

IMPLEMENTING AGILE PROJECT MANAGEMENT IN A TRADITIONAL AUTOMOTIVE GIANT: VOLKSWAGEN'S DIGITAL PROJECTS



DECLARATION

I hereby declare this research report represents my own work, which has been done as a partial fulfilment of the degree of Engineering Management at Arden University, and has not been previously submitted to this or any other degree programs.

I hereby declare that this research report does not contain any confidential data regarding any individual, household or organization.

I hereby declare that I agree with Arden University to store and use information included in this research report as a reference for future determinations.

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The logo is a circular emblem with a blue border. Inside the border, the words 'RESEARCH' and 'INNOVATIONS' are written in a semi-circle at the top and bottom respectively. In the center is a stylized rhinoceros head in profile, facing right, with a blue graduation cap on its head. Below the rhinoceros, the text 'EST. 2018' is written.

ACKNOWLEDGEMENT

I want to acknowledge my gratitude to my supervisor for helping me to select the particular assignment topic and for assisting throughout my dissertation. I also provide my acknowledgement to the peers, friends and colleagues who help me to develop my insights into the topic. Finally, I acknowledge my parents for helping me to deal with the obstacles that can be faced by me during the completion of my dissertation.



Executive Summary

Background and Aim: Agile project management is considered to be an iterative approach that focuses on reacting to changes and rapid delivery of value. The market for various agile project management software has been accelerating, indicating its relevance and acceptance by businesses. The inflexible and inappropriate project procedure at Volkswagen prevents them from rapidly evolving with the needs of digital innovation. Such circumstances necessitate an investigation into the relevance of integrating the agile project management approaches and approaches by Volkswagen, whereby they can promote better project management and digitalization.

Methods: The review on the implementation of agile project management is conducted through following the secondary method, by which the expected outcomes are formulated for improving the digital project of Volkswagen. By conducting thematic coding over the agile project methodology contexts, the comprehensive arguments of previous research showcase the importance of upgrading modern project management tools for effective project planning. The considerations of the ethical rules are feasible for ensuring the successful completion of this project work.

Results: The analysis of the evidence presents the understanding that agile methodology transformation is beneficial for Volkswagen as it can provide the scope to bring innovation and creative development within the business processes and operations. However, in this process, there are certain challenges that exist, creating hindrances such as the resistance to change from the workforce, which can delay the timely process implementation. Although there are recommendations given for each and every recognised challenge to remove them.

Conclusion: It can be concluded that the incorporation of agile management software has profound impact on the digital project of Volkswagen. The incorporation has not only helped the company to address the missed deadlines and client dissatisfaction but also make the company more flexible and software focused which is apparently effective for their business goals.

Recommendations: Based on the findings, the four recommendations can be provided regarding this research. It is suggested that agile release train governance be introduced in order to minimize the delays caused by cross-team integration activities. A change manager should be appointed specifically to oversee cultural resistance and to facilitate the process. The rights of Product Owner to make decisions should be clarified in such a way as to prevent the emergence of bottlenecks due to escalation. Should involve continuous agile training to maintain digital transformation.



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CHAPTER 1 : INTRODUCTION

1.1 Background

Nature and significance of student's Engineering Transformation topic

Agile transformation is a paradigm shift in which a company is now embracing agile values on a company wide level, not just in software development but in changing its culture, structure, process, and leadership to become more flexible, communicative and customer centric. The study discusses the way Volkswagen has moved to agile methods of project management as part of its digital transformation projects which will be highly significant as an Engineering project. Being oriented on software development, production, and customer experience, it explores how agile is applied to produce agility into legacy systems to aid innovation, accelerate development, and contribute to the transformation of the company into a tech-based mobility actor in the following context which will add value to the company.

1.2 Organisational context and sector overview

The Volkswagen group is one of the world's leading automobile manufacturers of commercial vehicles. It is well-known to have the largest car-maker in Europe. Volkswagen, as a German multinational conglomerate, is famous for its reliability, innovation and automotive heritage. The hierarchical organisation and inflexible project processes are the traditional organisational concepts of Volkswagen, and they do not allow the organisation to quickly respond to the requirements of digital innovation (Chen, 2022).

The automotive sector, which includes supply chains, after-sales services, and car production is an important contributor to the expansion of the world economy. It is rapidly evolving as a result of shifting customer tastes, sustainability demands, and technology improvements. Digital connection, autonomous driving, and electric cars are changing market dynamics, and innovation tactics are impacted by pollution regulations. The sector is still developing, concentrating on efficiency, safety, and ecologically friendly transportation solutions, despite obstacles including supply chain interruptions and growing expenses (Maximizemarketresearch.com, 2024).

1.3 Student's motivation to work in the topic

Agile project management is an important and advanced process to insightfully look into. It is a relevant topic because it represents industry trends, where automotive giants have to adjust to new,

changing technology environments. The study of it motivates students to gain a detailed understanding of agile process and its relevance in automotive sector. The example of Volkswagen provides important lessons on how to engage in organisational change efforts, cross-functional cooperation, delivering scale and agility, which makes it an interesting case study that has both an academic and a real-life dimension.

The move toward agile project management by Volkswagen is an organisational issue that suggests complexity due to the fact that the company has a traditional automotive company background (Poth, 2021). The crux of the matter is that hierarchical, linear processes have to be harmonised with an iterative and corporate agile approach. Although the benefits of agile practices include rapid innovation, responsiveness to customers, and team bonding, the challenges to the deployment, including opposition to change, organisational culture, and inter-departmental integration challenges, are rampant when integrating such practices, especially in an organisation with a conservative culture such as Volkswagen (Temitope, 2022). This problem is of an acute character, as the automotive industry experiences a really fast digitalisation, and much attention is paid to the software-defined vehicles, the connected services, and finally to the customer-driven digital platforms. Such a mission as embracing Volkswagen and becoming a global tech-driven mobility provider compels the company to experience a fundamental change in the way the company conceptualises, implements, and delivers projects (Siegfried *et al.* 2023).

In this regard, the case of Volkswagen's agile transformation provides a fascinating perspective through which one might analyse the route taken by traditional automakers to handle digital disruption (Mercurio and Yu, 2021).

The transition to agile project management is caused by the desire of Volkswagen to transform into a software-powered mobility service provider in the environment of blistering digitalisation (Bazzi *et al.* 2024). Based on traditional hierarchical and linear processes, the company is currently dealing with an external pressure to implement agile practices on legacy systems to speed the processes of innovation, customer experience, and production streamlining (Dorobantu *et al.* 2021). Agile project management is an iterative practice or approach that concentrates on responding to changes, delivering value quickly, contrasting sharply with the rigid and traditional waterfall methodology. The background of agile project management stems from the frustration and rigidity of waterfall project management, as the traditional approaches often contribute to dissatisfied customers and missed deadlines. The trend of agile project management was formally

solidified in the year 2001 through the creation of the Agile Manifesto (Gubinelli *et al.* 2019). The APM software market has been estimated at a value of 3.56 billion US dollars in 2023. However, with a 14.34% CAGR growth, the market is expected to reach a market value of 9.1 billion USD by 2030 (Maximizemarketresearch.com, 2024).

For a traditional automotive giant such as Volkswagen, the importance of adopting agile management, specifically for digital projects, is driven by the massive transformation of the industry. The significance of adoption is immense, as modern cars are turning and evolving into a more software-focused vehicle where several digital elements, such as connectivity, autonomous driving, infotainment, and electric powertrains, are some of the critical differentiators..

1.4 Aims and objectives

The study focuses to examine the relevance of implementing agile project management methods by Volkswagen, replacing the traditional method, fostering digitalisation and change within the automotive giant's operations.

- To determine the strategic vision behind the change and implementation of agile methods in VW's production process
- To examine the impact of agile practices on team structures, workflow and others
- To evaluate the challenges to implementing agile methodology in the firm
- To propose recommendations to reduce these identified challenges

1.5 Document structure

The study provides an introduction, where the digital revolution in Volkswagen is identified, and the urge to pursue agile project management are explained. This chapter showcases the framing of the objectives on the biases of the Volkswagen's issue identified. In the literature review, it identifies the theories of agile frameworks, change management, and legacy systems problems. It highlights the numerous perceptions of the scholars regarding the effects of agile practices and the issues that can be encountered by the firm. The methodology chapter defines the way the research will be conducted. Data analysis analyses the findings using thematic coding of the methods used in determining the successes and barriers. Chapter on data analysis shows the data extracted and its interpretation to justify the relevance of agile methodology for Volkswagen. Lastly, the conclusions and recommendations provide strategic depth on how to execute agility in a

conventional automotive context with the focus on scalability, leadership orientation, and cultural adjustment.

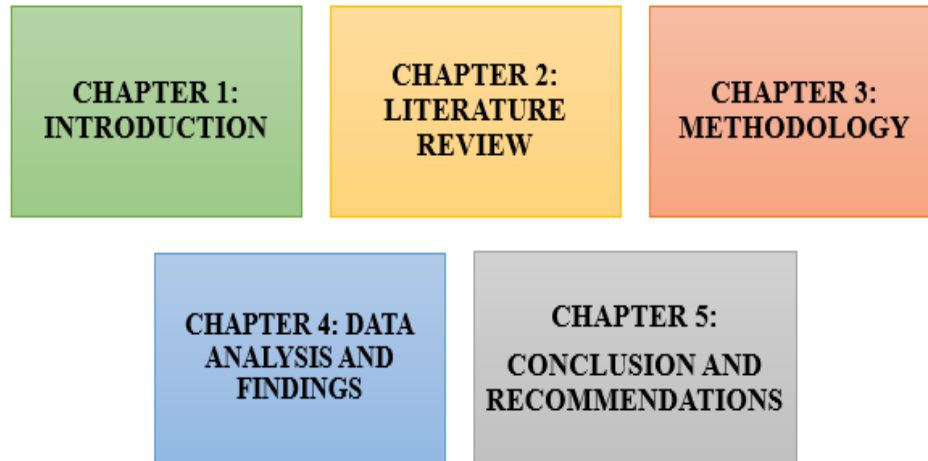


Figure 1: Dissertation structure

(Source: Self developed)



CHAPTER 2 : BACKGROUND RESEARCH

2.1 Introduction

In this chapter, the implementation of agile project management in a traditional automotive giant is discussed, and the strategic vision behind this change is also addressed. After the implementation, the impact made by agile practices on the team structures and workflow is also covered in this chapter. This study also highlights several challenges in this field and shares valuable recommendations to reduce the identified challenges associated with Volkswagen's digital projects. This chapter also shares a theoretical and conceptual framework to develop this research and a literature gap is identified that helps to develop a brief understanding about this topic. This chapter will mainly review the agile adaptation for VW digital delivery using secondary sources such as relevant articles, and government and industry reports on the themes related to the objectives of the study. Section 2.2 identifies the strategic vision of VW behind the implementation of agile methods. The section 2.3 identifies the impact of agile practices on team structures and workflow. Section 2.4 identifies the challenges related to the implementation of agile methodology. Section 2.5 identifies key recommendations to mitigate the identified challenges. The section 2.6 identifies the gaps which will be addressed through secondary thematic analysis.

2.2 The strategic vision behind the change and implementation of agile Methods

Amid the digital revolution that is transforming the sector, the transition from conventional project management techniques to agile approaches inside historic automakers like Volkswagen represents a significant change in strategic orientation. In the past, automotive businesses have functioned under strict, waterfall-based project management frameworks. In the automotive sector, they attempted to rethink their operating models in response to increased competition from tech-savvy disruptors and shifting consumer expectations for connected and electric mobility solutions (Brackmann, 2024). The strategic vision behind the change for Volkswagen is the mentoring of the SSK (Self-Service Kits) that has been integrated into the Volkswagen Group in IT Architecture Guiding Principles (IT-AGP), compiling group-wide policies. This is linked with the agile operating model, since it helps to identify the specific issues faced by the staff.

VW uses softwares like CARIAD to improve its final product car models (cariad.technology, 2025). This is necessary to boost the road safety credentials of the vehicular model, as well as

fostering automation. In addition to scholarly sources, industry reports indicate that the global automotive market is experiencing a structural transition to software-defined cars, electrification and digital mobility services. According to McKinsey and Deloitte reports, more than 40 per cent of vehicle value will be software-powered by 2030, and the traditional manufacturers will have to implement agile and digital-first strategies (McKinsey, 2023). This is driven by the demand of the automated EV products in the European and United States market. For instance, the EU gives incentives towards the software-induced vehicles through relevant legislations such as the CHIPS Act, with 250 million euros investment (digital-strategy.ec.europa.eu, 2024). Other competitors like BMW and Mercedes-Benz have also developed in-house software divisions to fasten the innovation process. These trends of the industry support the strategic vision of the Volkswagen company to implement the agile approach not as an experimental operational process, rather as a strategic requirement to be competitive in the rapidly digitising and platform-based ecosystem of the automobile market.

2.3 The impact of agile practices on team structures, workflow and others

At Volkswagen, the implementation of agile practices has measurable effects on team structures, workflows, and other organisational dimensions, thereby contributing to faster development, greater flexibility, and cost savings. The workflow structure of the company is based on a complex matrix organised as a branded group, along with shared technology platforms such as AI and ML. For instance, the progressive brand group comprises Lamborghini, Audi, Bentley and Ducati manufacturing (annualreport2024.volkswagen-group.com, 2024). The team structure of the company is mainly hierarchical and complex, with provision of role changes after training. Nowadays, Volkswagen is also repositioning its Technical Development (TD) department in Wolfsburg, making the largest engineering department of the Group with 11,500 staff a pace-setter in transforming the Volkswagen brand into a technology company (Hunter, 2022). As an end user, customers are demanding more and more frequent software updates, customised digital features, and smooth connectivity in cars. Automobile industry surveys conducted by automotive organisations demonstrate that people have a rising trend towards over-the-air updates and digital service integration, which is consistent with agile delivery models (Tesi and LUCHETTA, 2021). Agile workflows made similar changes in organisations like Tesla and Volvo, as they have been seen to help them deploy features faster and to increase customer satisfaction. As per the available

data, Volkswagen has a growth of 1.5% in Q1 of 2025 in EU, in comparison to a decline of 9.9% of Volvo cars and 37.2% decline for Tesla cars in the same period (best-selling-cars.com, 2025). Therefore, although they are clear competitors of VW, their market share seems to be falling. In contrast, Siegfried *et al.* (2023) highlighted that, a key negative impact of the scaled agile method is that it could lead to the complete downfall of the traditional vehicle industry as a result of greater focus on digitalisation. The above cases suggest that, in addition to transforming the internal team structure, agile practices can directly affect both the customer experience and brand perception, which makes the implementation of agile practices relevant even to internal efficiency. These identified impacts defined the coding themes used in chapter 4.

2.4 The challenges to implement agile methodology in the firm

The literature identifies the key barriers such as risks, costs, governance, culture and toolchain integration related to business success. However, challenges such as high initial cost regarding the implementation of the technology in full scale, and the lack of experience at the initial stages are major issues. According to Weichbroth (2022), the major issue at the time of implementing an agile project management methodology is related to the individual attitude towards understanding and collaborating with the team leadership by the employees in an environment of high trust. In addition, the implementation of this technique to foster remote teamwork remains a major challenge due to skill and knowledge alignment among the team members. For Volkswagen, the challenge of high initial cost and poor skill management of the employees hampers the complete integration of the engineering features, which needs the active support of digital technologies such as AI and machine learning algorithms. This is also related to the priority selection of specific customer services related to the maintenance and repair of the vehicles to the customers (Reyes *et al.* 2021).

Volkswagen's leadership focuses on the management of the staff based on the inclusion and diversity framework, as well as through the performance assessment of the employees (de Oliveira Santos, 2023). Moreover, the prioritisation of the portfolio by the organisation is related to the factors of digitalisation, electrification and standard realignment (Felser, 2022). In the area of agile product development and strategic management, the company's decision to manage its practices gets hampered as a result of the complex regulatory environment such as those related to data protection and the sustainability such as EU GDPR. The CARIAD software, which has been used

by the company for the longest time, acts as a legacy system and faces massive problems regarding the division of vehicles. For example, CARIAD software quickly became an unwieldy software for the business development of the company with 6000 employees (electrive.com, 2021).

For example, at the time of using an alpha release project management agile approach, the main issue faced by Volkswagen is related to the communication barriers among the employees, which require frequent meetings between the employees, and strong contacts on a real-time basis at the time of prototype testing (Lukas *et al.* 2021). The lack of critical employee skills between the employees regarding proper communication reduces the effectiveness of the projects. Since the company is currently in the process of heavy digitalisation of the available products and services to boost sales and foster innovation, the absence of sufficient digital skills negatively impacts product development. As an example, Volkswagen group and CGI Inc. had built a joint venture to launch a new product namely MARV1N for digitalisation efforts. This also led to the building of a cooperation model by the company that aimed to accelerate team collaboration to develop new products. However, the unavailability of required IT skills among the employees reduces the overall impact on the consolidation of data management, which impacted the project (volkswagen-group, 2025). This is linked with the agile method since it fasten the final delivery of products after strategic manufacturing. This indicates that VW's effort to digitalise the monitoring process of its manufacturing facilities encounters challenges in relation to poor workforce training in its international operations.

The challenge of cultural competencies in the diverse workplace of Volkswagen is another challenge that impacted the implementation of an agile management method in comparison to traditional project management methods. According to de Oliveira Santos (2023), Volkswagen's business in Germany, Portugal and Spain, which also required the development of a Field lab team comprised of workers hired from the Nova School of Business and Economics for a three-month period showed that, the development of a deeper knowledge paradigm faced by Volkswagen regarding the proposal of a new solution and develop innovative team dynamics. This shows that the company needs to enhance its productivity by ensuring that its leaders leading the IT teams have strategic control and understanding of staff needs at the time of digital transformation through agile methods in Europe.

In this regard inclusion of Scrum Framework regarding the implementation of agile methodology ensures proper educational training and experiential learning in order to achieve complete

autonomy and skills for developing effective skills. The critical components of this model involve the roles and events of an employee in the workplace, along with the core values and principles that guide the agile methodological process. In addition, the study by Komorowska *et al.* (2023) showed that, at the time of developing an agile team, the combination of *SAFe (Scaled Agile Framework for the Enterprise)* and *DSDM (Dynamic System Development Method)* is important in the automobile industry. In the context of Volkswagen, this framework could be useful, since through the use of Scrum, the workforce employed at the company can understand the need for change and improvement and the importance of promoting digital technologies for product development. On the other hand, The TAM model is a critical theory which helps in the understanding by a comprehensive explanation of the adoption of new and innovative technologies. The core components of the model include perceived usefulness and perceived ease of use in relation to the development and adoption of new technology in relation to the consumer attitude in the market (Ibrahim and Shiring, 2022). In the context of agile methodology used in relation to the implementation of digital technologies such as AI and ML, the TAM model enables the company managers to develop a critical understanding of the potentiality of success or failure of the technology in the highly competitive business environment (Vărzaru, 2022). These frameworks define the conceptual lens used later in chapter 3.

Another study by Szilva (2025), showed that the training and skill development of employees in the Slovak Republic, with a highly immutable culture had a negative impact on the large-scale reskilling of the employees to use modern technologies such as AI and ML in the supply chain management and software development. Since the programme actively required strategic joint collaboration with the local educational institutes, the challenge of cultural incompetencies impacted sustainable manufacturing (Moghrabi et al. 2023). Therefore, seamless coordination between the employees in a compact workplace is critical to developing a positive environment of business at Volkswagen.

2.5 The Recommendation to reduce these identified challenges

Targeted training and skill development of the staff is critical to boost the overall success of the employees and boost company productivity. According to Aguinis *et al.* (2024), the targeted training programme regarding the usage of AI tools by employees is an important strategy, which allows companies to critically identify specific patterns and enhance the capability of making

predictions to foster new recommendations for product development. For example, BMW in collaboration with the Amazon Web Service developed a cloud-based software service in order to simplify the distribution and management of customer data across millions of its vehicles on the road with the employees (Felser and Wynn, 2023). Also, another author Doskenov *et al.* (2025) argued that the adoption of an augmented reality (AR) learning framework as a part of employee training by Lockheed Martin reduced the product assembly time by 40%, with 92% (high accuracy) failure prediction, which led to a 35% minimisation of the total downtime. The skill improvement of the employees by the company using the AR framework therefore helped them to ensure excellent quality of products in an environment of high competition. Therefore, VW should develop strategic collaboration with the digital service provider companies to ensure skill improvement of workers and ensure timely project delivery in the United States and Europe. This can be achieved by at-scale training of the employees through the evidence from the above stated examples of BMW and Lockheed Martin regarding the use of AI. In relation to agile project development, this will also ensure that the products being developed by the company gets rolled out in the market among the customers on-time. Moreover, Titu *et al.* (2025) showed that kanban is used by Toyota for the development of hybrid and autonomous vehicles with AI inclusion and the management of the supply chain system. VW through the following Kanban method can reduce the response time for the improvement regarding the supply of final automobile products.

The establishment of clear and open communication channels between the leadership of a company with the employees plays a huge role in improving the comfort level among the employees due to empowerment (Omachi and Ajewumi, 2024). This, as a result, also helped the employees to adapt to the changes during agile management implementation. In this regard, as suggested by Abdellatif (2022), Toyota, a major Japanese vehicle manufacturing company during the development of its business in the Egyptian market, actively prompted cross-cultural team development. This was because the company management believed that Japanese and Egyptian cultures are influenced by each other's performance, mind-set and values. This was implemented in the Toyota Motor Engineering Egypt (TMEE) facility, which helped in the improvement of the company's business environment to foster a positive work experience (Abdellatif, 2022). Similarly, the example of Tesla Inc. which believed in the development of human capabilities for the enhancement of corporate culture, also helped them to boost the production of batteries, solar panels, and other associated products. In order to achieve a positive product promotion environment, the company's

corporate vision of developing a cross-cultural organisational environment leads to new ideas and solutions (Renadia, 2022). Therefore, Volkswagen should also focus on developing a cross-cultural team in the agile product development process in order to develop new products according to the choice of the customers.

The cultural sensitivity training by the companies as a part of the agile methodology is another critical part of the market development initiatives and promotes multiculturalism in the work culture (Njom, 2025). For example, IBM's new initiative of the Market Development organisation, a new bunch of people supporting women-owned and diverse culture estimated to generate \$ 1 billion in revenue during the next five to ten years from the early years of the 21st century (Bernardez, 2022). Therefore, Volkswagen should also focus on promoting such cultural training as a part of its agile methodological development to ensure innovation and new product development. This aligns with the company's vision to become a global automotive tech driver by managing cross-cultural sensitivity of the employees. The toolchain integration by VW should be done in accordance with the automated testing facility development (requires the use of AI) and following the CI/CD pipelines.

Based on the understanding of the time requirement to implement the stated recommendations, for a 90-day action, the launch of pilot agile role-based training in one EV programme, digital skills management should be completed.

2.6 Literature Gap

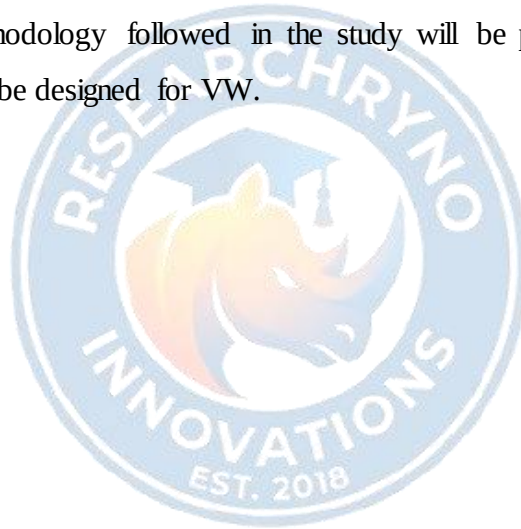
The entire literature review chapter had some critical gaps, specifically in relation to the evaluated journals and articles. The primary gap identified throughout the literature is the lack of VW-specific evidence regarding the following of agile methodology in manufacturing and digitalisation. The study by Poth (2021) failed to discuss the business implications in the area of technology development and adoption of AI by the Volkswagen Company. The study by Otto *et al.* (2025) did not provide a clear understanding regarding the adoption of agile methods by the original equipment manufacturers (OEMs) for business development. Also, the study of Reyes *et al.* (2021) did not discuss the potential importance of using other mechanisms such as RFID and QR-codes as part of agile methods by Volkswagen in comparison to AI.

Furthermore, other key gaps include the improper understanding of the delivery speed of the services to VW in the international market. Moreover, understanding of cross-cultural co-ordination is poor. To address these gaps, the study will apply a secondary thematic coding-based

analysis of the relevant articles and industry reports published between the year 2021 to now by focusing on the themes.

2.7 Summary

This chapter discussed thoroughly the importance of implementing agile methodology by Volkswagen for employee training and customer satisfaction in order to enhance business enhancement. The strategic vision and critical reasons behind the implementation of this method at the level of management of the company and its importance were discussed. Potential challenges and suggestions in order to minimise the negative business impact of those issues by Volkswagen were also discussed. This further includes examples of other companies operating in the global market and using AI and ML for training to achieve agile management mechanisms. In the next chapter 3, the detailed methodology followed in the study will be provided, as well as a future transformation project will be designed for VW.



CHAPTER 3 : METHODOLOGY AND CONCEPTUAL FRAMEWORK

3.1 Introduction

This chapter gives a detailed description of the methodological approach applied to the study of agile project management in the Volkswagen Group's digital projects. The research tries to uncover the degree, the reasons and the challenges that an organization of such a traditionally strict hierarchy would face when taking up agile practices. A research gap was clearly pointed out that there is a lack of empirical synthesis concentrated on large, conventional automotive companies that are in the process of digital transformation. The authors therefore propose to conduct a secondary thematic analysis of existing documents, because this method allows one to systematically identify the patterns, strategies, and outcomes that are reported across credible sources.

The primary material for analysis consists of documents that are secondary sources and are related to Volkswagen's agile transformation in digital projects. In this case, the term digital projects includes activities like software development, IT system improvement, the creation of digital platforms, data analytics, and the development of connected or smart mobility solutions at Volkswagen.

3.2 Research Philosophy

The research philosophy offers the essential assumptions that dictate the corresponding modes of knowledge generation and interpretation in a study. The research adopts the interpretive philosophy since it is the most suitable for the study's objective of unearthing meanings, experiences, and alterations associated with agile project management in Volkswagen's digital projects rather than limiting itself to the measurement of predetermined variables or hypothesis testing.

Justification

Interpretivism is a qualitative research method that is mainly concerned with meanings, contexts, and organisational culture (Zahle, 2021). Secondary documents such as academic studies, industry reports, and corporate publications are subject to analysis in this research with the aim of

identifying themes that relate to culture, managerial interpretations, employee experiences, and organisational responses to agile transformation. Interpretivism, thus, shapes the whole process of how themes are drawn and understood from texts, instead of offering causal explanations or universal metrics.

This philosophical view is right since the research does not measure the impact of performance or the figures of adoption but rather looks at the comprehension of agile practices and their reshaping in an old-school hierarchical auto-making company. On the other hand, a positivist view would mainly focus on the outcomes that can be measured and the testing of hypotheses, thus, being on the opposite side of the study's thematic and interpretive orientation. Although realism could illuminate structural mechanisms, it still would not be very compatible with this research as it would draw the interest away from the subjective interpretations that are situated in the organizational stories. Thus, interpretivism is the most consistent philosophical approach to interpreting Volkswagen's agile transformation through the lens of documentary evidence.

3.3 Research approach and rationale

The research approach is distributed into two main categories - deductive and inductive. The application of the research approach lies in obtaining appropriate answers to the identified research questions. From these two categories, the choice appropriate is the ***Inductive research approach***.

Justification

The current research takes an inductive approach, relying on Braun and Clarke's thematic analysis to extract themes directly from the chosen collection of papers about Volkswagen's digital projects. The analysis does not assign predefined codes but rather allows the themes to be drawn naturally from the data, resulting in the discovery of new insights regarding the use of agile practices in a traditional hierarchical setting, as well as the difficulties and changes involved in the process (Dunwoodie *et al.* 2023). Although the research objectives are responsible for the emphasis on agile transformation, coding is still mainly through induction and semantics, discerning organisational culture, experiences, and interpretations through reports, articles, and corporate publications. This method ensures a detailed understanding of the agile context of the company.

3.4 Research Design

The research design is a specific strategy that is utilized for getting the answers to all the research-related questions that explore topic-related information (Taherdoost, 2022). There are various

kinds of research designs descriptive, explanatory and exploratory. The choice of research design made here is the ***descriptive research design***.

Justification

With the help of descriptive research design, the role of agile methods in forming the strategic vision of Volkswagen can be explained in an informative way. Ansari *et al.* (2022) reviewed that the application of the descriptive research design creates advantages for obtaining information through evaluating particular objects, situations and populations, which allows for investigating the variables to answer the research questions. Through describing the influences of agile methodologies for team structures and workflow, this research design allows for focusing on the ongoing challenges and benefits from the case of Volkswagen. The qualitative secondary research method was applied by the researchers which allowed them to use thematic analysis of documents to investigate Volkswagen's adoption of agility. The method involves systematic identifying of patterns, interpretations, and themes from literature, reports, and corporate publications, not just through general descriptive techniques. In particular, the research carries out a qualitative secondary analysis of the documents connected to Volkswagen's digital projects. These documents include digital projects, for instance, academic articles, industry reports, and corporate publications. Thematic analysis is employed to systematically determine patterns, themes, and insights concerning the adoption, adaptation, and obstacles of agile practices. This methodology not only helps to reveal the through and the tough but also the very culture and the very management of the organization thus giving a very rich, contextualized understanding instead of a mere numerical description.

3.5 Sample

The simple random sampling technique guarantees that all the chosen and grouped information contributes equally to fulfil the objectives and scope of the research. According to Pribadi *et al.* (2025), the simple random sampling technique performs repetitive sampling processes which help to maintain the reliability and consistency of the information. The selection of the documents for analysis was carried out through a systematic purposive sampling approach in this research. The searches for publications after 2020 were done in databases like Scopus, Web of Science, and Google Scholar, and the foundational sources (Agile Manifesto, seminal agile texts) were included without regard to the date. Document screening was carried out according to a structured protocol: initially, relevance was determined by evaluating the titles and abstracts, and then the full text was

reviewed. The final corpus consisted of pre-selected documents, namely, peer-reviewed articles, industry reports, and corporate publications. The inclusion criteria that were used took into account the credibility, clarity of methods, the specific nature of the Volkswagen digital projects, and the importance to agile adoption, thus making the study both rigorous and contextually relevant.

Inclusion criteria	Exclusion criteria
• Secondary sources after the year 2020 are included • Books, Journals, Articles, Online websites, and research papers are considered	• No academic sources before the year 2020 are taken, except older foundational sources • Data sources which are not peer-reviewed are not included

Table 1: Inclusion and exclusion table

Source: Created by the researcher

3.6 Research Instrument

For the purpose of this study, a structured data extraction form was used for data collection which recorded author, year, source type, VW context, agile scope, reported impacts, challenges, recommendations, and evidence strength. One codebook was created for thematic analysis that showed the name of each code, its definition, inclusion/exclusion criteria, and sample text segments. The systematic execution of search strings like "Volkswagen" AND "agile" AND "digital transformation" was carried out across Scopus, Web of Science, and Google Scholar, with the generic title counts being replaced so as to establish a clear, reproducible document selection process.

3.7 Data collection

The role of data collection methods primarily is to investigate all the obtained and relevant information regarding the research problem based on facts and statistics (Mazhar *et al.* 2021). The two prominent data collection methods are primary and secondary where both have their own data analysing procedures. The **secondary data collection method** is selected for this study.

Justification

The secondary data collection method is conducted from secondary sources such as books, articles, journals, website information, industry reports, government reports, etc. According to Ganesha

and Aithal (2022), the secondary data that is collected provides all necessary informative insights related to the research question. The choice of secondary data can help in understanding how Volkswagen implements the agile project management methods to make their project more digital and upfront. The previous project management methods of Volkswagen can be compared with their newly implemented agile methods to identify both positive and negative effects of the implementation.

In order to generate databases about the implementation of the digital project management of Volkswagen, such sources as 'Google Scholar', 'PubMed', 'ScienceDirect', 'mdpi', 'Elsevier' and other databases are used. It allows for generating valuable information for literature coverage about the digital project of Volkswagen, which allows the variables related to the usage of project management tools, IT infrastructures, communication nature and team maturity. As per Mazhar *et al.* (2021), the major benefits of the secondary data are that it allows for gathering particular databases that have already undergone the statistical process. When compared to the "primary data", the choice of the "secondary data" has enabled the work to stay equipped with larger datasets and lower biases (Kale, 2022. Ajayi (2023) stated that while primary data offers real-time data, opting for secondary data can make the research have data that relates to the past. Secondary data including the industry reports on the adoption of agile within the automotive sector, can offer a better understanding of its trends and issues, which can further be compared and assessed with Volkswagen's case. To leverage the searchability of the quality sources, the research has also made inclusion of several keywords.

Some of the keywords that have been preferred by the work include "agile project management", "strategic vision", "challenges of agile methodology", "effect of agile practices", and others. The alignment with these keywords ensured that the work could acquire relevant sources that could assist in meeting the research objectives. The document selection went through a five-stage process: (1) a systematic search of the databases (Scopus, Web of Science, Google Scholar) over three weeks (2) elimination of duplicates; (3) reading the title/abstract based on how applicable they are to the VW digital projects and agile adoption; (4) review of the full text; (5) final list of included documents. Timing was monitored week-by-week. In case the VW-specific sources are not enough, a backup plan allows for the inclusion of other legacy OEMs, with per source applicability checked. PubMed was not included, concentrating only on the management and engineering databases that are relevant to agile in automotive digital transformation.

3.8 Data Analysis

The collected data is required to be analysed properly so that the obtained unorganised information can be organised and arranged in a desired way. Data analysis techniques identify the specific patterns in the collected data and process them to get meaningful informative outcomes. The choice of data analysis technique for this research is ***the thematic data analysis technique***.

Justification

As per the understanding of Ahmed *et al.* (2025), thematic data analysis considers all qualitative forms of information from different sources and prepares a fully organized and acceptable result so that its meaning can be interpreted easily. Thematic data analysis can contribute to analysing the challenges that come while applying the agile project management method and also can be helpful in recognising the appropriate solution measures to resolve the challenges identified (Lombardi *et al.* 2023). The research utilized Braun and Clarke's (2006) themed analysis method, starting with the researcher getting to know the documents, then going through the initial coding, inconsistencies and similarities being defined and named, narrative with evidence-based excerpts produced. The coding was done mainly semantically, which means it was capturing the most explicit meanings. There was a consistency check through recording and an audit trail, and the quality of the evidence was weighed by giving more importance to the peer-reviewed sources than to blogs or industry reports, which resulted in a strong, trustworthy thematic interpretation of Volkswagen's agility transformation in digital projects.

3.9 Ethics

This study obtained no ethical approval as it uses only secondary data from public documents. The copyright laws were observed in the case of all the sources used, and they were accurately presented to prevent misinterpretation. Any sensitive information related to the company was not included, thus guaranteeing confidentiality and compliance with ethical standards. The use of these measures not only maintains but also enhances academic integrity and respect for Volkswagen and other stakeholders by applying a powerful thematic analysis to the area of agile adoption in digital projects.

3.10 Research limitation

This research is restricted by the use of secondary data only, which prevents gaining any insights directly from the organization. Even though there are recording checks, the use of one coder for

thematic analysis might lead to the introduction of interpretation bias. The results are also only applicable to Volkswagen, which makes it hard to generalize them to other automobile companies.



CHAPTER 4 : RESULTS AND FINDING

4.1 Introduction

The data analysis and findings chapter will provide a detailed thematic analysis of the execution of agile project management practices followed by the automobile giant Volkswagen as a part of their strategic development. Moreover, a findings section will also be given based on the data and articles analysed during the analysis.



4.2 Thematic Analysis

4.2.1 Thematic Coding



Source	Source Type	Extracted evidence snippet	Initial Code	Theme	Reliability
Felser (2022).	Peer-reviewed article	In industry 4.0 era, the use of AI, big data, IoT systems, as well as robotics become essential	Benefits of digitalisation	Vision behind the use of digitalisation in agile methods implementation	High, since it talks about the use of digital technology as a part of agile method.
Daum (2022)	Consultancy report	The Agile process mainly involves the development of small functional prototypes related to the development of short iterations.	Impact of agile method in manufacturing	The role and effectiveness of agile methods in manufacturing	Medium, since it did not specify a particular agile method.
Kim <i>et al.</i> (2022)	Peer-reviewed article	Incumbent companies like Volkswagen and Toyota experienced discontinuous technological change.	Implementation of digitalisation as part of agile method	Challenges of agile methodology	Medium, since the study is not properly linked with VW

Taferner (2022)	Peer- reviewed article	Agile developmental approach is linked with the inputs from the software and the industry.	Role of software inputs	Recommendati ons to mitigate agile method challenges	Medium, since the study does not provide specific examples related to VW.
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Table 3: Thematic Coding

(Source: Self-made)

PRISMA Diagram:



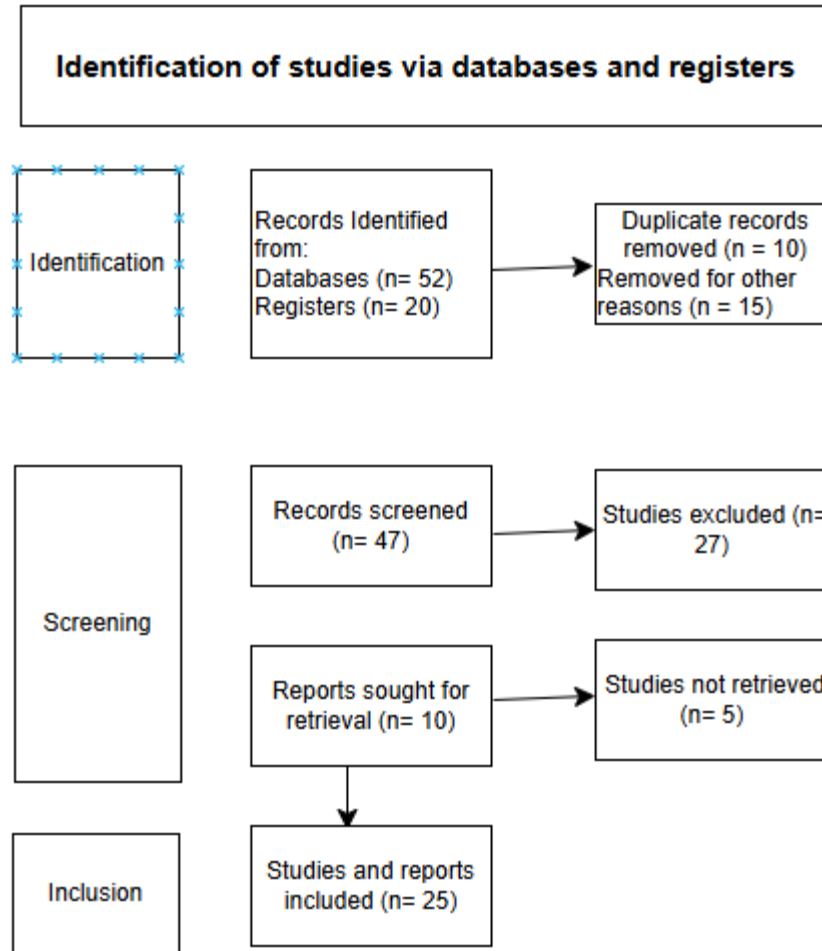


Figure 2: PRISMA diagram
(Source: Self-created)

4.2.2 Thematic Map

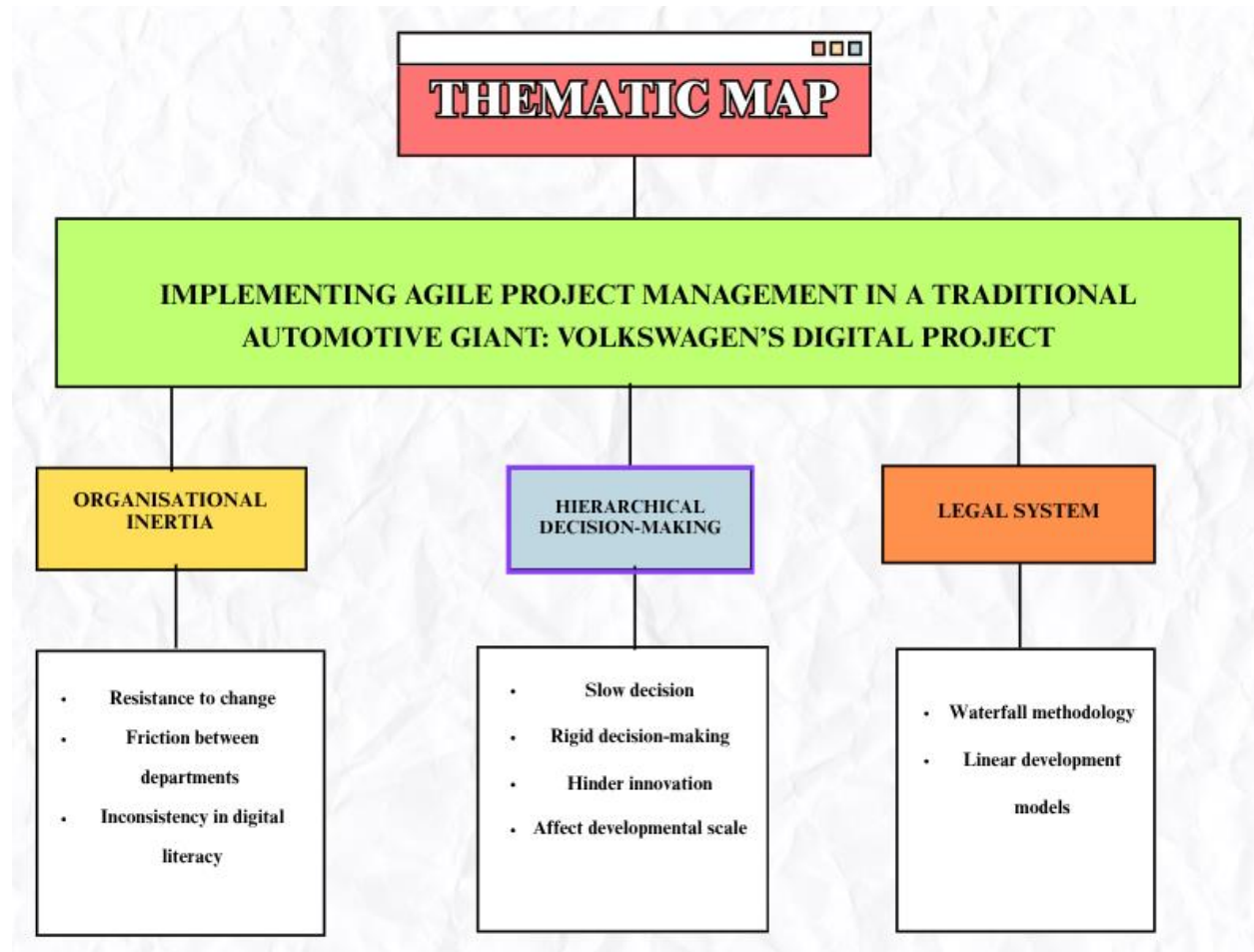


Figure 3: Thematic Map
(Source: Self-developed)

4.2.3 Strategic vision behind the change and implementation of agile methods in Volkswagen

This theme explores the main reasons and the beneficial impacts of implementing the agile method by the management of Volkswagen in the business environment. The implementation of agile methods for the development of hybrid vehicular models as a part of the sustainability effort further enables them to develop an integrated strategic framework of cloud-based systems. According to Felsner (2022), the availability of highly sophisticated cloud technology also enabled the German automobile industry to develop a comprehensive blueprint for implementing digitalisation as a part of the advanced development of new car series.

Use for the IT systems

Poth (2021) highlighted that the major strategic vision behind the use of agile methods is related to the transformation of the IT management techniques, which also led to the delivery of critical needs of the company based on QiNET's innovative procedure. However, the implementation of this procedure evolves in a significant manner in response to the deployment at a corporate level. The company's implementation of agile method, based on the 2022 report, found that as a result of the agile engineering method implemented by the company, they were able to reduce product modelling and designing time by 25%, which translated into 40 months in comparison to the earlier time requirement of 54 months (Volkswagen, 2022).

Enhancing in-house consultations for operations

The VWGS-C plan, primarily implemented by the company in Portugal and Germany, helped the company to develop operations in such a way that enabled it to provide in-house consultations and boost operations. As a result, the company, during the COVID-19 pandemic, was also able to boost its baseline reach for further expansion of the services across the EU through intrinsic interconnectivity (Li, 2023).

4.2.4 Impact of agile practices on team structures, workflow and others

This theme focuses on the understanding of the workflow and the team management structures followed within Volkswagen. The implementation of agile methodology by Volkswagen has a profound impact on the speed, adaptation and innovation capability of the company.

Implementation of internal software

Volkswagen uses an agile software development approach through CARIAD, developed in collaboration with Samsung, which helped to bring together the available IT infrastructure, as well as the management of the internal structure of the company at the time of developing the ID.3 model of car (Burr, 2024). Moreover, Daum (2022) revealed that the agile methodology implemented by the company enabled them to boost the manufacturing capabilities in the facilities related to the software development through the employment of 5000 engineers for the development of the CARIAD software. This revolutionises the car manufacturing units of the company through the reduction of total time required for the manufacturing of EVs.

4.2.5 Challenges associated with the implementation of agile methodology in the firm

The introduction of agile project management into a classic car manufacturer such as Volkswagen is a complex issue that provides insight on multiple dimensions of organisational inertia, legal systems, and hierarchical decision-making models. These issues arise as the company tries to change its traditional, linear development strategies to innovative, customer-focused methods to match with the digital transformation (Schaaf, 2021). The past experiences of Volkswagen with the use of the waterfall approach as the core part of the company's engineering and manufacturing culture mainly raised conflict with the principles of agile, like the cross-functional approach, the flexibility of the prototyping process, and the flexibility of the planning process (Kansy, 2024). For instance, the Car Software Organisation project by Volkswagen, which was initiated to harmonise the digital development process among the brands, but the company experienced problems with the integration of agile processes due to isolated teams and the lack of digital literacy among the employees (Poth, 2021). Digital innovation and the resulting complexity and pace of innovation (particularly in autonomous driving, connectivity and mobility services) are the issues that prompted the need of agile project management (Revutska, 2022). Agile allows quicker feedback cycles, deeper stakeholder interaction, and constant value delivery, which is essential in competing with disruptors based on technology. The study by Kim *et al.* (2022), claims that incumbent companies such as Volkswagen find it hard to balance between exploration (innovation) and exploitation (efficiency), as most of them tend to fall to the latter option, since these are the established norms of operating. Besides, Chen *et al.* (2025) state that effective digital transformation initiates the incorporation of agile approaches in terms of governance integration and sociotechnical alignment.

4.2.6 Proposition of recommendations to reduce these identified challenges

In order to minimise the obstacles faced for the implementation of agile management practice in Volkswagen, the company is recommended to use the dual operating system that will divide the exploratory digital efforts and the core manufacturing functions. This will enable agile teams to be innovative without being bound by the old processes. The creation of an Agile Centre of Excellence can help standardise practices, offer mentorship, and have uniform metrics among projects (Taferner, 2022). Besides, scaled agile frameworks such as SAFe or LeSS will assist in aligning a group of agile teams, but keeping the entire strategic orientation (Anthony *et al.* 2024). This confirms that these frameworks increase the agility of large and complex organisations by

balancing independence and coordination. Applying agile tools such as Jira and Confluence to the existing enterprise systems and streamlining the processes is another advantageous aspect of Volkswagen (Demircan, 2023). These guidelines have sound support because structural decoupling and tool integration is demonstrated to have a beneficial impact on agile maturity and friction reduction in traditional organisations experiencing a digital transformation. For example, Porsche, being one of the top automobile brands globally, has implemented the role modelling process to foster their leaders' collaboration in compliance with the greater vision of the business, along with the support of the manager coaches and team guides to fulfill all the tasks in an aligned manner (newsroom.porsche.com, 2025). Shokry *et al.* (2024) supported this by stating that the agile methodology is a skill-based organizational structure, hence it is important that the proactive talents can be incorporated with appropriate mobility. However, in this context, Shapoval (2024) argued that agile methods need proper and equal distribution of available resources to apply the approaches in a more productive way. Furthermore, the hiring of agile ambassadors helps to perform both the resource distribution and recognize the proactive talents to make the agile transformation more accurate.



Recommendations	Impacts
Using a Dual Operating System	Distributes the exploratory digital efforts and the core manufacturing functions
Creating Agile Centre of Excellence	Helps to standardize practices, offering mentorship, and adopting uniform metrics
Application of Scaled agile frameworks such as SAFe or LeSS	Aligns the group of agile teams with keeping the entire strategic orientation proper
Using Agile tools like Jira and Confluence	Streamline the processes
Application of role modeling	Present a realistic picturisation of the change procedure
Hiring Agile Ambassadors	Streamline all the development and change processes

Table 4: Recommendations and impact

(Source: Created by the researcher)

4.3 Findings

The results indicate that the agile approach adopted by Volkswagen is not just a technical modernization; it is a strategic decision they made to rebrand themselves in the fast-changing automotive world. It has identified a good fit with a large part of the literature, but it has also shown significant discrepancy between the vision being framed and how it has played out in practice. One of the main areas of congruency is the desire to become a leader in digital mobility. As it is stressed in literature sources, including Zhao *et al.* (2022) and Kukkamalla (2022), the TOGETHER 2025 Strategy of Volkswagen is aimed at a shift towards software-oriented mobility instead of the traditional manufacturing process. Kantert and Nolting (2021) stated that Volkswagen's agile practices focus mainly on transforming the existing work process in the customer-centric approach and technological integration. Volkswagen's vision is to present this brand as a tech-driven company which aligns its strategy "Mobility for Generations" with the agile

strategy to foster high productivity and improved service delivery to customers. Volkswagen uses "**Agile System Engineering (ASE)**" to improve the features of cars by integrating high-end technologies such as AI, ML, blockchain, cloud computing and IoT. Volkswagen's strategic vision for managing agile methodology primarily focuses on investing more into sustainable and eco-friendly cars with high battery capacity and sustainable features to attract Gen-Z. Volkswagen's agile strategy is mainly based on a customer-oriented and value-based approach that primarily emphasises the personalised needs of consumers in the modern automobile market. With increasing trends towards EVs (electric vehicles), Gen-Z are going to choose eco-friendly and sustainable automobile brands rather than traditional car manufacturers. The annual report of Volkswagen shows that the company shows a surge in its EV sales in 2025, with nearly 465,500 units globally, a 47% hike in sales in 2024 (Volkswagen-group.co, 2025). However, the overall sales of the company have declined in North America and China due to the high competition from other potential brands such as Toyota and GM. On a positive note, Volkswagen experienced a hike in its EV sales by almost 90% in Europe during FY1 in 2025 (Annualreport2024.volkswagen-group.com, 2025).

4.4 Summary

The chapter showed that through the implementation of agile methods by Volkswagen, the company is able to improve the supply chain management of production through digital automation. In this regard, the CARIAD software of the company helped them to mitigate the overall cost of production and enhance productivity.

CHAPTER 5 : TRANSFORMATION PROJECT DEFINITION

5.1 Introduction

From the entire research, it can be concluded that the adoption of Agile project management by Volkswagen can be considered as a strategic necessity which primarily aims to revolutionise the conventional automotive giant into a speedier and software-focused mobility provider.

5.2 Expected project benefits

With the inclusion of an agile approach and meeting those goals of raising the in-house software capacity by 60%. It can be found that Agile methods, specifically Scrum, have successfully improved “Team Work Quality (aTWQ)” and “Technical Team Maturity (TTM)”, which eventually leads to tangible outputs like a 25% reduction in the aspects of design times and product modelling. However, it can be also identified that adopting agile project management also poses some significant challenges that ultimately are a major threat to the company.

5.3 Alternative business options

As an alternative business option, it has seen that automotive companies have traditionally operated within rigid, waterfall-style project management systems. In light of heightened competition from technologically advanced disruptors and changing consumer demands for connected and electric mobility solutions, the automotive industry has begun reevaluating its operational approaches (Brackmann, 2024).

Incorporation of the effective frameworks and necessary planning

For Volkswagen, the strategic objective of this shift focuses on the mentoring of the SSK, which has been incorporated into the Volkswagen Group's IT Architecture Guiding Principles (IT-AGP), establishing comprehensive policies across the group and it will be more visible for the company to invest into focused and effective agile approaches. Poth (2021) argues that Volkswagen's agile team embodies maturity, aided by the spiral dynamics model, which highlights the significance of the Stacey matrix for mapping. The Agile Centre of Excellence (ACE) within Volkswagen Group IT offers an Agile Toolbox to facilitate this implementation process, which operates through the Quality Innovation NETwork (QiNET) for coaching and facilitation services (Poth *et al.* 2021). The study demonstrates that Volkswagen's strategic vision is deeply implemented in its transformation toward a software-driven mobility provider, thereby emphasising the role of agile in countering disruptors and enabling customer-centric innovation. Besides that, from the findings

of the study, it has been revealed that agile reduces development cycles by 25%, with the support of VW's ACCELERATE and TOGETHER 2025+ strategies, thus confirming that agility fosters responsiveness, digital competitiveness, and sustainability. Thus, both evidence and theory establish agile as an enabler of Volkswagen's strategic positioning, which ensures it is still competitive in a rapidly digitalising automotive sector.

Establishing a centralized and dedicated transformation management office (TMO)

Developing a transformational management office is a strategic approach that includes a direct reporting system. The recommendation here is to generate a small and high authority TMO where reporting will be done directly to that board's members, whose only function is to govern the adoption of agile project management across all the business units of an organization (Sia-partners.com, 2024). The function here includes supervising and governing every business unit, such as production, software, and design, ensuring the consistency of the framework, such as scaling scrum/ SAFe, mandating accountability, and centralizing the expenses. This TMO would directly address the challenges of legacy mindset and cultural incompetence by enforcing standardized agile processes and values across the entire company.

In this regard, it can be said that organisations across the globe, like NorthShore University HealthSystem, large retail centers, and even technology solution providers, incorporate the TMO model for their strategic transformations (Ipmcinc.com, 2024). However, it can also be argued that if the TMO is overly processed, it may introduce bureaucracy which Agile aims to eliminate. This may also slow down the autonomy of local teams. Moreover, a strict centralised framework may fail to work in the unique needs of operation and cultural nuances of several brands or specialised engineering units, which eventually leads to an ineffective incorporation of agile project management tools.

Integrating a strategic external partnership

As said by Attah, *et al.* (2024), a strategic external partnership between two or more organizations can help in expanding market reach and can be a fundamental option driving growth and innovation. This initiative is able to directly address the lack of digital skills among their employees by offering hands-on and immersive learning in a highly mature digital landscape. Eventually, this can rapidly elevate employee practical skills, which is way more effective than traditional theoretical learning. Moreover, the incorporated external experts may also reach

cultural incompetence by playing an immediate role model that represents adequate agile behaviors and mindset, which can accelerate that cultural transformation while also reducing the interaction conflicts. However, Ilori *et al.* (2024), criticised this strategy by illustrating its potential limitations.

5.4 Expected project disbenefits

Weichbroth (2022) highlights that a significant challenge in adopting an agile project management methodology is the employees' mindset towards understanding and collaborating with team leadership in a high-trust environment. It has been found that the most notable challenges in the adoption are not technical, but rather socio-cultural. Social and cultural challenges in this case include high initial upfront costs, pervasive cultural incompetence, and a crucial lack of skills among employees. However, in order to address the challenges, the company must invest in targeted training by leveraging innovative techniques such as augmented reality or AI tool lanterns. This can be helpful in bridging the skills while cultivating transparent communication and developing a cross-cultural team to maintain internal friction and safeguard the full benefits of the new strategic changes. Lastly, it can be comprehended that through adopting such effective project management, the company positions itself as a world leader in the innovation of future mobility solutions.

The results from this work reveal lack of skills, cultural resistance, and structural inertia as the primary issues that Volkswagen faces. The problems occur because the company attempts to transform its old, linear development approaches into the new innovative, customer-oriented approaches to align with the digital transformation (Schaaf, 2021). Agile implementation tore down the hierarchies, which brought conflict in communication and governance.

5.5 Project approach

The initial goal that concerned the comprehension of the strategic vision of agile adoption is evidenced by facts that refer to Volkswagen's adherence to digital mobility approaches, such as software integration and shorter development cycles. Therefore, it can be stated that Volkswagen's digital project can follow Agile methodology. Whereas, the traditional method offers strong risk control, effective governance plan and compliance, which are highly significant in the automotive industry and are essential in the automotive industry, due to their requirement of appropriate safety standards and regulatory direction, owing to the unique challenges faced by this industry (Tereso,

2025). However, engaging with traditional models can lack flexibility in responding to current technological and rapid digital changes.

In the context of selecting Hybrid methodology, the company can be helpful to maintain adaptability, faster innovation cycle, and customer feedback integration, but it may somehow struggle with large scale coordination. Additionally, an agile model focuses on the discipline of traditional project planning with Agile practices, like cross-functional collaboration. This will eventually enable Volkswagen to maintain its control on accelerating digital responsiveness.

5.6 Project management team structure

By assessing the RACI matrix, the project stakeholder involvement can be effectively shown.

Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
The Agile Project Manager is responsible for the delivery of the project	Development teams are accountable for successful completion of the project	The business stakeholders and Agile coaches will be consulted to proceed with this project	With the regular reporting, the senior leaders will be informed.

Table 5: RACI Matrix

(Source: Created by researcher)

The above RACI Matrix (Table) will help to avoid any kind of conflicts, reduce role ambiguity and enhance decision-making efficiency, which is highly crucial, when transitioning from traditional process to Agile project management in Volkswagen.

5.7 Project plan

The project objectives are to be achieved through involving the agile driven effective implementation procedure which can be aligned with Volkswagen's digital transformation procedures. Initially, the entire process followed the agile capability to connect with the stakeholder alignment and project plans. During the execution process the entire process also followed the faster software integration, enhanced responsiveness and cross functional collaborations to meet with the market demands. The performance objectives can be structured through KPIs and managing the sustainable digitally focused action engagement.

Tasks	Month 1-4	Month 5-6	Month 7-8	Month 9-10	Month 11-12
Development of project charter					
Identification of risks and risk mitigation					
Finalising project design					
Initialising cost control and quality control					
Undertaking data security					
Reviewing contracts and documents					
Testing the application of digital technologies					
Project closing and hand-over					

Table 6: Project breakdown structure

(Source: Created by the researcher)

The entire process thus ensures long term organisational value management by following its scalability. Furthermore, the reason behind this is that agile promotes inclusiveness, openness, and

constant enhancement. A staged delivery strategy comprising commencement, planning, execution, monitoring, and closing will be used to accomplish the project's goals. In order to guarantee controlled development and accountability, each goal is matched with particular deliverables and time-bound benchmarks so that focused deliveries can be achieved.

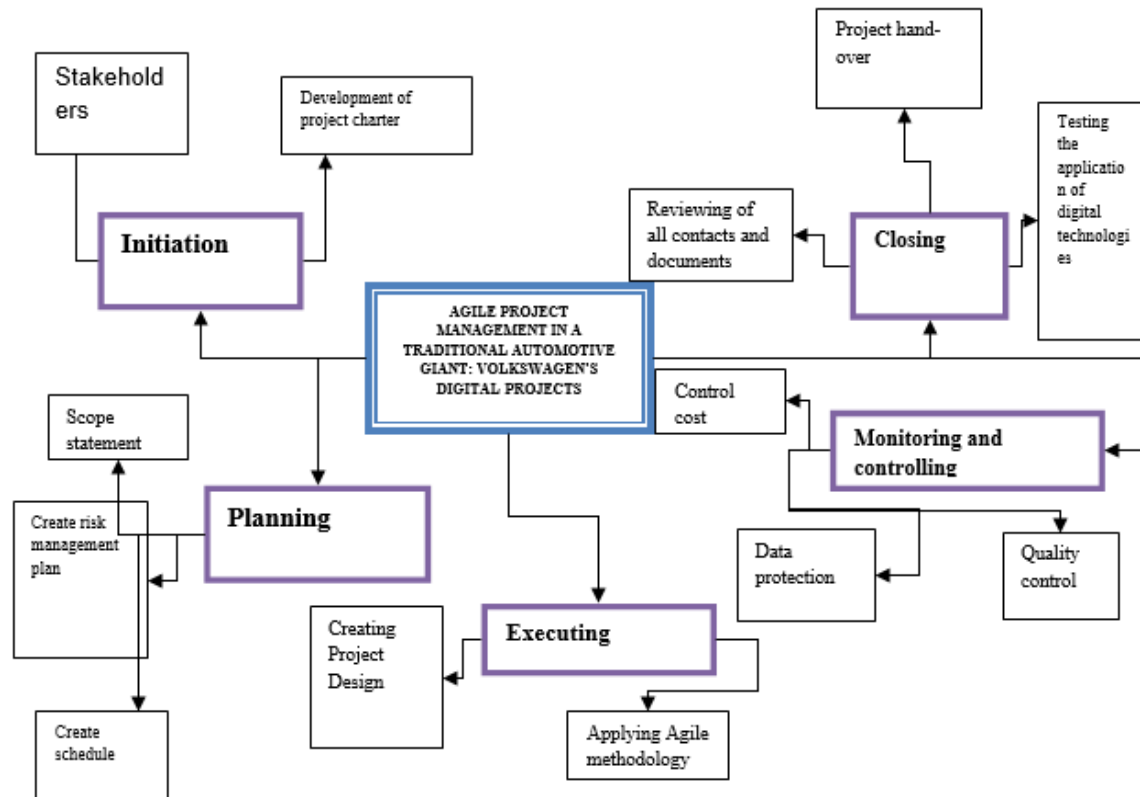


Figure 3: WBS Plan

(Source: Created by the researcher)

The above WBS Plan is aligned with the involved stakeholders and they are the significant partners of this project to achieve the optimal success.

5.8 Project cost

The below mentioned project cost is fixed through a bottom up costing approach where the overall estimation is delivered directly from the project breakdown structure and work breakdown structure. The costing plan also connected with the required resources like costly feeds, technological support, project management planning and training plans.

Cost Category	Related WBS Element	Description	Estimated Cost (€)
Project management planning	Planning and governance	Project manager, reporting, coordination	45,000
Investment in human resources	Agile team setup	Scrum master, product owner, developers	180,000
Training and change management planning	Agile enablement to enhance project plans	Agile coaching, workshops, staff training	60,000
Technology and tools used	Digital Infrastructure	Agile tools (Jira), software licenses	40,000
Development activities	Digital solution management	Design, development, testing	120,000
Quality assurance	Testing and validation procedure	Sprint reviews, QA testing process	30,000
Communication and stakeholder engagement	Stakeholder management plan	Meetings, workshops, documentation	15,000
Risk and contingency	Risk management of the project	Integration for unforeseen issues	49,000
Total estimated project cost			€539,000

Table 7: Costing plan

Source: Created by the researcher

5.9 Identification of major risks

The two major strategic risks are- 1) Inclusion of agile methodology 2) Misalignment of the agile methodology

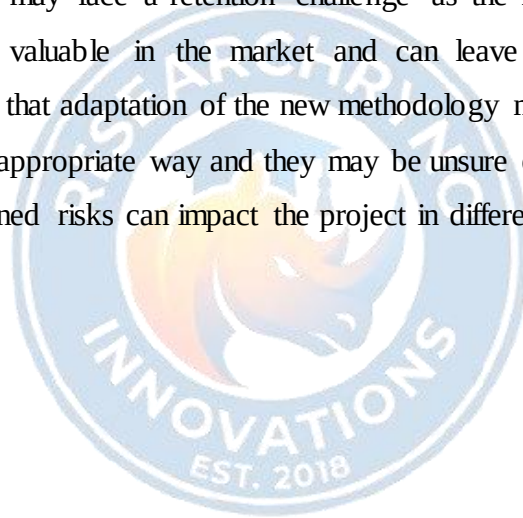
Major project risk is seen in the resistance of Volkswagen to implement agile methodology at the initial stage and through this it has also seen that proposed projects may not come up with fully directed and effective investment opportunities.

The second major challenge that can generate here is the misalignment with the agile methodology and this may create difficulties in the management processes and handling of the activities properly.

2 specific operational risks are- 1) Retention risks 2) Capability and skill gap

Additionally, the company may face a retention challenge as the new, skilled, and competent employees become highly valuable in the market and can leave the organization for better opportunities. It can be seen that adaptation of the new methodology may create several difficulties for the team to work in the appropriate way and they may be unsure of the entire process.

The total four above mentioned risks can impact the project in different ways.



Risks	Probability of occurrence	Level of impact	Mitigation strategy
Inclusion of Agile Methodology	High	This can lead to slow adoption, create project failure and reduce benefits	Comprehensive planning towards agile training programs
Mis-alignment of Agile Methodology	Medium	This can result in wasted investment, which can bring strategic drift	Integration of strong portfolio governance
Retention risk	Medium	Having delays and reduced output quality	Inclusion of the process of advanced training plan and proper employee support
Capability and skill gap	High	Increased cost and implementation delays in the project	Proper coaching support and providing technical feasibility plan

Table 8: Risk likelihood table

(Source: Created by researcher)

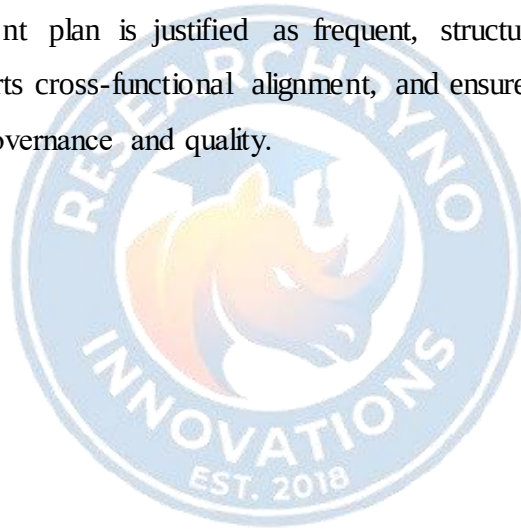
5.10 Communication management

For this particular project, different stakeholders can show their interest and get involved. Senior management, project managers, software development teams, conventional engineering teams, IT vendors, and end users are important stakeholders of this project. While project managers concentrate on delivery quality and speed, initiate risk management planning, and cross-functional coordination, senior management is concerned in strategy alignment, cost effectiveness, and

competitive advantage. While IT suppliers look for precise specifications and deadlines, agile and engineering teams are focused on role clarity, teamwork, and skill development (Dosovitckaia, 2024).

Weekly reviews and stand-ups for operational teams, monthly steering committee meetings for senior management, and transparent progress reports and dashboards should all be part of engagement. This kind of stakeholder engagement strategy is justified because regular, customised communication lowers resistance to change, promotes agile ideals of cooperation and openness, and guarantees alignment between the objectives of digital transformation and conventional automotive operations.

Here, the stakeholder engagement and their association with the project would follow sharing reviews, bi-weekly meetings, monthly steering committee work planning, and transparent digital dashboards. This engagement plan is justified as frequent, structured communication reduces resistance to change, supports cross-functional alignment, and ensures Agile adoption aligns with Volkswagen's traditional governance and quality.



CHAPTER 6 : REFLECTION

6.1 Key Learnings

My Business Transformation Project on getting Volkswagen to accept the agile methodology has provided me with three significant know-how. Firstly, I had to evaluate a big amount of secondary documents (situation), so I was using thematic coding and critical evaluation (action) which led to my ability improvement to derive actionable insights from complicated sources (result), and thus I will employ this skill in the future research projects to effectively communicate the evidence (transfer). Secondly, in the change management studies, I noticed that there were opposition and resistance to the agile methodology especially in the top management (situation), therefore, I chose to look into the cultural and legacy-system barriers very deeply (action) and thus I was able to gain a more profound knowledge of practical organizational problems (result) that I will be considering when giving advice on transformation initiatives (transfer). Thirdly, the iterative drafting and feedback cycles (situation) were the source of my practicing agile project management personally (action) and thus made me more confident in independent, adaptive work (result), I will keep on applying the agile methodology in difficult tasks (transfer).

6.2 Expected project benefits

My project is expected to achieve the following benefits:

- Better agility and nimbleness in the Volkswagen digital projects.
- Increased cross-functional work resulting in accelerated innovations.
- Stronger customer satisfaction due to the right processes with delivery and constant customer feedback. I support these advantages with my results and explain how agile practices allow decreasing the missed deadlines and enhancing flexibility in software-based automotive projects.

Benefit	Reflection	KPI	Who Benefits	Target
Team coordination	More realistic than speed	Integration issues	Digital & engineering	Fewer delays
Agile culture	Culture > tools	Agile maturity	Employees	Gradual improvement
Decision clarity	Governance matters most	Decision time	Product owners	Quicker approvals
Change readiness	Resistance higher than expected	Engagement score	HR & managers	Higher buy-in
Delivery stability	Quick wins uncertain	Release predictability	Organisation	Stable cadence

Table 9: Project benefits and target

(Source: self-developed)

During the process of secondary research, I applied several strategies to the sources like assessing their relevance and credibility, organizing the documents according to themes, and resolving the differences in evidence by giving importance to peer-reviewed or VW-specific reports. Sources considered weak were removed, and themes were adjusted through a process of iteration. There were limitations like depending on secondary data and bias of the single coder which was lessened through recording checks and keeping an audit trail.

6.3 Alternative business options

The other project concept that could have been pursued is lean manufacturing enhancements or supply chain optimisation. Although they are useful, I think that my selected project is more feasible as the agile transformation directly supports the strategic vision of Volkswagen to be a software-based mobility provider. The benefits are more preferred since they are in trends in the industry and can be implemented since agile structures are being tested in the firm. I looked at other options like lean manufacturing but eliminated them since they were beyond the scope of the study on digital agile transformation, had no adequate VW-specific data, and did not match the research gap pointed out in Chapter 2. This practice enlightened me that, in a large OEM, selecting a transformation focus requires a trade-off between organizational priorities, insights, and industry drivers, and it must be not only aligned with VW's strategy but also with the larger digital trends. Lean manufacturing is less suitable because it targets physical processes, not digital agility, lacks VW-specific evidence for digital projects, and risks misalignment with software-driven transformation priorities.

6.4 Project Disbenefits to be expected

One of the disadvantages I understood to put up with was the productivity decline in the short run that took place during the training and the iterative agile adoption. This was a result of the personnel getting used to the new ways of working. To circumvent it, I would have organized the training in phases and given the staff clear instructions. I also discovered that would-be role confusion, especially between Product Owners and functional managers, would create a situation where the rights to make decisions were not clear and there were delays in escalations, thus indicating the necessity for the establishment of distinct duties and the provision of communication pathways.

6.5 Project Approach

Choosing a hybrid project approach, I figured out that the main reason for making the approach most suitable was the balancing of the regulatory/compliance requirements with the agile delivery needs. Results from thematic analysis revealed that using purely agile methods could result in lack of supervision, while traditional methods also could cause delays in the iteration process. Hence, I might as well accept the trade-off between enforcement and flexibility and higher coordination overhead. Looking back on the team roles, I realized that I initially disregarded the presence of change manager, architecture lead, and works council liaison, who all are vital in a culture-heavy OEM. In the future, I would enhance the RACI matrix by clearly identifying the accountability of these roles and making sure that the escalation routes are well-defined, hence improving the coordination and the decision-making process.

6.6 Team structure

Project Activity / Deliverable	Product Owner	Scrum Master	Dev Team	Architecture Lead	Change Manager	Works Council
Define digital requirements	A	I	R	C	C	I
Sprint planning	A	R	C	I	I	I
System architecture design	I	I	C	R	I	I
Software development	I	I	R	C	I	I
Agile transformation support	I	C	I	I	R	C
Change communication	I	I	I	I	R	C
Compliance & co-determination	I	I	I	I	C	R
Sprint review & demo	A	R	C	I	I	I

Table 10 : RACI table
(Source: self-developed)

From this I have come to realize that unambiguous role design is the key to preventing overlap and hampering agile delivery. At first, I overlooked roles like that of a change manager, architecture lead, and works council liaison, which are very important in a big OEM. To enhance the RACI, I would specify decision rights, allocate single-point accountability, and delineate escalation paths in a more detailed manner.

6.7 Project Plan

While working on the project I found out that transforming an organization in a year requires a partiality between the organizational realness and the innovation—first estimates of the timeline were very optimistic as far as the cultural alignment and iterative digital adoption were concerned. It was difficult to convert the high-level insights into a PBS/WBS because decomposition into simple, manageable tasks revealed that there were unaddressed areas regarding both scope and dependencies. This helped me reinforce my comprehension of integrated planning applied in complex, culture-sensitive projects.

6.8 Project Cost

- Training (€1.5M):

Includes agile methodology training for employees and managers, role-specific workshops for Product Owners and Scrum Masters, coaching sessions, certification programmes, and internal capability-building initiatives to support cultural change.

- IT Systems (€2M):

Covers procurement and licensing of agile project management tools, collaboration platforms, software integration, system upgrades, cybersecurity enhancements, and ongoing technical support for digital project teams.

- Consultancy (€1M):

Encompasses fees for external agile consultants, transformation advisors, process redesign support, benchmarking, and specialist expertise to guide large-scale agile adoption within Volkswagen.

- Contingency (€0.5M):

Allocated for unforeseen costs such as additional training needs, tool customisation, change resistance mitigation, or delays arising during the transformation process.

6.9 Major risks

I came to the conclusion that risk framing involves setting up events with evident causes and effects, but it is still not possible to make certain estimations regarding probability and impact without primary data. In the case of culture-dependent transformations such as VW's agile adoption, the main area of mitigation is through engagement and training. Employee resistance and delays in legacy systems were identified as high-probability risks, whereas strategic misalignment and insufficient digital tools were recognized as major operational risks, thus

pointing out the necessity of concerted efforts in the area of culture and leadership alignment as a priority.

6.10 Communication management

Through the project, it became clear to me that the engineering teams were the most difficult ones to get on the same page with leadership and digital teams because of the old practices. It was necessary to have a well-defined rhythm for the communication to be effective: daily stand-ups for coordinating tasks, bi-weekly retrospectives for giving and taking feedback, and monthly town halls for making decisions and escalating issues. Communication that was consistent and targeted helped in reducing resistance by making goals clearer and dealing with the cultural issues which were pointed out in Learning.



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