be **just as sporty as the Porsche of today**." – Oliver Blume, CEO, 2016 • "**Porsche stands for sporty high-performance engines**: from engine design to series production. We are further extending our competence in this area with new engines" – Oliver Blume, CEO, 2016 • "We find the technology as such interesting, as **electric cars allow a very sporty driving experience**, **which fits well with the core value of our brand**" – Oliver Blume, CEO, 2017 • "Electrification, digitalization and connectivity determine how, when, where and with what means we will all get around in the future. **One thing remains: there is a racing car in every Porsche**." – Executive Board Porsche AG, 2017 • "It is **important to us** that engines can be **driven in a sporty way**" – Oliver Blume, CEO, 2018 • "But I can assure them that they'll find **everything they expect from our brand** in a purely electric Porsche like the Taycan: **extremely sporty driving dynamics, outstanding performance figures, and not least of all, a high degree of emotional appeal.**" – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2019	***Stronger emphasis of sustainability.*** • "**Electric drive systems offer, first of all, the possibility of CO2-neutral and zero-emission mobility. Another bit of good news: electric motors also offer an outstanding driving experience. Being CO2-neutral and fun to drive are not mutually exclusive.** An electric vehicle is a highly emotional product." – Dirk Lappe, Technical Director at Porsche Engineering, 2016 • "Electric drive is a double blessing: **it will enable Porsche to meet stricter fuel consumption and emission standards in the future. At the same time it improves vehicle performance considerably**" – Porsche AG, 2016 • "The sports car of the future will blend the tradition and values of the Porsche brand with innovative technologies, **while at the same time ensuring sustainability**." – Porsche AG, 2016 • "**Fuel efficiency, reduced exhaust emissions, lightweight construction and reusability of materials are becoming fundamental characteristics of a modern vehicle architecture. [...] Porsche is tackling these challenges in a resolute manner and is endeavoring to build sportscars that combine performance with efficiency and exclusivity with social acceptance. The fuel consumption and emissions of the vehicles are of central importance to the company and its stakeholders.**" – Porsche AG, 2016 • "In the future, **we want to set ourselves apart from the competition** not only through more innovation, **but increasingly with the sustainability of our products** and manufacturing processes." – Executive Board Porsche AG, 2017 • "The sports car of the future **combines the tradition and values of the Porsche brand with innovative technologies and sustainability**." – Porsche AG, 2017 • "After all, motor racing remains paramount for Porsche, **our driver** of innovation, efficiency and **sustainability**." – Executive Board Porsche AG, 2018 • "People who visit or simply drive past the headquarters in the future should **immediately recognize that Porsche places a premium on sustainability and climate protection**." – Porsche AG, 2018 • "**Ultimately, as car manufacturers it's very clear that we have a responsibility to reduce CO2 emissions from transport**; even though we have only a very small market share as a premium manufacturer, it is nonetheless out of the question for my colleagues on the Executive Board and myself to pass the buck – **in fact, we rather perceive the prestige of our brand as giving us the means to set a positive example**." – Oliver Blume, CEO, 2019 • "The sports car manufacturer has set itself the demanding task of maintaining its customer relationships, furthering the allure of the brand and delivering a sporty driving experience, **all while promoting environmentally friendly, resource saving mobility**." – Porsche AG, 2020
Preserving the production location by renovating facilities. • "Blume added that the E Mission project **underlines the importance of Stuttgart-Zuffenhausen as a production site**, of Baden-Württemberg as a center of technology and of the whole German automotive industry." – Porsche AG, 2015 • "A day to celebrate! Yes, we did it! **We brought Mission E to Zuffenhausen and Weissach where the future has tradition**." – Uwe Hück, Chairman of the Central Works Council and Deputy Chairman of the Porsche AG Supervisory Board, 2015	***From results-oriented to product development-oriented strategy.*** • "We want Porsche to continue to meet the highest standards in the future. This is why we developed a strategy during the past fiscal year with which we will steer Porsche to future success. "**Strategy 2018" provides a guideline for our entrepreneurial activities. We have derived four corporate goals from our declared vision of securing Porsche a lasting position as the world's most successful manufacturer of exclusive sports cars**." – Porsche AG, 2011

- "Like its great role model, the 911, **the new Porsche is being built where the Porsche heart beats: in Zuffenhausen**." – Porsche AG, 2015
- "**This is where the heart of Porsche beats.** Everything has developed from here; this is where the future has a tradition. Zuffenhausen is the home of the 911, the icon of the brand. **What could be a better site for a car that marks the beginning of a new Porsche era?**" – Oliver Blume, CEO, 2016
- What the German automotive industry does, particularly in the premium class, has great weight internationally. Other industries have lost this status, some no longer exist. **This edge has to be defended….**" – Oliver Blume, CEO, 2016
- "**Zuffenhausen is where the Porsche legend was born, and it lives on**." – Uwe Hück, Chairman of the General Works Council and Deputy Chairman of the Supervisory Board of Porsche AG, 2016
- "The **company's historical headquarters are now at the threshold of a new era**. A **factory within the factory is being built** for Taycan production." – Porsche AG, 2018
- "The decision was made in light of the fact that we wanted to build the Taycan here at the **Zuffenhausen site, the birthplace of Porsche, even though this requires more investment in an existing factory than, say, Leipzig**." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018
- "**Porsche has deliberately decided to produce this iconic new car at its main site in Zuffenhausen**, **the heart and home of the brand**." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018
- "'At our main plant in Zuffenhausen, **which is the heart of the brand, we combine our heritage with the future**,' explained Oliver Blume, Chairman of the Executive Board of Porsche AG. This new Porsche plant reflects the brand's tradition while also sending a clear signal about its new directions, **as demonstrated by the production of the pioneering Taycan in the legendary surroundings of Zuffenhausen**." – Porsche AG, 2019

- "In addition, important decisions for the future were taken: the supervisory board is supporting Strategy 2018. Developed by the executive board, **the strategy is intended to significantly increase sales while maintaining high profitability, and further sharpen the Porsche brand while ensuring high levels of customer enthusiasm and employee satisfaction**." – Porsche AG, 2011
- "In the long-term with its "Strategy 2018", **the company wants to establish itself as the world's leading manufacturer of exclusive sports cars**." – Porsche AG, 2011
- "The future of the sportscar – this is the theme of Strategy 2025. **At the heart of the strategy is the future product portfolio**." – Porsche AG, 2016
- "The Porsche Strategy 2025 is a **project dedicated to shaping the future of the sports car**." – Porsche AG, 2016
- "This strategy [Strategy 2025] is paving the way for our **continuing development from a manufacturer of exclusive sportscars to a provider of exclusive and sporty mobility solutions**." – Porsche AG, 2016
- "The Porsche Strategy 2018 provided the foundation for stability and value creating growth. The company's new **Strategy 2025 will build on this, marking the dawn of a new era. This strategy is paving the way for our continuing development from a manufacturer of exclusive sportscars to a provider of exclusive and sporty mobility solutions**." – Porsche AG, 2016
- "**The company's Strategy 2025 represents a continuation of its Strategy 2018, but with an even stronger focus on innovation and digitalization**." – Porsche AG, 2017
- "**The themes of electromobility and vehicle architecture of the future are cornerstones of the Porsche Strategy 2025 Plus**" – Porsche AG, 2019
- "The **Strategy 2025 Plus involved the further development of the existing strategic aims.** In particular, the crosscutting issues of product, sustainability and innovation were to be tackled to an even greater extent across the different functions." – Porsche AG, 2020
- "**A strategy leads to success when it is recalibrated over and over, and flexibly adapted to new parameters.** […] **And that is exactly what we have done: Strategy 2030 replaced Strategy 2025 Plus at the end of the financial year. Why? The world is changing at breakneck speed. It is becoming more digital, more connected and also more volatile. […] Porsche is looking ahead. We are embracing the huge challenges as opportunities. We are proactively shaping our future. And the new Strategy 2030 is a clear expression of this mindset"** – Porsche AG, 2020
- "Now, in the form of its Strategy 2030, the company is taking the next step. **Preparations are based around this question: How will the world of sports car and exclusive mobility develop in future? Porsche has used three scenarios to move closer to the next decade, and thought its ideas through to their logical conclusion.**" – Porsche AG, 2020

Continuous and intensified cooperation with VW.

- "By the end of this decade we will therefore be **introducing a Cayenne with hybrid driveline – a joint development project with the Volkswagen Group**." – Porsche AG, 2005
- "The industrial logic of our Volkswagen participation is therefore also to be sought in **the fact that Porsche will cooperate with Volkswagen in important technological areas**, which will result in significant economies for both parties." – Wendelin Wiedeking, CEO, 2005
- "It was never doubted, even in the turbulent days of this year, that the basic logic underlying a merger of Porsche and Volkswagen made sound business sense. After all, **both companies have already been cooperating successfully for years**. **We plan to intensify that cooperation**, which began with Porsche's development of the platform shared by the Cayenne, the VW Touareg and the Audi Q7, and is **now being continued with the Panamera and hybrid drive systems**." – Porsche SE, 2009

Aligning motorsport strategy for product development.

- "With this level of concentrated technological expertise, **we are also taking on motorsports.** After rolling out our highly innovative 919 Hybrid racing car last summer, the **2014 Porsche Team will be at various starting lines of the World Endurance Championships, including the legendary Le Mans track in June 2014. The toughest endurance race in the world will serve as our laboratory and test bench for our hybrid vehicle developments**." – Porsche AG, 2013
- "Series production vehicles are the true winners from motorsport. **Racetracks are essentially a testing ground for Porsche. Testing new technologies and innovations under extreme pressure facilitates the continuous technological enhancement of series sportscars – and this is how Porsche transfers its technology.** Racing has had a particularly noticeable impact on the development fields of lightweight construction and aerodynamics. **However, Le Mans and other races are also enabling some pioneering work in other fields, such as developments in battery technology and the enhancement of exhaust energy recuperation systems**." – Porsche AG, 2016

- "Finally, **the integrated automotive group will be an excellent position to introduce alternative drive technologies**." – Porsche SE, 2009
- "And co-operation in development means that engineering expertise can be shared and engineering costs can be reduced, **as we have already proven in joint projects such as the Cayenne/ Touareg or the development of hybrid drive systems**." – Porsche AG, 2011
- "Moreover, in May 2012, **with Volkswagen's corporate research and development as consulting partner, Porsche Engineering Group GmbH, a wholly owned subsidiary of Porsche AG, took on management of the "e-generation" research project,** which is funded by the German Federal Ministry of Education and Research. As part of the project, which has a planned term of three years, leading German industrial companies and renowned universities and research institutes will **develop a new generation of components for electric vehicles, which will be combined and optimized in terms of efficiency and weight**." – Porsche AG, 2012
- "At the end of November 2016, Porsche **invested in a joint venture for an ultrafast, high-performance charging network for electric vehicles. With this effort, the Volkswagen Group with Audi and Porsche**, Daimler AG, the BMW Group and Ford Motor Company intend to achieve significant gains in the long distance travel capability of vehicles with electric motors." – Porsche AG, 2016
- "Yes, that is a clearly stated objective. **We will seek synergies even more closely within the Sports/Luxury brand group**, and **join forces and coordinate projects more closely than in the past**." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018
- "To speed up progress in this area, **Porsche has joined forces with Audi to set up the Premium Platform Electric. Teams from both brands will work together to lay the foundations for future e-vehicles**." – Michael Steiner, Member of the Executive Board for R&D, 2018
- "E-mobility is a Herculean task, and that's also true in monetary terms. **Group-wide cooperation is therefore a huge plus for us**." – Stefan Weckbach, Head of Battery Electric Vehicles, 2018
- "**We're working very closely with our counterparts, in particular at Audi, on the use of joint modules for the e-vehicles we are currently planning.** The brands are also working on the joint development of a platform for new BEV projects in the future." – Stefan Weckbach, Head of Battery Electric Vehicles, 2018
- "**If we had to cope with the challenges ahead on our own, the costs would be around 30 percent higher**" – Oliver Blume, CEO, 2018

- "**We have decided to reorganize our motorsport strategy and align it with our corporate strategy**: As well as pure GT road-going sports cars, fully electric sports cars are a fixture of this strategy […] In the future, we will split our commitment between conventionally powered products in GT and customer racing, **and an increased focus on electromobility. That is why we will enter Formula E in 2019**." – Michael Steiner, Member of the Executive Board for R&D, 2017
- "**Motor racing is part of our identity**. Sporting ambition is what has driven Porsche engineers right from the beginning. For seven decades, the race track has been the unforgiving test platform that sports-car technology needs." – Executive Board Porsche AG, 2017
- "Appearing alongside our first all-electric road car is **another brand-new venture for Porsche Motorsport: Formula E.** The electric single seater series has been evolving rapidly since its debut in 2014, **and next year will see a new car and a raft of major manufacturers entering the championship with an eye to developing their emission-free tech for both road and racetrack. And Porsche will be firmly among them**." – Porsche AG, 2018
- "The 918 Spyder showed the world that hybridization can be a success in the super sports car segment, **and we've chalked up big wins in racing sport with the 919 Hybrid in the LMP1 class. Electrification has therefore been an integral part of our development and product strategy for many years**." – Michael Weckbach, 2018
- "After more than 30 years, Porsche returns to single-seater racing. **Entering Formula E and the accompanying restructuring of the motorsport involvement can be derived from the 2025 Porsche strategy**." – Porsche AG, 2019
- "**A large part of the corporation's 'Mission E' is also the presence and success in motorsport with race cars with electric drive**. In terms of hybrid technology and thus e-drive technology, racing and production have been enriching each other at Porsche for around a decade: the first hybrid race car, the 911 GT3 R Hybrid of 2010, went into the development of the 918 Spyder. In part, the 918 was the basis for the 919 Hybrid, which in turn influenced the development of the Porsche Formula E powertrain and the Porsche Taycan." – Porsche AG, 2019
- "**Porsche had decided to start again with an LMP1 prototype in 2014 at the 24 Hours of Le Mans and in the World Endurance Championship**. In 2015, Porsche achieved the first of three consecutive Le Mans victories. The company rounded off this chapter of its motorsport's history at the end of 2017 with six World Championship titles. The 919 Hybrid is the most complex race car Porsche has designed and built to date. **Many components and concepts with which it established itself as the most successful Class 1 prototype found their way into road vehicles such as the Panamera Turbo S E-Hybrid**." – Porsche AG, 2019
- "The high competitive pressure of motorsports continuously pushes the engineers to the limits of what is possible. **In terms of hybrid management, the Le Mans prototypes also advanced into regions previously considered unattainable. In this way, the 919 Hybrid as a rolling test laboratory paved the way for the voltage level of future hybrid and electric powertrain systems**." – Porsche AG, 2019
- "**Motor racing is still a vector for development as it expedites further development**. The extreme stresses of the races quickly reveal any weak points and as such motivate engineers to look for new and better ways. The greatest advances were always made in times of pressure and tension." – Porsche AG, 2019
- "**Motorsport is and will remain an integral part of Porsche**. The spectacular performances and success against tough competition on the iconic racetracks have shaped the image and positioning of the brand since the late 1940s – **and continues to do so today**." – Porsche AG, 2019
- "**Motorsport is part of Porsche's DNA**." – Oliver Blume, CEO, 2019

	Re-training of the workforce and hiring specialized employees. • "This will involve substantial investments in fields such as development and production, **as well as staff training**." – Porsche AG, 2018 • "It is the people working at Porsche who are the key to these developments. **In the next few years, thousands of employees working in production at the site in Zuffenhausen will undergo a huge number of qualification and training programs, giving them the skills they need to overcome the challenges associated with these technological changes**." – Porsche AG, 2018 • "The Taycan's influence will be felt throughout the company, **and create more jobs that virtually any other project in Porsche's history**." – Porsche AG, 2018 • "**The Taycan is one of biggest creators of jobs in the history of Porsche**. Not all of these new employees will be producing the Taycan; they will also build two-door sports cars. **Porsche's aim for the Taycan is to create a team with a healthy mix of experienced sports car manufacturers and new staff**." – Andreas Haffner, Member of the Executive Board for Human Resources and Social Affairs 2018. • "At the same time, the sports car manufacturer is establishing an **unprecedented qualification initiative, in which the topic of electric mobility at Porsche is introduced to Porsche employees. All employees are offered a four-day qualification program in addition to extensive e-learning opportunities. For the colleagues which are directly involved in the production of the Taycan a multiweek training is planned**." – Porsche AG, 2019 • "**We created around 2,000 new jobs for our sixth model and launched a comprehensive training offensive**." – Porsche AG, 2019 • "**This marks the dawn of a new era – and one requiring intensive preparation**, **most notably for the Taycan production staff**. As a result, the vocational training unit organized **a four-day Taycan training course as part of the qualification drive for this first-ever fully electric Porsche**. The qualification center is housed in two lightweight construction halls covering over 2,500 square meters, with the four-day face-to-face course providing comprehensive knowledge of the Taycan itself and the company's electromobility strategy. **Going back to the historical roots of the company, these interactive workshops help participants discover how Porsche has come to enter the field of electromobility**. Topics such as sustainability, charging infrastructure and charging services are discussed in an in-depth and open manner. Participants are also treated to a detailed look at all of the Taycan's technical features and functions. The training focuses on establishing a tangible and emotional link between the participants and the course content." – Porsche AG, 2019 • "**The company is investing heavily** in such areas as innovation, digitalization and **training**." – Porsche AG, 2020
	Addition of novel production processes. • "**We're reinventing our main site with the Taycan, building a factory within a factory**. **We're integrating a completely new production facility with new technology and new processes**—while running at full production capacity in our existing plant. Remember that we're already making more cars in Zuffenhausen than ever before, with 250 two-door sports cars a day. That's like open-heart surgery and affects all the relevant areas…" – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2019 • "**The company is investing around 700 million euros in its main production site**. The next few years will see the construction of a **new paint shop and a separate assembly plant there. The engine plant will be expanded to produce electric drives, and the existing body manufacturing shop will be expanded**." – Porsche AG, 2016

	• **We've restructured the Taycan's production from the ground up.** […] **We'll be assembling the Taycan on what's known as a flexi-line with driverless transport systems that move automatically from station to station.** That gives us more freedom not only in our production operations but also in the architecture of our new plant. The flexi-line offers enormous benefits in terms of both investment and flexibility. We saved around 30 percent of the investment costs by not setting the conveyor systems into the foundation. And because the line isn't rigid we can modify it at any time, integrate new elements, or do bypasses to meet special customer wishes." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2019 • "Porsche does not rely solely on its history – **it is also committed to sustainable growth**. Construction of the Mission E at the Zuffenhausen site **will mark a turning point in this history. We have already taken our first step towards a Zero Impact Factory.**" – Porsche AG, 2016 • "Faced with the **challenge of e-mobility**, **Porsche has made the logical choice to build a new factory that is fit for the future**." – Porsche AG, 2017 • "Sustainability is the foundation of our company management. **Resource-efficient production methods are of the highest priority for Porsche, and are also being factored into the restructuring of our traditional plant in Zuffenhausen for the production of the first purely electric Porsche**" – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2017 • "To produce the Taycan, **Porsche is dispensing with rigidly interlinked belt installations, instead ushering in a new era in vehicle production**. As far as the Taycan is concerned, the traditional production line has had its day." – Porsche AG, 2018 • "**Porsche will be the first vehicle producer to use FTS (driverless transport systems) in final assembly as a continuous flow**. This will enable us to combine the advantages of the traditional principle of continuous production with the flexibility offered by versatile assembly. It will also increase the number of work cycles using the same amount of space. We can then use this enhanced degree of flexibility to respond to customer desires even more quickly. This is also something that is embodied by our Porsche production philosophy." – Porsche AG, 2018 • "With the Taycan project, **we have deliberately begun to focus on sustainability in terms of both material selection and process design. Of course, the complete transition cannot be achieved overnight. But we are working on it.** We are already about to achieve a milestone on this path: start of production of the Taycan in Zuffenhausen is expected to be carbon neutral." – Oliver Blume, CEO, 2018 • "Moreover, **we're putting highly innovative production methods into practice with the Taycan and taking a step toward the factory of the future. We call it Porsche Production 4.0—smart, lean, and green.** Smart stands for flexible and connected production. Lean means responsible and efficient use of resources. And green refers to sustainability and environmental protection." – Albrecht Reimold, Member of the Executive Board for Production and Logistics, 2018 • "Porsche is aiming to achieve CO2-neutral production of vehicles. **The Taycan will show the way forward: production of the model at the Zuffenhausen location will be completely CO2-neutral**." – Porsche AG, 2018 • "**[T]he ongoing development of Porsche Production 4.0** and an unparalleled knowledge campaign rolled out throughout the entire company: **in firmly committing to electric mobility, the sports car manufacturer is undergoing a process of major change and once again reaffirming its ability to safeguard its future**." – Porsche AG, 2018 • "At Porsche we switched our German production sites to green energy two years ago, and **with the Taycan – which we will launch at the end of the year – we are going another step further, as production of our first e-athlete at the site is already carbon neutral**; the second step is to also achieve carbon neutrality in the supply chain." – Oliver Blume, CEO, 2019 • "Porsche is pursuing the vision of a "Zero Impact Factory" for its production of the future. The objective of this vision is that commercial production processes **should have no effect on the**

	environment, where possible. The use of resources and production of waste will be continually reduced, with the introduction of recycling processes and future technologies." – Porsche AG, 2020