EFFECTIVENESS OF STRATEGY IMPLEMENTATION APPROACHES IN GERMAN MULTINATIONAL COMPANIES IN THE SOFTWARE INDUSTRY: A CASE STUDY OF SAP SE

By

STELA KOLEVA

DISSERTATION
Presented to the Swiss School of Business and Management Geneva
In Partial Fulfillment
Of the Requirements
For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

December, 2021

EFFECTIVENESS OF STRATEGY IMPLEMENTATION APPROACHES IN GERMAN MULTINATIONAL COMPANIES IN THE SOFTWARE INDUSTRY: A CASE STUDY OF SAP SE

by

STELA KOLEVA

APPROVED BY

IVANA NOBILO, PH.D., Chair

Anna Provodnikova

<Member’s Name, Degree>, Committee Member

Iva Buljubasic, Ph.D., Asst. Prof.

<Member’s Name, Degree>, Committee Member

RECEIVED/APPROVED BY:

<Associate Dean’s Name, Degree>, Associate Dean

Abstract

EFFECTIVENESS OF STRATEGY IMPLEMENTATION APPROACHES IN GERMAN MULTINATIONAL COMPANIES IN THE SOFTWARE INDUSTRY: A CASE STUDY OF SAP SE

STELA KOLEVA
2021

Dissertation Chair: IVANA NOBILO, PH.D.

Various approaches to aiding multinational companies (MNCs) in the strategy-implementation process have been suggested. However, MNCs in the software industry, such as the German company SAP SE, operate in a diverse, dynamic, and challenging environment that can make effective strategy implementation difficult. This study aims to determine which of several strategy-implementation methods is most effective for SAP SE: the commander approach, the organizational-change approach, the collaborative approach, or the cultural approach. The researcher addresses the research questions using qualitative research based on a descriptive research design, collecting primary data from the top managers in SAP SE. A total of 58 participants engaged in the study's structured questionnaire (n = 51) and interview (n = 7). While the collaborative approach to strategy implementation is dominant, this research shows significant differences in effectiveness between the collaborative approach and both the commander approach (P = 0.022) and the organizational-change approach (P = 0.035). Likewise, differences in effectiveness exist between the cultural approach and the commander approach (P = 0.024). This study also describes various challenges in using the highlighted strategy-implementation tactics, suggesting through its outcome that a combined

approach best enables managers to address difficulties as they arise. This study suggests that managers of MNCs in the software industry consider adopting a collaborative approach as a means of creating synergy across units and locations. A combined approach could also address the challenges faced during strategy implementation.

Table of Contents

List of Figures

List of Tables

Chapter I: Introduction

1.1 Introduction

Globalization places a high demand on organizations to expand abroad (Edwards et al., 2016; Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020). Those organizations that venture into various countries become multinational companies (MNCs) (Sageder & Feldbauer-Durstmüller, 2019). To achieve their goals and objectives in a complex, international environment, these expanded organizations need strong management and an effective strategy (Fragouli & Nicolaidou, 2020).

The central concern for strategic managers is how an organization can ensure both short- and long-term survival and outperform its competitors (McDonnell et al., 2016). As their organizations have embraced a strategic approach to the design and application of management plans over the past two decades, managers have had to learn about strategy implementation (Andrews et al., 2017; Merkus et al., 2019). Strategy formulation itself is a difficult task, and the implementation thereafter is even more challenging (Li et al., 2008; Yang et al., 2010; Jofre, 2011). As Yaprak et al. (2011) observe, various factors impact the process of transforming strategic plans into organizational actions. According to Gilbert and Behnam (2009), strategy implementation has become the key management challenge that corporations face. However, Baroto et al. (2014) argue that strategy execution is less precise than strategy formulation; Jofre (2011) states, in addition, that implementation is more difficult than formulation.

According to Yang et al. (2010), a well-formulated strategy may not result in higher-level performance for an organization if the strategy is not successfully implemented. Čater and Pučko (2010) agree: A well-crafted strategy is likely useless if poorly executed. Still, despite the importance of strategy implementation, some organizations fail to deploy their plans efficiently, due to a lack of expertise or an inappropriate implementation approach (Li et al., 2008). Strategy implementation that receives insufficient attention at the appropriate organizational level also results in failure (Li et al., 2008).

Organizations adopt different approaches to strategy implementation throughout the world, and an understanding of their respective methods can help explain progress toward expected outcomes. Ideally, multinational corporations should use strategies to expand their operations, recognize cultural diversity, and increase their future effectiveness. To this end, Rajasekar (2014) argues that effective strategy implementation is a significant factor in MNC success. A strategy's success or failure may depend on its implementation approach.

The software industry currently dominates the world, with many core businesses operating through online software. Information technology plays strategic role, and the increased rate of innovation requires continually updating technological skills. Sales and subscriptions to software packages and aids generate revenue in the software market, which consists of several sectors that generate their revenues differently. The market in Europe had been experiencing moderate growth before the pandemic, due to increased enterprise and individual utilization of cloud and mobile computing. In Europe, Germany maintains the most prominent software market with a large market value, accounting for 12.5% of the total value of the European software market in 2020 (MarketLine, 2021).

Researchers have yet to conduct serious empirical studies on the topic of strategy implementation in multinational companies in Central and Southeast Europe, including those in Germany (Okumus, 2003). The scarcity of literature on strategy implementation and strategic performance management in Germany prompts greater focus on the MNCs based there, especially due to the growing global influence of contemporary German MNCs (Li et al., 2008).

Therefore, this study investigates the effectiveness of strategy-implementation approaches in German MNCs in the software industry, using the software company SAP SE as a case study.

1.2 Background of the Study

Due to the rise of globalization and advances in information technology, multinational organizations operate in a dynamic environment (Edwards et al., 2016; Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020). Those that exist internationally—particularly MNCs—face challenges when expanding their operations to other national markets and, thus, must adapt to each location. These organizations encounter complications, such as differing cultural norms, economic crises, legal and political differences, and technological changes (Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020). Lehner (2004) notes that within a global market, an MNC must formulate and implement strategies that ensure long-term survival. Strategy implementation involves acting on formulated strategies to ensure improved organizational performance (Merkus et al., 2019). According to Yaprak et al. (2011), strategy implementation is the operationalization of a business's activities, to achieve competitive advantage; however, its effectiveness heavily depends on the efficiency of the implementation (Ul Musawir et al., 2017; Cândido & Santos, 2019). Baroto et al. (2014) argue that strategy implementation involves developing a responsive internal organizational structure that nurtures and builds competencies and skills, including personnel selection for vital positions. Yang et al. (2010) define strategy implementation as the process of translating both policies and strategies into actions, through the development of budgets, programs, and procedures. This challenge may require more time than strategy formulation takes.

Baroto et al. (2014) also affirm the difficulty of strategy-implementation research, which entails examining the timeframe for implementation and addressing methodological and conceptual challenges. Indeed, this process involves several interacting variables

(Cândido & Santos, 2019), including putting the appropriate strategy into practice, aligning the culture and structure of the organization, and resourcing to manage the changes. Čater and Pučko (2010) note that successful strategy implementation relies on the information acquired during the analysis stage of strategy formulation. According to Rajasekar (2014), although analysis is significant, implementation is the most complicated part of strategic management and should be expected to consume the most time. Effective strategy implementation also requires creativity, leadership, attention to detail, communication, and precision, and necessitates simplifying complex activities (Andrews et al., 2017). In many organizations, strategy implementation remains problematic, for reasons such as a lack of communication or commitment, ineffective management, a misunderstanding of the strategy, poor coordination, a lack of necessary resources, or uncontrollable environmental factors (Li et al., 2008).

Strategy implementation remains crucial for MNCs, due to their complexity and manner of growth, often leading to excess personnel capacity, and considerable overlap in products, markets, and technologies (Wortmann, 2000). The complicated nature of MNCs may also result in intra-firm competition, where organizational subunits compete for corporate resources, positioning within the system, and mandates (Becker-Ritterspach & Dörrenbächer, 2009). Organizations generally adopt various approaches to aligning their practices with strategic plans. Yang et al. (2010) note that making a strategy work effectively cannot be a straightforward task, and the relationship between strategy formulation and strategy implementation is not linear. Yaprak et al. (2011) argue that approaches to strategy implementation create a vision for the organization's future as well as for the methods needed to achieve its set goals. MNCs face a challenging environment that requires preparedness, and effective strategy implementation creates opportunities for these companies to develop and improve (Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020).

The expansion of the international economy has led to growth for companies operating in different national markets (Gunnigle et al., 2019; Butzbach et al., 2020). Jofre (2011) defines MNCs as organizations that have established similar functional business units in various countries. Gilbert and Behnam (2009) argue that MNCs are predominantly large organizations with high sales volumes that, at times, exceed the size of some countries' economies. MNCs heavily invest in foreign countries and fully involve themselves in managing their offshore assets (Li et al., 2008). Additionally, MNCs possess up-to-date technologies, specialized skills, and key market players, and they tend to offer differentiated products (Edwards et al., 2013).

In developed economies, MNCs are numerous and covered by collective agreements. In Germany, more than 500 MNCs compete for market share, resources, and customers, both domestically and globally (Gilbert & Behnam, 2009). The steep competition requires an organization to use strategic planning to achieve its mission and vision. In most cases, MNCs distribute global plans and control their subsidiaries from head offices. According to Lehner (2004), MNCs utilize broad strategic plans and focus on the "80/20 rule," emphasizing the locations that create about 80% of the organization's value. This enables them to evaluate factors that might influence successful strategy implementation. Multinational companies whose strategic managers cannot analyze both internal and external environments face critical challenges in strategy implementation (Edwards et al., 2016; Bijaoui, 2017). Baroto et al. (2014) caution that MNCs need successful strategy implementation, but that implementation could fail 75% of the time, and problems often occur. Most successful organizations focus less on strategy formulation and more on implementation, which requires better alignment with organizational resources.

Planning is indispensable at the international level, and MNCs operating in any location need strategic management to implement their strategies successfully. Strategy implementation may fail if the chosen approach is inappropriate or suffers from poor communication, coordination, or alignment of resources. Although Gilbert and Behnam (2009) emphasize the effectiveness of strategy implementation in organizations, MNCs have lagged in this, disregarding the challenges they encounter without it.

Strategy implementation in MNCs requires strong management professionals (Momin, 2018) who can operate in countries with different legal, socioeconomic, technological, and political environments (Edwards et al., 2016; Bijaoui, 2017; Gunnigle et al., 2019). In Germany, researchers report similarities in strategy implementation among the MNCs, and according to Gilbert and Behnam (2009), German MNCs run their operations differently from those in other countries. For instance, whereas American MNCs use both offshore distribution and production, German MNCs send distribution offshore but retain all activities related to production in Germany. This implies a difference in strategy implementation linked to organizational culture and structure. Also, changes profoundly affect German MNCs, including the tightening of financial-system regulations, with the result that many strategies allow altering rules in competitive environments (Schanz et al., 2017).

Various recommendations exist for increasing the effectiveness of MNC strategy-implementation processes. According to Yaprak et al. (2011), some perceive strategy implementation as a straightforward process relying on simple and easily adaptable tools; but Jofre (2011) notes the importance of environmental analyses as a precursor to strategy implementation, including benchmarking; strengths, weaknesses, opportunities, and threats (SWOT) analysis; and performance measurement systems. German MNCs have used these approaches, but Rajasekar (2014) suggests that the cultural particularities of host countries have significantly moderated the effectiveness of German strategy-implementation methods. According to Gilbert and Benham (2009), German MNCs aim to integrate simple tools and processes with advanced techniques, including utilizing technology to initiate conversations and monitor progress in strategy implementation. Most German MNCs have failed to implement strategies effectively, due to selecting inappropriate approaches.

This study's objective is to determine approaches whereby the executives of software MNCs headquartered in Germany can improve strategy implementation, to create shareholder value. SAP SE, a German MNC that develops software and cloud applications for customer relations and business operations, faces challenges in implementing its investment strategy. Using SAP SE as a case study, empirical data exploring the company's strategy-implementation approach was collected through qualitative research.

1.3 Research Problem

Strategy implementation is indispensable to an organization's preparation for the future and fulfillment of its mission and vision. However, most of this process requires organizational changes that stakeholders may resist. Lehner (2004) suggests that strategy implementation concerns managing this change and resistance, and Yang et al. (2010) note that this process entails visionary and theoretical perspectives. Nonetheless, strategy implementation is an administrative process that involves enacting change by transforming organizational culture, working with and motivating personnel, and organizing. Businesses operating in the global market face a dynamic business environment that can cause problems affecting future operations if not anticipated and managed. Hrebiniak (2008) highlights executing a strategy involving control, motivation, and the balancing of power politics. According to Rajasekar (2014), the global market in which MNCs operate is unpredictable, complicating the strategy-implementation process. Even if, at times, strategy implementation appears less important than strategy formulation (Li et al., 2008), MNCs can find strategy formulation easier than implementation. Consequently, a proactive strategic-management team that can successfully develop and implement a strategy is a necessity.

Several strategy-implementation studies note the significant role of strategic management within an organization (Rajasekar, 2014; Guruwo et al., 2017; Sageder & Feldbauer-Durstmüller, 2019). Gilbert and Behnam (2009) examine strategy-management processes in German MNCs, looking specifically at deficits, future perspectives, and the status quo. They note that the status quo and deficiencies in an organization profoundly affect the strategy-management process and, thus, MNC performance. Rajasekar (2014) conducted a similar survey within the service industry, focusing on selected companies in Oman and identifying leadership as the primary determinant of successful implementation. In seeking to establish critical factors in the implementation of a sustainable strategy, Günther (2016) demonstrates proper planning, communication, choice of implementation models, and stakeholder-oriented strategy considerations as determinants of success. Guruwo et al. (2017) conducted a study to establish the relationship between effective implementation and organizational performance, finding that the relationship creates profound change, and mainly internal factors affect it. In their literature review, Sageder and Feldbauer-Durstmüller (2019) note that internal and external environmental factors affect MNC management, resulting in poor strategy implementation if not addressed.

Few studies focus on the effectiveness of strategy-implementation approaches, particularly in MNCs. Despite their important roles in the international market, MNCs often fail to effectively implement strategies to resolve future operational and economic challenges. The lack of relevant research produces a gap in knowledge for scholars and in solving unique strategy-implementation problems for MNCs. This study seeks to close the gap by determining the most effective strategy-implementation approach for German software MNCs, using SAP SE as a case study.

1.4 Purpose of Research

This qualitative study investigated the effectiveness of strategy-implementation approaches in German MNCs in the software industry, using data collected from top managers at SAP SE, through interviews and questionnaires.

1.5 Significance of the Study

This study provides insight into strategy implementation in MNCs from the software industry with headquarters based in Germany, including the dominant approaches they use. Identifying dominant approaches can guide new and existing MNCs in their strategy implementation. Other insights from this study relate to the effectiveness of various strategic-implementation approaches, which could aid MNCs in understanding the application of those approaches in different scenarios. This is significant in light of the dynamic business environment and its unique problems, which may require different approaches (Rajasekar, 2014). The study also provides insights into the possible challenges that arise from using these approaches, which could benefit the adoption of strategies that address the challenges and assure effective strategy implementation. Only limited research focuses on the effectiveness of strategy-implementation approaches in MNCs, and this study's findings address the literature gap.

1.6 Research Objectives and Questions

The objective of this study is to determine effective strategy-implementation approaches in German MNCs. The subobjectives are:

1. To study different approaches to strategy implementation in German MNCs in the software industry;
2. To determine effectiveness of a commander approach to strategy implementation in German MNCs in the software industry;

3. To determine the effectiveness of an organizational-change approach to strategy implementation in German MNCs in the software industry;
4. To determine the effectiveness of a collaborative approach to strategy implementation in German MNCs in the software industry;
5. To determine the effectiveness of the cultural approach to strategy implementation in German MNCs in the software industry.

The corresponding research questions (RQ) are:

1. What are the various approaches for strategy implementation in German MNCs in the software industry?
2. How effective is the commander approach for strategy implementation in German MNCs in the software industry?
3. How effective is the organizational-change approach to strategy implementation in German MNCs in the software industry?
4. How effective is the collaborative approach to strategy implementation in German MNCs in the software industry?
5. How effective is the cultural approach to strategy implementation in German MNCs in the software industry?

1.7 Summary and Organization of the Dissertation

Chapter I introduces the study by describing the topic and knowledge gap, thereby situating the topic within the literature, identifying what is known and what is yet to be addressed. This chapter also names the objectives and research questions guiding the study. Chapter II describes the theoretical framework of the study and provides a literature review to explore existing research. Chapter III describes the methodology used in addressing the research questions, and Chapter IV describes the findings. Chapter V discusses these findings based on the literature, followed by Chapter VI that provides implications of the findings and summarizing how they address the study's objectives.

Chapter II: Review of Literature

2.1 Introduction

This chapter assesses studies relevant to understanding current approaches to MNC strategy implementation and focusing on their effectiveness. To gather such studies, the researcher searched online academic databases, using such keywords as strategy implementation, multinational corporations, multinational companies, multinational organizations, approaches for strategy implementation, strategy implementation tactics, management of strategy implementation, challenges or barriers associated with strategy implementation, and effectiveness of strategy implementation. The searches utilized highlighted keywords combined by Boolean operators (AND, OR, and NOT). The researcher also extracted data from websites of the target MNC, SAP SE. The information was then used to analyze aspects of the research topic.

This chapter has four sections. The first focuses on the theoretical framework, explaining the theory of reasoned action and describing its relevance to the study. The second is the literature review, encompassing themes related to the research topic; the third discusses the gap in the literature; the fourth section summarizes the chapter.

2.2 Theoretical Framework

The theory of reasoned action guided this study. Ajzen and Fishbein (1977) propose the theory, which posits that individuals can execute a given behavior of their own volition, basing the chosen behavior on their judgments regarding lived situations and their attitudes (Ajzen & Fishbein, 1977). According to this theory, attitude and subjective norms influence both behavior and intention to execute a behavior (Ajzen & Fishbein, 1977), where how one perceives a behavior and the strength of that belief affect attitude, and normative beliefs involving perceptions of others' expectations affect norms. The motivation to comply with the expectations of others also impacts subjective norms (Ajzen & Fishbein, 1977).

The theory of reasoned action enables assessing how MNCs consider various factors in their choice of approaches to strategy implementation from among the numerous options. As Buttle and Bok (1996) note, important factors include environmental influences, such as the physical and social environments, and the decision requires consideration of the organization's values and goals.

Nkuda (2020) observes that the theory of reasoned action is significantly associated with strategy implementation, insofar as it aids in understanding the behavior of individuals who lead such implementations. According to Nkuda (2020), the individuals responsible for strategy implementation can adopt overt or covert behaviors. Nkuda (2020) also notes that during the initial phases of strategy implementation, those executing such implementation are excited and enthusiastic.

Based on the theory of reasoned action, Nkuda (2020) identifies three groups of factors that influence strategy implementation. The first group includes mixed factors, such as strategy formulation, relationship building, and cross-functional relationships between departments. The second group regards the hard factors, including the corporate structure and administrative elements. The third group is the soft factors, including leadership, corporate commitment, communication, culture, and circumstances related to implementation tactics. In this study, the researcher used the theory of reasoned action to assess the selection and effectiveness of the approaches that SAP SE used.

2.3 Literature Review

Overview of multinational companies

Sageder and Feldbauer-Durstmüller (2019) defined MNCs as organizations characterized by having units dispersed in different countries, with headquarters located in a home country. The authors note that branches in different countries operate within the host country's legal and economic framework. Therefore, MNCs have a complex management structure requiring effective strategic planning. The MNC plays a major role in world trade; according to Edwards et al. (2013), MNCs contribute to about a third of total world trade and provide employment for over 80 million people.

Gammeltoft et al. (2012) note that MNCs are becoming increasingly important as markets embrace globalization. However, they state that this also presents corporations with the challenges of requiring that they adapt to maintain their performance. Corporations also execute strategic initiatives to take advantage of opportunities that globalization presents. Gammeltoft et al. (2012) observe that due to the shifting global economy, MNCs must realign their strategies and structures or face stiff competition. Sageder and Feldbauer-Durstmüller (2019) note that MNCs use control mechanisms to ensure effective coordination between units located across different parts of the world. The researchers mention that corporations must adopt effective output control to make certain that headquarters and subsidiaries pursue similar goals and outcomes, achieved through effective approaches to planning and reporting. Sageder and Feldbauer-Durstmüller (2019) also discuss a need for corporations to adopt process controls that enable the development of standardized employee behavior, ensuring that employees across different units adhere to the corporation's processes.

Gammeltoft et al. (2012) describe the environments of MNC operations, providing insight into challenges and opportunities, as well as the importance of strategy implementation to realizing corporation goals and the implications of operating in the host-country environment. Sageder and Feldbauer-Durstmüller (2019) also note that MNCs must ensure their international subsidiaries can adapt to various host-country conditions, including political and economic pressures, and address geographical and cultural divides.

Gammeltoft et al. (2012) also observe a third environment, namely, that within the corporation. They note that corporations must achieve an internal fit and agreement between the parent organization and its subsidiaries. The internal fit ensures that the parent organization in the home country and its subsidiaries in host countries work toward similar goals. Edwards et al. (2013) indicate that MNCs must differentiate between parent and subsidiaries so that they are not viewed as competing, but rather as interdependent. According to Edwards et al. (2013), while maintaining their internal goals, corporations must integrate host-country requirements alongside home country uniqueness and defining features. However, Gammeltoft et al. (2012) argue that organizational resource limitations or inadequate managerial experience and capabilities could impede MNC efforts to realign strategies to address challenges or capitalize on opportunities. Thus, the authors state that corporations must adopt a strategy that takes advantage of the resources available in the firm's environment. Additionally, corporations must ensure the alignment of organizational structure and planning, both within the organization and with the outside environment (Gammeltoft et al., 2012).

A German MNC operating in more than 180 countries, SAP (2021) is a software application company, founded in 1972 by five German entrepreneurs focused on making use of technology's potential. The name SAP stands for "Systeme, Applikationen, Produkte und Datenverarbeitung". (SAP, 2021). The company's headquarters are in Waldorf, in the south of Germany. In 2020, the SAP Group has 19 significant subsidiaries, all of which were owned and controlled by SAP SE (SAP, 2020). SAP employs over 102,400 individuals and partners with 21,000 companies globally (SAP, 2021). The company had total revenue of about 37.99 billion U.S. dollars during fiscal year 2020 and listings on stock exchanges in Frankfurt and New York (SAP, 2021). Even during the pandemic, about 77% of global transaction revenues involve SAP, and it has roughly 200 million cloud users. SAP supplies software technologies to enable customer businesses to become intelligent enterprises with increased profitability and sustainability.

Introduction to strategy implementation

In today's economy, many organizations seek ways to enhance their business to remain competitive in the market. According to Čater and Pučko (2010), organizations no longer attempt to achieve results but, instead, set strategic plans designed to support success in the long term. Organizations at all levels operate within an ever-changing environment in which political, social, economic, legal, and technological aspects constantly fluctuate (Edwards et al., 2016; Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020). Yang et al. (2010) argue that organizations must survey their environments to ensure their future survival. In international markets, organizations face issues that will require strategic resolution if they are to fulfill their mission (Edwards et al., 2016; Butzbach et al., 2020). MNCs face an especially turbulent market, and implementing any strategy may prove difficult (Chen et al., 2016).

According to Lehner (2004), strategy implementation regards an internal activity that the organizational structure, culture, and management leadership style affect. Strategic management comprises three interconnected processes: strategic planning, strategic implementation, and vital control. Yaprak et al. (2011) demonstrate that employees and managers facilitate the successful implementation of a strategy, but the organizational culture and leadership also affect it. Rajasekar (2014) observes that the need for MNCs to apply strategy implementation in all subsidiaries operating in foreign countries complicates it. Additionally, Baroto et al. (2014) note that managers must seek methods to address strategic planning's purpose and benefits to key stakeholders.

The term "strategy implementation" has no universally accepted definition (Li et al., 2008); however, the analysis of relevant studies indicates three important related terms. The first is the “process perspective,” which defines strategy implementation as a sequence of planned steps (Li et al., 2008) based on the assumption that the implementation focuses on converting plans into actions. Use of the term also identifies strategy implementation as a complex process in which variables determine how different aspects of the plan interact. As strategy implementation may appear as an avenue through which the organization develops skills and competencies to address environmental threats (Li et al., 2008), this use of “process” identifies the implementation as a repeated cycle of planned actions whereby the company operationalizes its programs, strategies, and policies (Li et al., 2008).

The second term used to define strategy implementation is the “behavior perspective” (Li et al., 2008). Viewing strategy implementation from this perspective regards it as actions toward the attainment of identified outcomes, resulting from decisions around resource commitment (Boffelli et al., 2020). The behavior perspective also allows for understanding strategy implementation as organizational interventions involving action from key personnel and organizational structures, with the aim of managing performance to attain desired outcomes (Boffelli et al., 2020). Based on the behavioral perspective, strategic intentions must guide the strategy implementation, and managers must ensure alignment between organizational actions and strategic intentions (Li et al., 2008). The behavior perspective also acknowledges the involvement of external constituencies in the realization of the strategy. The implementation is an action-oriented, human-behavioral activity requiring managerial competence and effective leadership (Boffelli et al., 2020). Therefore, the behavior perspective defines strategy implementation as behaviors of individuals in senior-level leadership and their activities to transform formulated plans into reality (Schaap, 2006).

The third term used to define strategy implementation regards a “hybrid perspective,” where the implementation is considered a summation of activities and choices critical to executing a formulated strategy (Mayende & Joseph, 2020). The hybrid perspective recognizes strategy implementation as a process through which plans are executed, action-oriented and requiring organizational reconfiguration and redesign of structures, systems, people, and processes (Theodore et al., 2017; Mayende & Joseph, 2020). Therefore, strategy implementation is both a cognitive process and a stepwise execution of activities (Li et al., 2008; Theodore et al., 2017; Mayende & Joseph, 2020).

Li et al. (2008) provide a more comprehensive definition of strategy implementation, referring to the dynamic interactions and complex processes that require managers and employees to make critical decisions and execute activities—all the while, considering the influence of interrelated internal and external factors—to achieve a strategic plan. Based on their research studies spanning nine years, Li et al. (2008) focus on factors that enhance or impede strategy implementation and provide insights into strategy formulation's future and factors requiring consideration. Managers—and especially top managers—are thus critical to strategy implementation (Schaap, 2006; Li et al., 2008), and their quality, competency, skills, attitudes, and experiences significantly influence the effectiveness of the strategy-implementation process (Li et al., 2008).

Various other factors influence strategy-implementation effectiveness, including the relationship between different units within an organization (Chimhanzi, 2004; Li et al., 2008). Inter-unit relationships may influence the implementation process through business unit autonomy, the synergy between units, and program-sharing. Ensuring that strategy implementation aligns with human resources is also important to achieving greater success (Chimhanzi & Morgan, 2005). Li et al. (2008) identify managerial and functional competencies, availability of resources, level of involvement in decision-making, and level of coordination between units as important determinants of inter-unit relationships. The degree of coordination and decentralization between unit managers and superior managers also influences strategy-implementation effectiveness (Li et al., 2008). Conflict negatively influences strategy implementation, while effective interpersonal and nonverbal communication has a positive influence (Chimhanzi, 2004).

Communication—specifically, corporate communication—also influences the effectiveness of strategy implementation (Li et al., 2008; Shimizu, 2017). Evidence suggests that an environment where employees can easily access top management enhances strategy implementation (Gulbrandsen, 2019). Organizations in which open and supportive communication characterizes the culture perform well in this regard (Shimizu, 2017; Gulbrandsen, 2019). According to Li et al. (2008), corporate communication permeates and facilitates every aspect of strategy implementation in a complex organizational context. In fact, research indicates that the most frequent barriers to effective strategy implementation regard communication (Shimizu, 2017; Gulbrandsen, 2019). Challenges therein may include any organizational structures that impede vertical communication. Researchers note that enhancing vertical communication lines is critical to achieving strategy consensus and increasing the chances of strategy-implementation effectiveness (Shimizu, 2017; Gulbrandsen, 2019).

Another determining factor in strategy-implementation effectiveness is consensus, critical to ensuring a unified direction within an organization (Ateş et al., 2020). Effective strategy implementation requires the organization to achieve consensus both internally and externally (Desmidt & Meyfroodt, 2018). Various units, subsidiaries, and headquarters must obtain internal consensus, especially in the case of large corporations with different, autonomously operating layers. Developing a shared understanding among these levels is important to avoid obstacles, such as competing interests and needs that might impede effectiveness (Desmidt & Meyfroodt, 2018; Ateş et al., 2020). Both top- and lower-level management must also reach strategic consensus, to eliminate implementation gaps (Ateş et al., 2020). On the other hand, external consensus involves aligning strategy with prevailing policies, economic situation, and markets of the host and home countries (Ateş et al., 2020).

A high level of commitment helps to determine effective implementation (Ateş et al., 2020), ensuring that employees and managers across various levels support the strategy-implementation efforts (Adousi et al., 2018; Nwachukwu et al., 2018). Aspects of this factor include organizational commitment, the extent to which an employee or manager works toward achieving the organization's set goals (Ateş et al., 2020); strategy commitment, the level of understanding and support of the strategy's set goals (Adousi et al., 2018; Ramadian et al., 2020); and role commitment, the extent to which employees and managers work toward achieving the goals and objectives associated with their assigned roles (Ateş et al., 2020). Achieving commitment calls for developing a culture of consultation and engagement, especially during the strategy-formulation phase (Ramadian et al., 2020). Evidence indicates that throughout the strategy-implementation process, the involvement of employees and managers at lower levels is critical to promoting commitment (Ateş et al., 2020; Ramadian et al., 2020). Factors that negatively influence managerial commitment to strategy implementation include perceived low ability to perform (self-efficacy), lack of faith in achieving intended outcomes, and doubt about their outcome's importance to the organization and individual employees (Nwachukwu et al., 2018; Ramadian et al., 2020). Managers at lower levels who lack the required commitment to implementing a strategy that top-level managers have formulated will likely become obstacles (Adousi et al., 2018; Ateş et al., 2020).

Software Multinationals on the German Market and Their Strategies

The software market in Germany has been growing strongly, observing double-digit growth during 2015–2019 (MarketLine, 2020). In 2024, the market is expected to reach a value of $45.5 billion, an increase of over 77% since 2019 (MarketLine, 2020). The market includes large international corporations that, with the regular number of new entrants and constant technological advances, make it moderately competitive. Continuous advancement in technology compels the companies to have competitive pricing strategies (Cohen & Neubert, 2019). Partnerships are another strategy enabling market players to survive the competition. This promotes interoperability among players and diversification, helping to ease competition to some extent (Mitchell, 2015). The buying power in Germany is high; many buyers rely on certain players who sometimes must lower their switching costs through partnerships so that the applications that buyers acquire can foster interoperability.

The software corporations employ highly qualified employees and pay them well. The most needed personnel are skilled programmers who contribute significantly to the market success of these companies. Therefore, organizations employ individuals with exact and flexible knowledge and acquire modern hardware devices as a strategy for success (Elbahri et al., 2019). These resources enable the players to survive in the market while achieving their objectives, making this strategy effective. Organizations also keep increasing their ability to predict and adapt to new technological advancements and changing customer needs. They must study their customers and the general market to achieve this, and they employ different strategies for researching and responding to the changing market. Some use open-source software while others introduce new products.

The global players that dominate the software market in Europe include International Business Machines (IBM), Microsoft, Oracle, and the German MNC SAP, the market leader (Aggarwal et al., 2016). These organizations dominate specific sectors of the market, depending on the services they offer. "Research and development" is one main strategy these players use, to enable them to bring to market highly innovative products and services and achieve their organizational objectives. IBM Corporation differentiates itself from rivals by using an intense research-and-development network. The corporation has various delivery centers globally, enabling it to make the most of local expertise and client associations by being reliable, responsive, and competitive (Aggarwal et al., 2016). The organization's research focuses mainly on technologies, including nanotechnology cloud, security, silicon, quantum computing, blockchain, and artificial intelligence, all of which increase its patents.

On the other hand, Oracle focuses on combining its various applications with platform technologies as a strategy for improving the performance of its products. The corporation's research-and-development function concentrates on introducing new or enhanced functionalities to their offerings, depending on customer needs or efforts to support the growth of third-party networks. Oracle differentiates itself by harnessing the latest technologies for its application suites (Aggarwal et al., 2016). The organization has also recently launched new products; its big-data solution strategy enables it to store data sets on a single platform in the cloud. An extensive partnership network is the primary competitive strategy that Oracle uses, and this offers it substantial value and helps expand its revenues.

SAP SE offers supply chain, human capital, customer relationship, travel and expense, and data management software solutions for enterprises. It provides services to various industries across Europe, Africa, America, Asia, and the Middle East (Benzmann, 2021). The company's financial reports show stable year-to-year profit-margin increase. Thus, its strategies are effective and contribute to the company's objectives. Currently leading the software industry market in the category of enterprise applications, the company collects its revenue by selling software licenses, subscriptions, and implementation services.

SAP transformed itself from being a traditional local software provider to a cloud company by partnering with another organization needing to match the innovation changing the shape of the software industry (Verma & Rana, 2021). Leadership was one of the key strategies that the organization used to achieve this goal. Leaders from each level set visions to guide their teams, encourage passion and trust, and train their individuals to perform. This strategy meant to ensure that the organization would not lose its talent to its rival and could maintain its top skills. Great leaders were its instrument of successful transformation.

Before commencing the strategic transformation, the company admitted its weakness in developing leaders; it was not completely aligned, with contrary approaches across its operations internationally. The general development of leaders in the organization was not highly effective and not aligned with its bigger strategic plans and priorities. Therefore, after considerable evaluation, the company saw the need for a new leadership development tactic (Benzmann, 2021). They settled on an approach that depended on four main principles. SAP decided it had to touch each level of leaders using an aligned method, with clarity for consistency of communication. It also realized that leadership development must closely relate to the values, plan, capabilities, culture, and business. Having to move fast, SAP wanted a more practical and straightforward program, to reveal and spread the definition of outstanding leadership in the organization.

SAP has thrived by prioritizing stakeholders, and its top engineering talent has significantly contributed to its success. Its total revenue has experienced an increased growth rate, and increased efficiency in cloud-services delivery led to an increase in gross margin (Elbahri et al., 2019). The organization acquired Qualtrics, a platform that enables its customers to listen, comprehend, and act concerning the essential experiences of their enterprise. These experiences include the brand, employees, customers, and, finally, the product. The platform has enabled SAP SE to expand its customer base. The organization focuses more on safeguarding the best stakeholder experiences, ensuring that it leads in the experience economy, increasing its customer Net Promoter score. These changes serve the end of improving the organization’s customer experience.

Approaches to strategy implementation

MNCs' business environment affects the internal implementation of their strategies. According to Guruwo et al. (2017), these organizations face challenges in implementing policies related to culture, structure, and leadership. The success of a strategy's implementation depends on the approach adopted. One influencing factor worth noting is the tactics used during the implementation process (Li et al., 2008). According to Radomska (2014), tactics for implementing a strategy include persuasion, participation, edict, and intervention. A participation approach involves articulating strategic goals and nominating a task force to propose and develop options for implementation (Li et al., 2008). Yang, Guo-Hui, and Eppler (2010) note that a persuasion approach entails winning organizational employees' and comanagers' consent to the strategic action. At the opposite end, an edict approach, as Maotwanyane (2017) describes it, relies on the power of management to provide directives concerning a plan's implementation.

According to Lehner (2004), five methods can advance strategy implementation: the collaborative approach, the commander approach, the change model, the crescive model, and the cultural model.

Commander approach

The commander approach addresses an organization's strategic position and acts as a guide for managers to chart its future. The CEOs of MNCs can use this approach to forecast the opportunities and challenges an organization may face. According to Rajasekar (2014), they must use both competitive and economic analyses when planning resource allocation to successfully implement the strategy. Stepwise processes that exclude participation by subordinates characterize the commander approach. This includes autocratic decision-making, wherein a person assumed to be a rational actor is made solely accountable for the strategy's implementation (Farcas et al., 2020). Such individuals possess significant power, either through exclusive knowledge regarding the strategy or bureaucratic hierarchical leadership (Drummond-Smith, 2018). The use of a commander approach is likely when top managers have a strong interest in the developed strategy and required course of action, and they believe that the plan is important for the organization (Farcas et al., 2020). Managers who single-handedly developed the strategy, as happens in small organizations, will also likely adopt the commander approach (Farcas et al., 2020).

The main reason for adopting the commander approach regards a need to react to threats; the perception of an increased threat leads to the higher probability of a dominant autocratic approach to strategy implementation (Farcas et al., 2020). The situations in which the commander approach is utilized, such as during emergencies or as a disaster response, signal its importance (Farcas et al., 2020). As one example, evidence indicates that when facing the limited resources and breakdown in communication that Covid-19 caused, the commander approach became the preferred tactic for the public health sector, to ensure that they remained ahead of the threat the pandemic posed (Farcas et al., 2020). Drummond-Smith (2018) cautions that the micromanagement typical of the command approach is ineffective, noting that employees require time and space to complete their tasks. Strategic leaders are responsible for allowing their subordinates the freedom to execute various duties within the overall strategy.

Organizational-change approach

Two conditions define the organizational-change approach. The first is the availability of at least two alternatives that do not differ significantly in their overall use to achieve strategic goals. Since the organizational-change approach is political, unlike the commander approach, subordinates have a stronger voice and the responsibility to choose between alternatives (Guruwo et al., 2017). The second condition concerns the need for the organization to accept the selected option. Though this might lead to a different goal than initially planned, the alternative should remain able to facilitate attaining the original goal as a secondary outcome. This approach focuses on choosing not so much the optimal alternative as on alternatives that satisfy the established criteria and relevant stakeholders are likely to accept. In the organizational-change approach, subordinate participation ends at selecting alternatives (Baroto et al., 2014). Therefore, it is similar to the commander approach; both divide the organization into some groups involved in thinking and others involved in acting. For both commander and organizational-change approaches, participation is not based on the quality of the choice as subordinates perceived it, but on acceptance (Yaprak et al., 2011).

Yaprak et al. (2011) mention that during strategy implementation, the organizational power structure significantly influences decisions regarding the allocation of required resources. According to Baroto et al. (2014), well-prepared plans may fail if implementers fail to confront the complex political and organizational obstacles that could interfere with strategy implementation. Guruwo et al. (2017) likewise caution that regulatory changes relate to resistance that must be addressed for the plan to succeed.

The organizational-change model emphasizes incentive compensation, structure, and control systems that can appropriately facilitate strategy implementation. This is notable when one considers that, according to Dörrenbächer and Geppert (2009), an appropriately articulated strategy plan can succeed if primary organizational and operating structures are designed, operation-level objectives are set, and adequate incentives and control systems to support the implementation process are created. As Guruwo et al. (2017) observe, the organizational-change approach is appropriate when a strategy aims to change the organization’s structure. Those with well-stipulated strategy-implementation procedures can switch between organizational and planning design, from higher to lower levels of the organization. Change, however, must be managed to ensure that all employees are informed of and working toward the strategy’s success.

Organizational structure directly relates to the success of strategy implementation; thus, the plan must be integrated into and appropriate for that structure. Baroto et al. (2014) argue that the scope of an organization (i.e., its market share, operations, and the geographical region it serves) defines the extent to which strategy implementation may require an organizational-change approach. Such changes profoundly affected MNCs in particular; many of their subsidiary companies may resist or be negatively affected by head-office directives concerning structural alterations. However, internal environmental analysis can help these large organizations to understand the rationale behind adopting an organizational-change approach.

Collaborative approach

The involvement of task forces created during strategy implementation (Čater & Pučko, 2010), to work with diminished authorities who seek their consensus throughout, characterizes the collaborative approach. As Čater and Pučko (2010) explain, it demands creating a taskforce, without lines of authority, as an additional element of the organizational structure. Yang et al. (2010) establish a collaborative approach to strategy implementation focusing on a group's decision-making process, especially that of senior-level management. This usually requires the participation of said management in the strategy-formulation process, to ensure stakeholder commitment. Anyango (2007) suggests that senior organizational managers are critical to the strategic-management process; they foresee all opportunities and challenges present in the business environment. For Gilbert and Behnam (2009), a collaborative approach to strategy implementation involves the entire organization. Rajasekar (2014) agrees, stating that strategy implementation is an internal activity that must involve all employees and key stakeholders.

Although it may resemble the organizational-change approach, the collaborative approach also incorporates retreats, laboratories, and seminars with external experts who can facilitate change and organic processes. Strategic plans require collaboration and consultation with experts, to evaluate the intended strategy's effectiveness and highlight how it may affect the entire organization. Guruwo et al. (2017) show that a collaborative approach to strategy implementation could achieve successful strategy implementation, highlighting its participative nature and communication of strategic goals. However, this approach has shortcomings; it cannot consider an organization's economic perspective. Ideally, an organization would understand the purpose of the strategy, its economic implications, and the workforce required to achieve its successful implementation.

Notably, Maotwanyane (2017) argues that a collaborative approach is effective for organizations that operate within one jurisdiction but less so for international corporations. MNCs find collaboration challenging since they face differing business environments.

Cultural approach

An organization's culture refers to the unique models used to perform various activities (Dartey-Baah, 2013). Sayyadi Ghasabeh (2021) notes that such a culture provides valuable knowledge that functions as a strategic factor, and internal resources that significantly influence implementation performance. Various factors, such as beliefs, general ideas, norms, interpersonal relationships, and loyalty, define culture. According to Anyango (2007), culture explains the behavioral patterns that employees and managers exhibit in the workplace; thus, in most cases, culture affects the organization's operations.

The cultural approach's defining feature is persuasion and the need to convince stakeholders to believe in the adopted action's effectiveness (Dartey-Baah, 2013). Management must compellingly explain the justification behind the preferred cause of action and demonstrate its rationality. Therefore, this appears as a form of the collaborative approach, extending to the lower levels of an organization to gain a holistic commitment to the strategy. The success of the cultural approach depends on managers clearly communicating the mission and purpose, alongside permitting employee participation in the design of their own activities, in the context of the identified mission (Dartey-Baah, 2013). Employing the concept of third-order control, successful implementation is based on shaping behavior through influencing stakeholder beliefs, values, and norms. In cases where the organizational culture does not support its goals, the manager must align the culture with the developed strategy's intentions. Relatedly, the implementation of a cultural approach requires informed and intelligent personnel (Lehner, 2004).

Effective use of a cultural approach in strategy implementation requires consideration of cultural dimensions, such as uncertainty avoidance, which refers to how an organization's members feel when exposed to uncertain conditions (e.g., when the strategy requires cultural change) (Dartey-Baah, 2013). The organization must be able to accept such conditions on a macrolevel and tolerate risk and change. On the organizational level, however, controlling the process and limiting these uncertainties require rules and regulations allowing greater discretion in decision-making (Dartey-Baah, 2013).

Another cultural dimension is power distance, the distribution of power across the organization. Where a heavy power distance concentrated in a few top managers defines an organizational culture, autocratic tactics are likely to figure in the implementation process. On the other hand, cultures defined by small power distances embrace employee interaction and focus less on regulation (Dartey-Baah, 2013). Individualism and collectivism, or the extent of individuals' integration into the organization, play into the organizational culture as well. People who seek self-interest over organizational goals characterize an individualistic culture, often connected to a strategy implementation where employees have the authority to exercise personal freedoms and autonomy. Collectivism defines a culture of group thinking and reluctance to embrace diversity, with conformity and uniformity driving strategy implementation (Dartey-Baah, 2013).

Several authors have analyzed the cultural approach to strategy implementation. According to Yang et al. (2010), organizational culture corresponds to shared norms, values, and attitudes, with the potential to create individual prosperity within a corporation. This process depends on the organizational culture that influences how employees respond to changes. For example, Hrebiniak (2008) finds that a common culture-related issue at an organizational level is a lack of trust leading to inadequate or poor knowledge-sharing among the employees during strategy implementation. All the same, using a cultural approach to implement a strategy might be less complicated than using other approaches because it requires the involvement of all employees, regardless of their position. If the organizational culture already strongly supports the intended strategy, Rajasekar (2014) states, the cultural approach may further build on the culture—or it may try to change the culture and create an environment where the strategy will receive the necessary support.

Baroto et al. (2014) also affirm that the organizational culture creates and supports an environment enabling a strategy's realization and, thus, is a core component of its implementation. Maotwanyane (2017) agrees that shared values and norms can significantly determine the success of a strategy-implementation process. Čater and Pučko (2010) note that an effective strategy implementation requires that the cultural values and norms within an organization are compatible with the strategy's intentions. Guruwo et al. (2017) likewise argue that corporate culture must be compatible with a strategy's intentions to achieve successful implementation. Rajasekar (2014) states that particularly in cases of persuasion and strategy implementation, cultural practices constitute internal marketing, referencing general ideas, norms, higher values, and personal friendships.

Evidence indicates that a cultural approach is usually used alongside other approaches (Lehner, 2004). Strategy implementation that changes culture and processes adopts an organizational-change approach, while one that uses culture to enhance collaboration embraces a collaborative approach (Lehner, 2004). A cultural approach does entail limitations, such as the prolonged time to persuade the organization to believe implementation strategies in their entirety (Lehner, 2004). The approach is also criticized for fostering homogeneity, which could negatively impact individual employee aspirations.

Crescive/Market approach

Lehner (2004) describes the organization that follows the Crescive/Market approach as a market of ideas and possible strategic directions. For this approach to be successful, higher-level criteria have to be implemented to evaluate new ideas. The selection and implementation of new alternatives has to be closely controlled by senior leadership to ensure that a cohesive pattern of implementation courses is followed (Lehner, 2004).

The implementation of a strategy depends on aspects such as leadership, culture, structure, and the business environment; however, the main determinant of effective strategy implementation regards the approach an organization adopts. Most recent studies of strategy implementation include the commander, organizational-change, collaborative, and cultural approaches (Table 1). Strategy implementation in MNCs requires analyzing the economic environment and selecting an appropriate approach, which varies according to the nature of the plan, the size of the organization, and its cultural and structural perspective.

Table 1

Summary of the key features of strategy-implementation approaches

Approach	Tactics used	Description	Strategies for achieving acceptance
Commander	Autocratic	Use of power and directives relating to strategy implementation; rationalization of actions; driven by perceived environmental threats	Use of pressure and legitimate power
Change	Autocratic	Intervention; existence of alternatives; power games	Formation of coalitions into effective groups to choose preferred course of action
Collaborative	Participative	Participation	Bargaining and discussion
Cultural	Participative	Persuasion; process-focused	Appealing to norms, loyalty, and values
Crescive	Participative	Pareto-process, organized anarchy	Pilot projects

2.4 Gap

The literature shows that strategy implementation concerns managing change and resistance. The implementation process requires administrative leadership in the process of realigning the company culture and working environment, as well as in motivating employees. For the challenging business environment of MNCs, formulating a strategy is easier than implementing it. Consequently, these organizations need a proactive strategic-management team that can successfully develop and implement strategies. However, strategy implementation can appear less important than its formulation (Li et al., 2008). Although most strategies fail due to inadequate implementation rather than their formulation, few studies have researched strategy implementation itself. As the literature review reveals, despite an increased MNC focus on strategy implementation, researchers have not extensively focused on the effectiveness of implementation approaches. Without addressing the identified gap in research, MNCs could continue facing challenges that lead to ineffective efforts to implementation strategies that could have helped resolve future challenges.

2.5 Summary

This chapter assesses the literature related to MNC strategy implementation, focusing on the software industry. The theory of reasoned action provides a theoretical framework for understanding strategy-implementation approaches. The theory conceptualizes these approaches as actions based on an individual's judgments of lived situations and influenced by attitudes and norms. The chapter also introduces MNCs, defining the conditions and environments in which they operate. The relevant evidence focuses on factors, such as the approach, that contribute to effective strategy implementation. The chapter defines the collaborative approach, the commander approach, the organizational change approach, and the cultural approach, highlighting the associated characteristics, effectiveness, and shortcomings of each. Few studies have researched strategy implementation by comparing it to strategy formulation, or have focused on the effectiveness of MNC strategy-implementation approaches.

CHAPTER III: METHODOLOGY

3.1 Overview of the Research Problem

This study sought to determine the effectiveness of strategy-implementation approaches in German software MNCs, using SAP SE as a case study. The methodology provides a framework for data collection and analysis. This section addresses the research design, study population, sampling, data-collection methods and instruments, data-analysis methods, mechanisms ensuring the quality of the study, study period, timeline for completing the project, participants, and ethical considerations.

3.2 Research Purpose and Questions

The purpose of the study was to investigate the effectiveness of approaches to strategy implementation in German software MNCs. The data collected from interviews with top managers at SAP SE were used to determine the effective approaches. The research questions (RQ) the study sought to address were:

1. What are the various approaches to strategy implementation in German MNCs in the software industry?
2. How effective is the commander approach for strategy implementation in German MNCs in the software industry?
3. How effective is an organizational-change approach in strategy implementation in German MNCs in the software industry?
4. How effective is a collaborative approach in strategy implementation in German MNCs in the software industry?
5. How effective is the cultural approach in strategy implementation in German MNCs in the software industry?

3.3 Research Design

Mackey and Gass (2015) define research design as the advanced planning of approaches to collecting data in research projects and the techniques employed to analyze data in accordance with the research objectives. To determine the attributes of strategy implementation in Germany, this study used a qualitative research method. Adopting a descriptive research design for data collection and analysis allowed SAP SE employees to describe their behaviors, emotions, and opinions in connection with company strategy implementation. This study relied on primary data that the researcher collected from the participants—top managers in SAP SE's local branches—using structured questionnaires and interviews.

3.4 Role of the Researcher

The researcher was the main facilitator of the data-collection process. As physical recruitment was challenging due to the work-from-home conditions during the COVID-19 pandemic, the researcher crafted recruitment emails to send to identified senior managers, through which she established rapport and trust by providing background information on the study and explaining how she gained access to the participants' contact details. She also explained why she was conducting the research and how important participation would be to the study. The researcher developed a questionnaire and an interview guide used in data collection, tested the instruments to ensure they met credibility standards, and administered the interviews to participants. She also conducted data-processing tasks, such as transcription, checking questionnaires for completeness, and data-analysis procedures.

3.5 Population and Sample

According to Lola et al. (2016), a study population comprises all elements that potentially meet the criteria for inclusion in the study, regarding a group of objects, events, or individuals possessing similar observable features. For this study, the target population included top managers of German software MNCs.

More than 50 German software MNCs operate in Germany and other countries. Due to this large number, this research required a sample. Derfuss (2016) describes sampling as drawing a representative subset of the study population. Accordingly, the researcher conducted the study at SAP SE, an MNC in Germany with regional offices in over 180 countries and around 450,000 customers worldwide. Showcased in international press outlets, this firm is the third-largest software corporation in the world. As a global organization, SAP SE must implement a strategy to attain competitive advantage in both foreign and local markets. The target research group was SAP SE's senior management team, whose members had participated in implementing strategic practices at the time of the survey.

Top managers are critical assets of an organization, particularly concerning decision-making. They play a significant role in strategy implementation; collecting data from them would provide information that could help identify appropriate strategy-implementation approaches among German software MNCs. A sample of 80 top managers at SAP SE was selected for this study, sufficient for a high-quality study to attain data saturation (Marshall et al., 2013) and ensure generalizability of results to the wider population of German software MNCs.

3.6 Participant Selection

The researcher utilized a purposeful sampling technique to select participants, enabling an information-rich case study and access to insights into the related subject matter (Merriam & Tisdell, 2015). Thus, the researcher promoted the study's efficiency by capitalizing on the method's natural biases (Etikan, 2016). Using specific selection criteria to implement purposive sampling enabled the researcher to identify and recruit participants perceived to have the knowledge and characteristics that answering the research questions required. The selection criteria called for participants to be (1) senior managers at the selected organization, (2) currently in managerial positions with an influence on strategy implementation and in such positions for at least six months, (3) who reported directly to the executive board or up to three levels below, and (4) leading at least 200 employees or involved in a strategy function in the organization.

The invitation email the researcher sent to participants included an explanation of the research and the participation requirements. It also stated that the that involvement in the study was optional. Following the recommendations of Marks et al. (2017), the recruitment email described the study and the researcher’s interest in the study participants. It also described the study’s objectives, its benefits, the steps to be taken to ensure confidentiality and data security, and participant eligibility and role, and concluded by asking participants whether they were willing to participate in the qualitative interviews.

The researcher used a questionnaire (see Appendix A for exact wording) to identify participants who best fit the desired sample population and who would be willing to participate in physical and online interviews. Prospective participants with experience in strategy formulation and implementation and those who had experienced challenges with their strategies were deemed best suited for the study. The questionnaire also identified candidates with convenient availability for physical and online interviews

To ensure obtaining the required sample size of 50 participants, the researcher sent 80 invitation emails.

The researcher engaged with those participants who were willing to be interviewed. A secondary email was used for screening participants who had responded and agreed to follow-up interviews. Eligible candidates had at least six months of experience in strategy implementation. All those who met the requirement received a consent form that included the background and aim of the study, the steps taken to ensure confidentiality and privacy, a quotation agreement, and an explanation of the participants' role. The participants were required to review and sign the informed consent form in advance of the interview. The researcher targeted recruiting between 5 and 15 eligible participants for the interviews.

3.7 Instrumentation

The research was quantitative, qualitative and descriptive, primarily using observation techniques without altering participant behavior. The data-collection methods and instruments consisted of structured questionnaires completed by 50 top managers in SAP SE, combined with semi-structured interview with seven eligible participants to determine the effectiveness of strategy-implementation approaches in German MNCs.

Saunders et al. (2012) describe questionnaires as a method of data collection in which participants answer questions in a sequential and contextual manner, and the same set of questions, to ensure the trustworthiness of data collected from a large sample. A written questionnaire can be administered easily via email, allowing for timely collection of responses from participants in various geographical locations.

The researcher developed the questionnaire used in this study and a senior tutor from a Ph.D. dissertation coaching service (https://gradcoach.com/) reviewed it. The researcher used the online platform SurveyMonkey to distribute the questionnaire. The questionnaire had three sections (see Appendix A). The first focused on demographic information and determined a respondent's age, gender, place of work, duration of experience working on strategic implementation, current position, specialty, and highest academic qualification; the second addressed strategy-implementation approaches by asking the respondent to identify the optimal approach and assess it through a rating; the third used seven items to assess the challenges the respondent faced in implementing the identified approach. The developed questionnaire used varying scoring criteria, as some questions were open-ended while others were closed. To ensure the validity and reliability of the questions, the researcher conducted a pilot test with two participants from the target population, using the resulting feedback to improve the questionnaire.

Another key data-collection instrument was an interview facilitated by a semi-structured interview guide, consisting of questions relating to the effectiveness of SAP SE's approaches to strategy implementation. The first set of questions explored the participants' experience and their observations of the approaches the company used, assuming participants were unlikely to know of only one approach, considering their differing ages, locations, and departments, and the inference that an approach that one department used might vary from those used at different times or locations. The second set of questions explored factors affecting strategy implementation, both positively and negatively. A third set investigated how communication of a strategy to employees affects its implementation. The final group of questions explored whether the participants considered the strategy implementation at SAP successful. The interview guide also included follow-up questions that the researcher used to prompt further responses regarding a shared subject. The questions posed to participants during the interviews appear in Appendix B.

The researcher developed the interview guide, guided by the literature and expert opinion, and solicited an expert review of the questions to garner counsel regarding the study and the interviews. Based on the guidelines from the literature and expert reviewers, the researcher adjusted the questions. Access to comprehensive experience, professional understanding, and expert knowledge enabled the researcher to enhance the credibility of the study and provided valuable feedback, ensuring the suitability of the final interview tool (Libakova & Sertakova, 2014). The researcher also relied on the questionnaire feedback in formulating the interview guide. This enabled examining participants' rationales for their responses and the subsequent gathering of more information through open-ended questions.

3.8 Data Collection and Processing Procedures

The data collection used both physical and online platforms to manage the social-distancing restrictions associated with the COVID-19 pandemic. Data collection began one week after participants responded to the recruitment emails, screening questionnaires, and informed-consent forms. After receiving the consent forms, the researcher compiled a participant list to guide the data-collection process.

The questionnaire-based data were collected first, followed by the interviews. The researcher began the process by emailing selected participants a link, directing them to the questionnaire on the SurveyMonkey platform. Participants had three weeks to answer and return their questionnaires. All questionnaire forms contained a serial number that was matched to participants' names to form a unique code, ensuring the protection of participant identities while maintaining distinctions within the dataset. Once completed questionnaires were received, the researcher analyzed the responses and used them to direct the interviews.

The interviews took place using Zoom video-conferencing for participants working from home or face-to-face to engage participants working on SAP SE premises. Each participant agreed to the interview time established with the researcher, respecting both parties' availability and provided a written consent to record the interview.

A week before the Zoom interviews, the researcher reminded participants to have a computer or smartphone with Zoom software installed that would provide a stable Internet connection. At the agreed-upon time, the researcher initiated the Zoom session, welcomed participants, and reminded them that the session was being audio-recorded. The researcher then reviewed participants' rights to quit the interview or skip any question.

After the welcome, the researcher used the interview guide to ask questions and allowed participants sufficient time to respond. Follow-up questions were used to clarify responses. The interviews were audio-recorded with participant permission, and the researcher, who also took notes during each interview, later transcribed them. At the end of each interview, the researcher addressed any concerns or questions the participant raised.

The researcher transmitted the audio-recorded interviews to a password-protected computer, manually transcribed them, and sent each transcript to the respective participant to check whether the transcribed information reflected what they had shared. To safeguard participant rights and privacy, identities were protected using pseudonyms, and the recordings and completed questionnaires were assigned identification numbers.

3.9 Trustworthiness

For qualitative research approaches, trustworthiness replaces the commonly used quantitative traits of validity and reliability (Nowell et al., 2017). Four aspects of qualitative research determine trustworthiness: credibility, transferability, dependability, and confirmability.

Credibility

Credibility in qualitative research is the alternative to the internal validity commonly used in quantitative studies (Flynn & Korcuska, 2018). The researcher in this study enhanced the credibility of the findings and conclusions by adopting member-checking, whereby participants review their interview transcripts to ensure that the transcribed information accurately represents their responses. The researcher also solicited the perspectives and guidance of experts in developing the data-collection material, ensuring that the data and subsequent findings addressed their intended purpose(s). During the interviews, the researcher used follow-up questions to ensure that the findings enhanced responsiveness to the research question. Researcher notetaking and audio-recording improved the data quality.

Transferability

Transferability describes how well the study findings could apply to other contexts (Sinclair et al., 2018) and, therefore, is a qualitative alternative to the external validity criterion that quantitative researchers use. To enhance the transferability of this study, the researcher described the procedure for obtaining the findings, informed by discussing data sources and steps used to collect and analyze the data. The researcher kept a record of interactions with interviewees, using brackets to distinguish her opinions from their views.

Dependability

Dependability relates to consistency in the adopted qualitative methodologies, the plausible alternative to quantitative reliability (Nowell et al., 2017). The researcher maintained consistency by using a prepared guide as the basis for all participant interviews and conducting all interviews herself, eliminating potential variations among different interviewers. Ensuring that all participants received questionnaires containing identical items enhanced dependability.

Confirmability

Confirmability regards whether the collected data supports the conclusions of a qualitative study (Nowell et al., 2017). In this study, the researcher used audit trails to demonstrate that the findings and conclusions emerged from information that participants shared. She created descriptions of the coding process, the coding outcomes, and how she used the codes that emerged from participants' views to develop the themes. The researcher also identified personal subjectivity with bracketing and provided participant quotes.

3.10 Data Analysis

The researcher analyzed the data using descriptive statistics, including the mean, standard deviation, frequencies, and percentages. Numerical values were assigned to responses to facilitate analysis. The coded data were then transferred to Excel, used to conduct descriptive tests. The data analysis used the approach that Braun et al. (2017) recommend. They state that thematic analysis provides a stepwise approach to answering research questions using participants' views, ensuring the derivation of answers to the research questions from participants.

In the first step of the analysis, the researcher familiarized herself with the transcripts, after which she developed coding. Transcripts were read with the aim of identifying information relevant to the research questions. Such information was assigned individual codes (i.e., words or phrases that classified the relevant information). Codes were categorized, grouping those that conveyed closely related information. The categories were further aggregated to form themes, larger groups describing similar information. Appropriate subthemes were assigned, and the emergent themes and subthemes were used to report the findings (see chapter iv).

3.11 Research Design Limitations

Interpreting this study's findings requires considering various limitations. One relates to the use of self-reported data from both the questionnaire and interviews. The participants had to recall their experiences and understandings of approaches used for strategy implementation, subjecting the conclusions of the study to possible recall influence or inaccuracies. Reporting bias could have occurred if managers knowingly provided inaccurate information, due to personal feelings or perceptions. Another limitation arises from the recruitment of participants from only one MNC. Data collection from managers in a single organization calls into question the generalizability of conclusions to other organizations, especially as those with subsidiaries in different markets could experience variable challenges in strategy implementation that require unique approaches. The researcher as sole coder constitutes the limitation of forgoing inter-rater reliability.

3.12 Ethical Considerations

The researcher observed ethical considerations to ensure study credibility. She ensured that all participants signed the consent forms before commencing the interviews, vital to promoting ethical research as it confirms that participants know their rights, possible safety concerns, and the procedures associated with their involvement (Musmade et al., 2013).

Guaranteeing participant confidentiality also was part of the ethical considerations. Participants were assigned a unique code for reference throughout the study, and the data were stored in a password-protected laptop that only the researcher accessed. The notebook and digital audio recorder used in interviews were kept in a locked cabinet for access by the researcher, with data to be destroyed seven years after completing the study. Other measures included confirming participants' understanding and reviewing their right to withdraw.

3.13 Summary

This chapter explains the collection and analysis of the data related to the approaches used in SAP SE strategy implementation and describes the appropriateness of a qualitative descriptive research design and the role of the researcher. The chapter also identifies the population, sample, and approach used to recruit and obtain information from participants. The chapter descriptions include the questionnaire and the SurveyMonkey data-collection approach, the semistructured interviews and interview guide, and the approach to processing and analyzing the collected data. Adherence to ethical research standards is evident in recruitment, sampling, data collection, processing, and analysis procedures. This chapter also identifies limitations of the study design and the steps taken to ensure the trustworthiness of the findings.

Chapter IV: Results

4.1 Introduction

This chapter first describes participant demographics, then the factors informing the data collection and analysis, with emphasis on the semistructured interview outcome. The next section presents the results, and the chapter concludes with a summary of the findings.

4.2 Demographic Data

A total of 58 participants participated in the interviews (n = 7) and questionnaires (n = 58). As Table 2 shows, most were between 51 and 60 years old (n = 26; 44.8%), with 25 aged 41–50 years (43.1%), and seven between 31 and 40 (12.1%). No participants were aged above 61 or below 31. Most participants were male (65.5%), with 34.5% female.

Forty-four participants (75.9%), had spent over 24 months in their current managerial position. Those who had spent between 18 and 24 months (n = 3), 12 and 18 months (n = 3), and 1 and 6 months (n = 3), respectively, in their roles accounted for 5.2% of participants in each segment. Four participants (6.9%) had spent less than one month in their position, and one had spent between 6 and 12 months. Twenty-eight participants (48.3%) had a master's degree, 25 (43.1%) had a bachelor's degree, 3.4% held a doctorate; the remaining 5.2% possessed some college qualification other than a degree.

Table 2
Description of participants in the interviews and questionnaires (N = 58)

		Frequency	**Percentage**
Age (Years)	21-30	0	0.0%
	31-40	7	12.1%
	41-50	25	43.1%
	51-60	26	44.8%
	Above 60	0	0.0%
Gender	Male	38	65.5%

	Female	20	34.5%
Experience (months)	Less than 1	4	6.9%
	1-6	3	5.2%
	6-12	1	1.7%
	12-18	3	5.2%
	18-24	3	5.2%
	Above 24	44	75.9%
Education level	Doctorate	2	3.4%
	Master’s	28	48.3%
	Bachelor’s	25	43.1%
	Some college; no degree	3	5.2%

Twenty-one participants worked in SAP SE’s head office, and the rest worked in other branches. Among the latter, three were in Germany. The countries represented included the United States, India, Brazil, Singapore, Latin America, the Netherlands, Ireland, and Austria. The participants occupied various positions in the organization, including the entity president, chief executive officer, and chief financial officer. Other position titles included branch chief operating officer (n = 2), general manager (n = 5), managing director (n = 11), executive vice president (n = 13), and vice president (n = 24). The participants also worked in various focus areas, including sales (n = 19), finance (n = 6), Product & Innovation, Product & Innovation/P&I (n = 5), services (n = 15), marketing (n = 4), and human resources (n = 2).

Table 3 further describes the interview participants. Among the seven interviewees, two are female (P2 and P4), and the remainder male. All except one (P4) worked in branches outside of Germany. Four held the position of vice president (P1, P2, P4, and P7), two (P5 and P6) held the role of executive vice president, and one served as a managing director (P3). Two participants focused on the area of services (P6, and P7); others focused on people (P2), P&I or Product and Innovation (P1), strategy (P4), sales (P3), and marketing (P5). Four interview participants had master's degrees (P1, P2, P4, and P5), two had bachelor's degrees (P6 and P7), and one had a college qualification other than a degree (P3).

Table 3

Description of the participants who participated in the interviews (n = 7)

	Gender	Country	Position	Area of Focus	Education Level
P1	Male	Outside Germany	Vice President	P&I	Master's degree
P2	Female	Outside Germany	Vice President	People Connect	Master's degree
P3	Male	Outside Germany	Managing Director	Sales	Some college; no degree
P4	Female	Germany	Vice President	Strategy	Master's degree
P5	Male	Outside Germany	Executive Vice President	Marketing	Master's degree
P6	Male	Outside Germany	Executive Vice President	Services	Bachelor's degree
P7	Male	Outside Germany	Vice President	Services	Bachelor's degree

4.3 Qualitative Data Analysis

Coding the transcripts took a hybrid approach of both inductive and deductive coding. The inductive coding process progressed from specific to general, to allow for the identification of emergent themes based on the anchor codes. The line-by-line coding of the seven participant transcripts identified 291 phrases, and seven codes were assigned: the dominant approach, demographics, challenges, measuring success, secondary implementation approach, implementation effectiveness, and benefits. These codes were further aggregated into themes relevant to answering the research questions. The four themes included: dominant approach, combined approach, challenges, and effectiveness. The findings in Table 4 summarize the extracted phrases and codes, described further in the results section.

Table 4

Summary of the qualitative analysis outcomes

Theme	Subtheme	Quotes	Source
Dominant approach	Collaborative approach	dominant model that will be collaborative	P1
		Well, certainly the collaborative approach	P1
		I think collaborative style	P2
		most frequently, I have seen a collaborative one	P4

		I think we have a very collaborative culture, and I think that collaborative management is also on-trend in the business world.	P7
	Commander approach	commander model now that we are being given how much money that we have to spend, albeit salaries, marketing and so forth	P5
Combined approach		secondary models I would say are change and cultural	P1
		a combination of change and collaborative	P2
		combination of change and collaborative	P4
		a use of the commander model and the collaborative model.	P5
		then some of the tactics that we have used to accomplish that would be, you know, getting into the collaborative approach of trying to identify how best to drive change within the organization and then, of course, that change model is going to be the thing that we use to say, “Okay, here is how we are going to inspire people to make a difference in the organization.” So again, I think if you look at a large thing that needs to get done, you have got to break it up into pieces and take a collective approach to solving that problem.	P6
Challenges	Balancing between cloud and services	I think the same challenges that have always been there, but as we—you know, two things are kind of driving a higher degree of sensitivity, you might say, to the challenges. One is—you know, and I agree with it, but our firm need to really grow cloud revenue versus services revenue	P1
	Slow decision-making	collaborative world, there is so much goodness in that, but is also can take more time	P2
	Dominant	it does not necessarily mean you are always moving in the right direction	
	Organization-related	challenging the bigger the organization	P2
		but the greater challenge I feel is the people that are impatient	P3
		The bigger SAP one is really complicated… to get all the way down to the people who are actually going to impact and follow through is one of the most difficult things that we have to accomplish	P6
	Limited resources	the conflict for SAP is they want to go through a transformation, but the transformation is largely owned by the people that are responsible for the delivering the day-to-day business, and the size of the task to deliver the day-to-day business is	

	not insignificant, and there is a consequence, there is insufficient capacity or capability to build, design and execute a strategy	
Employees don't always understand how strategy impacts their daily activities	But I am surprised at how many people are saying I understand it, but what am I supposed to do differently? [laughter] If you understand it, then you should be able to figure out what to do differently	P4
The commander approach does not allow for trade-off to happen between LOBs	that it is not allowing for the trade off to happen between the LOBs and so forth	P5
Challenges of collaboration between the board areas due to huge differences	it is difficult to drive collaboration across those three, because they are viewing their slice of the world	P5
Building consensus, easy to get stuck down the road	stuck sometimes and it is easy to start implementing a strategy, but it is really hard to finish, and so you can build a lot of consensus	
The leader is not fully in control of the outcome	it is hard for me to sort of not be in control	

4.4 Results

This section presents findings regarding how participants rated the strategy implementation at SAP SE, focusing on potential influences of demographic variables. The second part addresses the effectiveness of strategy-implementation approaches and includes the findings from the interview and questionnaire data analyses. This section also reviews the findings concerning challenges associated with strategy implementation at SAP SE.

The findings from the questionnaire provide insight into how participants rated SAP SE strategy implementation. This section reviews the outcome of the analysis and the effectiveness of SAP strategy implementation in improving financial performance. The description focuses on the rating and its variations across participants of differing demographics (gender, age, education level, and number of months in the current position).

Frequency analysis was used to assess the ratings of various strategy-implementation methods. The researcher used percentages to determine participant views regarding implementation effectiveness. The results from 52 participants appear in Table 5. The responses comprise two groups: effective, including the cumulative percentages for “extremely effective”, “very effective” and “somewhat effective,” and ineffective, including the cumulative percentages for “not so effective” and “not at all effective.” Table 5 shows most participants (84.6%) rating SAP SE strategy implementation as effective, with 14.4% rating it as ineffective.

Table 5
Rating of the implementation of the strategy at SAP SE (n = 52)

Response	Frequency	Percentage
Very effective	21	40.4%
Somewhat effective	23	44.2%
Not so effective	7	13.5%
Not at all effective	1	1.9%

Assessing the effectiveness of SAP SE’s strategy implementation further involved the relationships between effectiveness and the demographic variables. The analysis was conducted using chi-square tests of association. A *p*-value of 0.05 was used to determine what outcomes were statistically significant.

The findings presented in Table 6 indicate that a higher percentage of male participants (85.3%, n = 29) considered the organization’s strategy implementation to be effective, compared to female participants (83.3%, n = 15); however, the chi-square findings were not statistically significant ($\chi = 0.76$, $p = 0.944$). Likewise, a higher percentage of participants aged 31 to 40 (100%, n = 5) rated the strategy implementation as effective, compared to participants between 41 and 50 (95.8%, n = 23) and 51 and 60 (69.6%, n = 16). Nevertheless, chi-square analysis showed no statistically significant relationship between a participant's age and their rating of strategy-implementation effectiveness (χ = 11.56, p = 0.172). Table 6 also demonstrates the variances in the rating of effectiveness based on participant education level. Participants with bachelor's degrees rated the implementation as effective in the greatest proportions (90%, n = 18), followed by participants with a master's degree (88.9%, n = 24), a doctorate (50.0%, n =1), and those who attended college but held no degree (33.3%, n = 1). The chi-square analysis showed no statistically significant association between education level and rating of effectiveness (χ = 19.151, p = 0.085). Finally, Table 6 demonstrates that while all other participants rated the implementation of strategy at SAP to be effective, only 80% of those with over 24 months of experience in their current position rated it so. The chi-square analysis showed no statistically significant difference between participant experience in their position and effectiveness rating (χ = 10.609, p = 0.956).

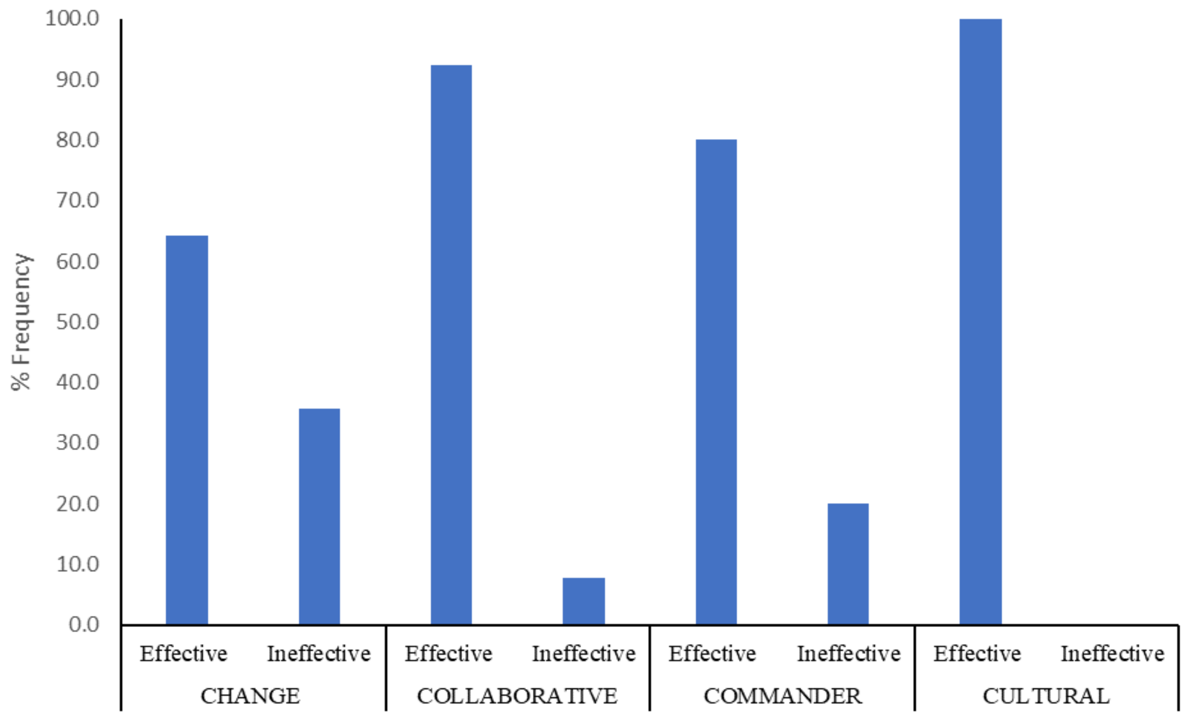
Table 6
The association between demographic variables (age, gender, education level, and experience) and rating of the effectiveness of SAP SE strategy implementation

		Ineffective		Effective		Chi-square	*p*-value
		Frequency	%	Frequency	%		
Gender	Female	3	16.7%	15	83.3%	0.76	0.944
	Male	5	14.7%	29	85.3%		
Age	31–40	0	0.0%	5	100%	11.56	0.172
	41–50	1	4.2%	23	95.8%		
	51–60	7	30.4%	16	69.6%		
Education level	Bachelor	2	10.0%	18	90.0%	19.151	0.085
	PhD	1	50.0%	1	50.0%		
	Masters	3	11.1%	24	88.9%		
	College	2	66.7%	1	33.3%		
Experience in current role (in months)	Less than 1	0	0.0%	3	100%	10.609	0.956
	1-6	0	0.0%	3	100%		
	6-12	0	0.0%	1	100%		
	12-18	0	0.0%	3	100%		
	18-24	0	0.0%	2	100%		
	Above 24	8	20.0%	32	80.0%		

As Figure 1 indicates, the findings regarding the selection of strategy-implementation approaches reflect variation in the rating of effectiveness across participants who chose different options. All participants who consider the cultural approach most appropriate for strategy implementation rated SAP's strategy implementation as effective, compared to 92.3% of participants who chose the collaborative approach, 80% of those who chose the commander approach, and 64.3% of those who chose organizational change. Further analysis of views on the effectiveness of strategy implementation based on the individual implementation approach appears in subsequent sections.

Figure 1

Ratings of the effectiveness of strategy implementation based on the choice of implementation approach



This study also assessed how participants rated the effectiveness of strategy implementation in improving financial performance. The frequency analysis in Table 7 divides the responses into five groups that can be summarized as effective and ineffective.

The effective group includes the cumulative percentage for the responses “extremely effective,” “very effective,” and “somewhat effective,” and the ineffective group includes the cumulative percentages for the responses “not so effective” and “not at all effective.” That means that 89.8% of participants considered SAP’s strategy implementation to be effective in improving financial performance, and only 10.2% considered it to be ineffective.

Table 7
The effectiveness of SAP’s strategy implementation in improving financial performance

Group	Response	Frequency	Percentage
Effective	Extremely effective	3	6.1%
Effective	Very effective	20	40.8%
Effective	Somewhat effective	21	42.9%
Ineffective	Not so effective	4	8.2%
Ineffective	Not at all effective	1	2.0%

Ratings of the effectiveness of strategy implementation in improving the organization’s financial performance were also assessed in association with the demographic variables of gender, age, education level, and experience. The analysis was conducted using chi-square tests of association. A *p*-value of 0.05 was used to determine what outcomes were statistically significant.

The findings in Table 8 indicate that a higher percentage of male participants (93.5%, n = 29) than female participants (83.3%, n = 15) considered strategy implementation effective in improving the organization’s financial performance; however, the chi-square findings were not statistically significant (χ = 4.965, p = 0.42). In assessing the association between age and the rating of effectiveness in improving financial performance, all participants aged 31 to 40 (100%, n = 5) rated the strategy implementation effective, compared to participants aged 41 to 50 (95.7%, n = 22) and 51 to 60 years old (81.0%, n = 17). The chi-square analysis indicated no statistically significant relationship between the age of a participant and his or her rating of the effectiveness of strategy implementation in improving the organization's financial performance ($\chi = 8.886$, $p = 0.543$).

The findings in Table 8 also demonstrate variance in this rating based on participant education levels, with the highest percentage reporting "effective" among those who attended college but held no degree (100%, n = 3) and the lowest among those who held doctoral degrees (50%, n = 1). The chi-square analysis showed no statistically significant association between education level and the rating of the effectiveness of strategy implementation in improving financial performance ($\chi = 13.032$, $p = 0.6$). Finally, participants in different categories of experience level in their position appear in Table 8 to all rate the strategy implementation effective in improving financial performance, except for those with experience between 1 and 6 months (66.7%) and those with more than 24 months of experience (89.5%) in their current position. The chi-square analysis indicated no statistically significant difference between participant experience in their position and rating of the effectiveness of strategy implementation in improving financial performance ($\chi = 23.564$, $p = 0.545$).

Table 8

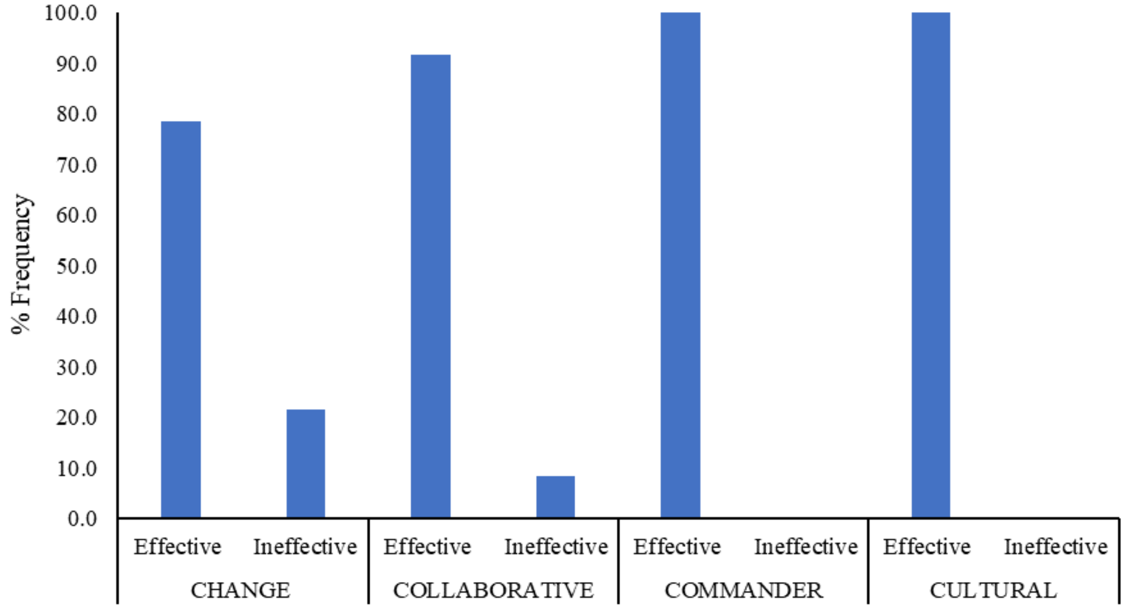
The association between demographic variables (age, gender, education level, and experience) and the effectiveness of SAP's strategy implementation in improving financial performance

		Effective		Ineffective		Chi-square	*p*-value
		Frequency	%	Frequency	%		
Gender	Female	15	83.3%	3	16.7%	4.965	0.42
	Male	29	93.5%	2	6.5%		
Age	31–40	5	100%	0	0.0	8.886	0.543
	41–50	22	95.7%	1	4.3%		
	51–60	17	81.0%	4	19.0%		
Education level	Bachelor	19	95.0%	1	5.0%	13.032	0.6
	PhD	1	50.0%	1	50.0%		
	Masters	21	87.5%	3	12.5%		

	College	3	100%	0	0.0		
Experience in current role (in months)	Less than 1	2	100%	0	0.0	23.564	0.545
	1-6	2	66.7%	1	33.3%		
	6-12	1	100%	0	0.0		
	12-18	3	100%	0	0.0		
	18-24	2	100%	0	0.0		
	Above 24	34	89.5%	4	10.5%		

The findings in Figure 2 demonstrate that the ratings of the effectiveness of strategy implementation in improving the organization’s financial performance varied across participants who chose different strategy-implementation approaches. As indicated, the participants who selected the cultural and commander approaches wholly rated the strategy implementation to be effective in this regard, compared with 91.7% of those who chose the collaborative approach and 78.6% of those who chose the organizational-change approach.

Figure 2
Effectiveness of strategy implementation in improving the financial performance of the organization across participants who chose different dominant implementation approaches



4.5 Findings for Research Question 1

Responses to the question regarding the SAP's strategic-implementation approach came from 52 of the 58 participants. Analysis of the findings showed that SAP uses all four approaches (organizational-change, commander, collaborative, and cultural approaches). As Table 9 shows, 50% of participants (n = 26) considered the approach implemented in their organization to be the collaborative approach, and only 9.6% of participants (n = 5) identified the commander approach. The organizational-change approach was identified by 26.9% (n =14) of participants and the cultural approach by 13.5% (n = 7). No participant selected the crescive approach (n=0).

Table 9
Identified approaches for strategy implementation at SAP SE

Approach	Frequency	Percentage
Change Approach	14	26.9%
Commander Approach	5	9.6%
Collaborative Approach	26	50.0%
Cultural Approach	7	13.5%
	52	100%

4.6 Findings for Research Question 2

This section describes the findings regarding each identified implementation approach, including the outcome of data analysis, focusing on participants who identified that approach as the dominant one used by SAP. The views interviewees shared regarding the approach's effectiveness are documented as well. Subsequently, the quantitative data analysis of the approach's effectiveness of the approach is presented.

Interview responses revealed only two participants (P5 and P6) identifying the commander approach as dominant. P5 noted that this is due to its use in budgeting and that it shapes strategic direction by controlling funds. P5 also mentioned that the board uses the commander approach to determine the money to be spent and to set targets:

> At the end of the day, the one with the most power is the one that owns the purse strings, and so on, commander model now that we are being given how much money that we have to spend . . . commander model being driven by SAP Board… dictated by how funding is distributed to each component of the businesses… It is more, “Here is your budget,” you know, “Here is your growth targets,” then you go figure it out.

P6 also identified the commander approach as dominant, particularly in instances of decision-making that require someone to be accountable. According to the participant, those decisions involving significant changes require a commander approach, wherein an individual identifies the strategy and provides the direction and process to achieve it. P6 stated:

> Commander has been frequent being right, so when we have had to make big pivots or accept large amounts of change, you need to have somebody who is absolutely saying, “Okay, this is the strategy; here is how we are going to get here; here is how you need to adhere to the process.”

P5 suggested that the commander approach is not an effective method for ensuring successful strategy implementation, noting that employees are not properly guided in how to execute board decisions. As mentioned, the participant remarked that decisions are made, and employees must then “go figure it out.” The commander approach was also called ineffective due to the decisions, made at a high level, that did not provide avenues for direct feedback or participation in decision-making. P2 observed that although the commander approach may be dominant in decision-making, such decisions are not always in the right direction. All the same, based on the statements of P6, “The commander approach is going to be the thing that is going to probably maximize that accountability.” This view, regarding the importance of the commander approach in enhancing accountability, is shared by P5, who said:

> Decisions … that are being made from too high of a level… that it is not allowing for the trade-off to happen between the LOBs and so forth… I manage my business, may not naturally map to a commander organization strategy model.

Five participants rated the effectiveness of the commander approach in SAP SE strategic implementation. The frequency analysis shown in Table 10 divides the responses into two groups, effective and ineffective. The effective group includes the cumulative percentages of “extremely effective,” “very effective” and “somewhat effective” while the ineffective group includes the percentage for “not so effective.” Table 10 indicates that 80.0% (n = 4) of participants considered the commander approach effective for SAP SE strategy implementation, and 20% (n = 1) rated it ineffective.

Table 10
Effectiveness of the commander approach for strategy implementation at SAP SE

Group	Response	frequency	%
Effective	Extremely effective	0	0.00%
Effective	Somewhat effective	3	60.0%
Effective	Very effective	1	20.00%
Ineffective	Not so effective	1	20.0%

4.7 Findings for Research Question 3

The analysis of the interview responses revealed that no participants identified the organizational-change approach as the dominant method used at SAP SE. Instead, they indicated that this approach was used alongside others. While no interviewed participants provided responses concerning the effectiveness of the organizational-change approach, the survey data did offer insight into its perceived effectiveness for strategy implementation.

Fourteen survey participants rated the effectiveness of the organizational-change approach. The frequency analysis in Table 11 divides the responses into two groups, effective and ineffective. The effective group includes the cumulative percentages of “extremely effective,” “very effective” and “somewhat effective,” and the ineffective group includes the percentage for “not so effective.” Table 11 indicates that 78.6% (n = 11) of the participants who gave a rating on the organizational-change approach considered it effective for strategy implementation at SAP SE, and 21.4% (n = 3) rated it ineffective.

Table 11
Effectiveness of the organizational-change approach in strategy implementation at SAP SE

Group	Response	N	%
Effective	Extremely effective	0	0%
Effective	Somewhat effective	6	42.9%
Effective	Very effective	5	35.7%
Ineffective	Not so effective	3	21.4%

4.8 Findings for Research Question 4

Analysis of the responses from the seven interview participants indicated that three (P1, P4, P7) regarded the collaborative approach as the most frequently used in SAP SE strategy implementation. P1 noted that the most dominant method of strategy implementation is “certainly the collaborative approach,” stating that it suited the nature of the work and that their very function is to add services that complement the core product, implying a requirement to engage with others. P7 indicated that he adopts a collaborative approach in his department to build a management team and incorporate diverse views. P4 reported that a collaborative approach is frequently used, observing that the senior leadership and strategy teams collaborate on action items. Concerning dominant approaches, P1 stated:

> There is definitely [a] dominant model that leaders must gravitate towards and have an opinion towards, that dominant model that will be collaborative… but I definitely can see a need for incorporating a little bit of all of them. But my secondary models, I would say, are change and cultural, with collaborative being the dominant one.

P7 likewise noted:

> I think we have a very collaborative culture, and I think that collaborative management is also on-trend in the business world, and so it is really important to build up your management team and be able to get diverse views from everybody and have them share their background and their input—and to your point which you said earlier, it is very valuable that they already bought in. And so I see that work very well in our organization and I think it is important.

P4 additionally stated:

> I have seen—most frequently, I have seen a collaborative one which was, you know, strategy team does the research, but it is really brought to and agreed with the senior leadership team, and that leadership team is then responsible for the execution.

P2 also suggested that SAP SE strategy implementation is dominated by a collaborative approach; however, P2 acknowledged that historically, the commander approach was dominant, suggesting that the collaborative approach is viewed as replacing the commander approach. The reason P2 gave for this shift in tactics regards the need to involve others in decision-making and to reduce the weight and pressure on an individual:

> I feel that we historically were a little bit more of a commander. Everybody would look to [name withheld], you know, make that decision and then people will go and execute… when [name withheld] stepped into role …she, I believe, was instrumental in catapulting us into a shift… moving from this commander… she was more of the opinion of “I want you to own your area and go figure it out; you are smart people; not everything should be coming up to me as the ultimate, you know, decision-maker.”

On effectiveness, P7 noted that the collaborative approach benefits micro-strategy (small improvements) and helps in achieving consensus, to better influence and coach others:

> A micro-strategy—we do not need a huge strategy revamp. We can say, "Hey everybody, how do you go fifteen percent faster?" or "How do you become five percent more profitable?" That is a good assignment for the team to figure out.

According to P1, the collaborative approach provides the ability to engage with others when adding value to a pre-existing service:

> Because in manage business services we are, you know, the name kind of implies where add-on service functionality, if you will, or add-on services that complement the core product.

A collaborative approach was also associated with inclusiveness and responsibility-sharing. P4 mentioned that adopting a collaborative approach enhanced responsibility-sharing and ensured no CEO held sole responsibility for company activity. P4 also observed that an effective communication strategy is important for effective strategy implementation. The organization adopts different approaches to communication, P4 said, aimed at ensuring employee understanding of how the strategic change in question influences their jobs and what they must do differently. P3 named the collaborative approach as dominant at SAP SE, observing that using a collaborative approach has advantages, including garnering input from different people. P3 also noted that a collaborative approach enhances inclusiveness, empowers employees by giving them an opportunity to speak, and capitalizes on employee willingness to provide feedback. Finally, according to P2, adopting a collaborative approach benefits both the leaders and the implementation process. P2 reported that the collaborative approach empowers leaders while making the implementation process more creative by inviting diverse perspectives.

P3 stated:

> There is a certain psychology that gives employees safety… people are not afraid of making mistakes and giving feedback… you get a more inclusive approach to

strategy… harness the thoughts of five-hundred people to drive that strategy… giving people the opportunity to speak up.

P2 also said:

> I believe that we have—it has been really great to see that, like a deeper batch. As a result of this evolution, we have been able to create a deeper batch, more empowered leaders, more creative thought process, more diverse perspective[s] being heard.

Twenty-six survey participants rated the effectiveness of the collaborative approach in SAP SE strategy implementation. The frequency analysis in Table 12 divides the responses into two groups, effective and ineffective. The effective group includes the cumulative percentages of "extremely effective," "very effective," and "somewhat effective," and the ineffective group includes the percentage for "not so effective." Table 12 indicates that 92.3% (n = 24) of those answering this question considered the collaborative approach effective for SAP SE strategy implementation, and 7.7% (n = 2) rated it ineffective.

Table 12
Effectiveness of the collaborative approach for strategy implementation at SAP SE

Group	Response	n	%
Effective	Extremely effective	1	3.80%
Effective	Somewhat effective	5	19.20%
Effective	Very effective	16	61.50%
Ineffective	Not so effective	2	7.70%

4.9 Findings for Research Question 5

Analysis of the data from the interview responses revealed no participants identifying a cultural approach as the dominant one at SAP SE. However, the shared opinion was that this approach is used alongside others. While no participants provided responses concerning the effectiveness of the cultural approach, the responses to the questionnaires provide insight into participant perception of its effectiveness in strategy implementation.

Seven participants rated the effectiveness of the cultural approach in SAP SE strategy implementation. The frequency analysis in Table 13 divides the responses into two groups, effective and ineffective. The effective group includes the cumulative percentages of "extremely effective," "very effective," and "somewhat effective," and the ineffective group includes the percentage for "not so effective." As Table 13 shows, 100% (n = 6) of the participants who rated the cultural approach considered it effective in strategy implementation at SAP SE. No participants rated it as ineffective.

Table 13
Effectiveness of the cultural approach for strategy implementation at SAP SE

Group	Response	n	%
Effective	Extremely effective	1	14.30%
Effective	Somewhat effective	2	28.60%
Effective	Very effective	3	42.90%
Ineffective	Not so effective	0	0.00%

4.10 Use of Multiple Approaches

The findings ultimately indicate no single approach is uniformly applied at SAP SE for strategy implementation. According to the participants, the organization adopts different approaches to accomplish various goals. This section describes the views related to the use of multiple approaches in strategy implementation and documents their perceived effectiveness.

Use of collaborative and organizational-change approaches: Although P7 indicated primarily using the collaborative approach in his department, the researcher noted that various methods can be adopted based on strategy implementation needs and timeframe.

The researcher noted that the change model is used to drive strategy to ensure that the changes “pivot to outcomes” and “customer success.” P7 stated:

> I have probably in the past have at times gone with more of a commander strategy or a change strategy where I come up with the vision of what I think we need to do, and I am constantly selling it to the team and trying to figure out how we implement it.

Use of collaborative, organizational-change, and cultural approaches: According to P1, although the collaborative approach is dominant, the organizational-change and cultural approaches are also used in SAP SE strategy implementation. P4 noted that the collaborative, cultural, and change approaches are used as well, similarly observing that the collaborative approach is used more frequently. According to this participant, the change approach is less frequently used and especially adopted in small-group settings. P4 also reported that small teams adopt a cultural approach. P2 similarly suggested that a combination of approaches is used to accomplish strategy implementation at SAP, again naming the collaborative approach as dominant but mentioning the use of the change and cultural approaches:

> I think that we have moved from that commander to more of a combination of change and collaborative. I look at this piece around cultural, and I would say that that is something that is deeply rooted within what my team has been focused on… How do we implement that organizationally from a cultural adoption? And so, I think that my team has really been looking to use that cultural component, pulling that into the collaborative approach that helps us implement that change.

P1 stated:

> Secondary models, I would say, are change and cultural.

According to P4:

> I have seen less frequently—and maybe in smaller groups—I have seen the change… Small teams I have seen try to do culture.

Use of commander and collaborative strategies: By the same token, the views P5 and P6 shared suggest that the organization combines approaches to strategy implementation. According to P5, the organization uses a combination of commander and collaborative strategies, while P6 remarked that the organization uses commander, cultural, and collaborative approaches. P6 considered this use of combined approaches highly effective, noting that the board chooses the direction to be taken, based on the commander approach—but participants also reported that the organization adopts a collaborative approach when inspiring personnel to take an active role in driving change within the organization. P6 stated:

> Commander has been frequent… think we have worked to make sure that we get buy-in from everybody, which kind of plays into the cultural model…
> I do think, you know, that that crescive model is out there. We do have—we have supported innovation over the years within businesses and between businesses, so I think some of that is there as well, but that is—we cannot now—we are a big enough company. We cannot take that kind of risk that maybe, that requires… collectively, they are highly effective.

> Some of the tactics that we have used to accomplish that would be… getting into the collaborative approach… we are going to inspire people to make a difference in the organization… and take a collective approach to solving that problem.

Effectiveness of the use of multiple approaches: Evidence from the interviews suggests that the use of combined approaches leads to successful strategy implementation. Based on the views shared by P4, a combination of the organizational change and collaborative approaches was associated with successful strategy implementation. P4 also noted this for adoptions of the cultural and organizational-change approaches, where people embrace and execute the organization's vision. P4 stated:

> Well, certainly I would say that the DBS (Digital Business Services) strategy was successfully executed… now that I think about it, it was a bit of change and collaboration hybrid because there was such a strong centrally-generated strategy.
>
> …started out as a change with a change approach with a very strong view… every time it really became a cultural change where people really embraced that vision, to the point that we could all carry it out in our individual areas—yeah, so I think those are two examples of successful strategy implementations.

P3 remarked that SAP and SAP Concur use different approaches to strategy implementation, observing that the method used depends on the individual and how the strategy impacts him or her. P3 noted that the approach must focus on driving customer value through building the best product or providing the best service. P3 stated:

…SAP and SAP Concur is that culturally they are quite different, and as a consequence, they have different approaches to strategy… I think with many strategies—I think it depends on the individuals and how it is impacting them.

4.11 Comparison of the Effectiveness of the Approaches

This study also evaluated whether the responses regarding the effectiveness of the different approaches for strategy implementation differed significantly. This analysis involved the use of a one-way ANOVA test to calculate the means, based on the scores assigned to the participant-provided responses. "Extremely effective" was assigned a score of 5, "very effective" 4, "somewhat effective" 3, "not so effective" 2, and "not at all effective" 1. As shown in Table 14, all approaches named except "cultural" earned a minimum score of 2. The collaborative and cultural approaches had a maximum score of 5, the organizational-change approach had a maximum score of 4, and the commander approach had a maximum score of 3. Table 14 presents the various means and standard deviations (*sd*) of the approach-effectiveness ratings.

As shown, the cultural approach received a mean score of 3.833 (± 0.753). Based on the values assigned to the responses, this indicates that the cultural approach was, on average, very effective for strategy implementation. The collaborative approach had a mean score of 3.667 (± 0.702), similarly indicating an average rating of being very effective for strategy implementation. The organizational-change approach had a mean of 3.143 (± 0.770), and the commander approach had a mean of 2.750 (± 0.500), both scoring as somewhat effective for strategy implementation.

Table 14
Mean response score for the rating of the selected approach for strategy implementation at SAP

	N	Mean	*Sd*	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Collaborative approach	24	3.667	± 0.702	3.370	3.963	2	5
Commander approach	4	2.750	± 0.500	1.954	3.546	2	3
Organizational-change approach	14	3.143	± 0.770	2.698	3.588	2	4
Cultural approach	6	3.833	± 0.753	3.043	4.623	3	5

The outcome of the ANOVA test appears in Table 15. The findings indicate that the reported difference in mean response scores for the ratings of selected approaches for strategy implementation was statistically significant (F(3, 44) = 3.426, p = 0.025).

Table 15
The ANOVA test outcome

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.286	3	1.762	3.426	0.025
Within Groups	22.631	44	0.514		
Total	27.917	47			

Further analysis was conducted using the least significant difference (LSD). The LSD post-hoc test outcome presented in Table 16 indicates that the collaborative approach was rated significantly very effective for strategy implementation (3.667, ± 0.702) compared to the commander (2.750, ± 0.500, P = 0.022) and organizational-change approaches (3.143, ± 0.770, P = 0.035). There was no statistically significant difference between the ratings of effectiveness for the collaborative and cultural approaches (P = 0.613). Table 16 also indicates that the cultural approach was rated significantly very effective for strategy implementation (3.833, ± 0.753) as compared to the commander approach (2.750, ± 0.500 P = 0.024). No statistically significant difference appeared between the effectiveness ratings for the cultural and organizational-change approaches (P = 0.06).

Table 16
Multiple comparison using LSD

(I) approach	(J) approach	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound

Collaborative	Commander	.91667*	0.38732	0.022	0.1361	1.6973
	Change	.52381*	0.24118	0.035	0.0377	1.0099
	Cultural	-0.16667	0.32734	0.613	-0.8264	0.4931
Commander	Collaborative	-.91667*	0.38732	0.022	-1.6973	-0.1361
	Change	-0.39286	0.4066	0.339	-1.2123	0.4266
	Cultural	-1.08333*	0.46293	0.024	-2.0163	-0.1504
Change	Collaborative	-.52381*	0.24118	0.035	-1.0099	-0.0377
	Commander	0.39286	0.4066	0.339	-0.4266	1.2123
	Cultural	-0.69048	0.34995	0.055	-1.3957	0.0148
Cultural	Collaborative	0.16667	0.32734	0.613	-0.4931	0.8264
	Commander	1.08333*	0.46293	0.024	0.1504	2.0163
	Change	0.69048	0.34995	0.055	-0.0148	1.3957

** The mean difference is significant at the 0.05 level.*

4.12 Challenges Faced by SAP in Strategy Implementation

General challenges: SAP does face certain challenges in strategy implementation, including the setting of priorities. According to P1, balancing cloud and services revenue is one such challenge. The participant indicated that the company must evolve its managed business services to complement the offerings of the cloud. The participant also noted that the company encounters difficulties acquiring sufficient technology to enable improved delivery of services. P1 stated:

> Our firm needs to really grow cloud revenue versus services revenue… so how do we evolve our managed business services to complement that and operate in a way that we can collaborate the growth of cloud and find that balance between whether we sacrifice a little bit of service revenue in favor of cloud revenue?

Ineffective communication resulting in an inadequate understanding of the strategy implementation represents another such challenge. P4 reported a lack of understanding among employees regarding the influence of organizational change on their daily activities. The participant noted that without satisfactory communication, employees fail to fully grasp what changes they must make, due to the implemented strategy. One method of addressing this challenge regards using change agents, which, P4 mentioned, facilitates education concerning the strategy in question and ensures the proper level of communication. Change agents also confirm that the respective departments adopt the strategy. P4 stated:

> But I am surprised at how many people are saying, “I understand it, but what am I supposed to do differently?”… The challenge we have is there are 18,000 people in the organization, and I cannot tell that person specifically how their job should change because I do not know their individual job well enough.
>
> …change management network, and part of their job is going to be we are going to equip them with some facilitation techniques to help people work through those questions, to arrive at the right answers.

Another challenge in strategy implementation regards the ability to effectively measure successes and outcomes. Views that P4 offered indicated difficulty in quantifying and measuring outcomes, especially those concerning culture. P4 noted that some measuring techniques, such as the use of traditional Key Performance Indicators, were ineffective in measuring transformational strategy and new strategic initiatives. P4 stated:

> We definitely have some blank spots, the one that I ended on which is there is some aspects of our culture that we have not actually found a great way to measure yet.

Impatience among the individuals involved in implementation also came up as a challenge. P3 noted that the desire to observe results more quickly than is possible drives people, and such impatience may lead to people losing motivation and faith, due to the slow implementation progress and the long amount of time that achieving results may require. P3 mentioned that identifying short- and long-term objectives could address this, stating:

> The greater challenge I feel is the people that are impatient... they want to see the results once they commence the strategy; they want to see the results quicker than they sometimes materialize... As a consequence, they may lose motivation and faith.

Another challenge in implementation regards limited resources. P3 identified a lack of time and resources as major impediments to the transformation process. According to the participant, the same employees responsible for day-to-day activities execute corporate change, leading to strain. P3 also noted an additional barrier concerning a lack of resources appropriate for the skillsets needed to execute the transformation, stating:

> The conflict for SAP is they want to go through a transformation, but the transformation is largely owned by the people that are responsible for delivering the day-to-day business, and the size of the task to deliver the day-to-day business is not insignificant, and there is a consequence. There is insufficient capacity or capability to build, design, and execute a strategy.

According to P6, process uniformity and the uniqueness of markets and organizations present another difficulty. The participant noted that differences in market maturity pose a challenge to implementation, mentioning the organizational complexity associated with many layers of company hierarchy. P2 also observed that the size of the organization is a complicating factor. The participants observed that some parts of the organization performed better than others, and leaders should take steps to identify and engage talents within the organization. P6 stated:

> The bigger SAP one is really complicated… to get all the way down to the people who are actually going to impact and follow through is one of the most difficult things that we have to accomplish.

> The biggest challenge we have with those strategic initiatives is the balance between uniformity of process and uniqueness of markets, and the organizations that serve them… we have to make adjustments because of the maturity of different markets,

> and if you look at—like your basically, collection of both mature and immature markets.

P2 stated:

> I think that this gets more challenging the bigger the organization is, and this is where I would say in some areas of the organization probably do a better job than other parts of the organization.

Approach-specific challenges: Participants also indicated challenges specific to the collaborative approach, such as the issue of limited control. P7 noted that with a collaborative strategy, the leader is not fully in control of the outcome and cannot always influence it. According to the participant, this is difficult for leaders who must be accountable for the process and the outcome. P7 stated:

> It has been hard… …it is hard for me to sort of not be in control… As you delegate everything, then the team is reading back to you what they are doing or telling you about what they are doing. You might be sitting there thinking, "I am not sure we need to be doing this."

Another challenge associated with the collaborative approach regards the difficulty of implementing radical strategic change. The participants observed that using this approach makes quickly executing bolder moves challenging. P4 observed that this is especially evident when there are multiple goals, leading to some being executed while others go unaddressed. The participant also observed that when using collaborative strategies, keeping pace with a quickly evolving corporate strategy is challenging. P4 stated:

> I think it makes it harder for us to implement radical strategic changes quickly... We did not really shift the business significantly towards the cloud. Now, part of that is reflective of the SAP strategy.

The challenges associated with a lack of collaboration, ineffective communication, and poor engagement in aspects related to strategic implementation are evident in the views the participants shared concerning the commander approach. As P5 noted, this approach is characterized by strategy implementation decisions made by high-level management, while employees at the lower levels of the organization must learn how to achieve the objectives set by the board. P2 mentioned that a difficulty associated with the collaborative approach regards the slow decision-making. The participants noted that the problem of slowness can be addressed by providing clear roles and responsibilities. P2 stated:

> Collaborative world, there is so much goodness in that, but it also can take more time… Sometimes we do not move as fast… we can get spun up.

P7 indicated that the cultural approach is complex, especially in a situation involving departmental and corporate values. The participant noted that corporate strategy “cascades” to the departmental strategies and can be “too much.” P7 stated:

> It really cascades down to us from the executive strategy… We run behaviors, and these core values, then we have our legacy Concur core values, then we have the services principles. It is almost too much.

The commander approach was also mentioned as having challenges regarding inclusivity. The participants indicated that the nature of the commander approach does not allow inclusion in decision-making and opinion-sharing regarding what strategy implementation should considered. The shared views called this lack of inclusivity a problem; an employee may fail to own the implementation approach. According to P5, decision-making “from too high of a level” characterizes the commander model.

4.13 Summary of the Findings

The study's findings presented in this study provide insight into the effectiveness of approaches to strategy implementation in German MNCs in the software industry, using SAP SE as a case study. This chapter describes the findings from questionnaire data and interview responses. Concerning the first research question, which focused on approaches to strategy implementation in German MNCs, the findings indicated the use of four types of approaches: organizational change, commander, collaborative, and cultural. The collaborative approach was the most dominant, with 50% of the participants identifying this approach. The second most dominant was the change approach, followed by the cultural approach and the commander approach.

Regarding effectiveness for strategy implementation, the findings indicate that the cultural and collaborative approaches are effective, and the organizational-change and commander approaches are ineffective. The ANOVA test indicated that the perceived effectiveness of the collaborative approach significantly differed from that of the commander ($P = 0.022$) and organizational approaches ($P = 0.035$). The outcomes also indicated that the cultural approach significantly differed from the commander approach ($P = 0.024$).

Some of the noted challenges in strategy implementation were general; others were specific to certain approaches. The reported general challenges included setting priorities, ineffective communication, effectively measuring success and outcomes, impatience among individuals involved in the implementation process, limited resources, and challenges associated with a lack of process uniformity due to the uniqueness of the markets related to the organization. The challenges unique to the collaborative approach included limited control, difficulty implementing radical changes, and delayed decision-making. Challenges associated with the commander approach included a lack of collaboration, ineffective communication, and a lack of engagement. For the cultural approach, challenges were associated with the complexity of departmental and corporate values.

Based on the findings described in this chapter, the collected data adequately addressed the study's research questions.

Chapter V: Discussion

5.1 Discussion of the Results

This study was conducted to address the knowledge gap regarding strategy implementation in MNCs, based on understanding that MNCs face a turbulent market and implementing a strategy may prove difficult. MNCs play important roles in the international market. Ensuring the effective implementation of strategies through addressing this gap is vital to helping resolve future operational and economic issues.

Five research questions guided the study. The first focused on the various approaches used for strategy implementation in German software MNCs; the second focused on the effectiveness of the commander approach for strategy implementation; the third focused on the effectiveness of the organizational-change approach; the fourth focused on the collaborative approach; the fifth focused on the cultural approach.

The research questions were assessed using qualitative research based on a descriptive research design. Using that approach, the researcher collected primary data from participants—top managers in SAP SE—using structured questionnaires and interviews. A combined total of 58 participants answered the interviews (n = 7) and the questionnaires (n = 58). Analysis of the findings indicates that the collaborative approach is the most dominant, followed in order by the change approach, the cultural approach, and the commander approach. The study also indicates that the cultural and collaborative approaches are effective for strategy implementation, while the organizational-change and commander approaches are ineffective. Concerning effectiveness, the collaborative approach significantly differs from the commander and organizational-change approaches, and the cultural approach significantly differs from the commander approach. This study also identifies challenges faced in strategy implementation, including priority-setting, communication, outcome measurement, addressing, limited resources, and a lack of process uniformity due to the uniqueness of various markets and organizations. The study notes the association of the collaborative approach with such challenges as limited control, difficulty in implementing radical changes, and delayed decision-making; the commander approach with a lack of collaboration, ineffective communication, and lack of engagement; and the cultural approach with complexity in departmental and corporate values.

This chapter discusses the study outcomes, focusing on how they relate to the literature. The aim is to show whether the outcomes support or contradict existing knowledge. When the findings contradict what is known, we explain the possible reasons.

The discussion of the findings is based on each research question. A summary of the findings related to individual research questions appears, followed by exploring the findings based on existing evidence and interpreting the meaning of the evidence.

5.2 Discussion of Research Question 1

Analyzing the demographic factors associated with the participants in this study shows that SAP SE is a multinational software corporation with a presence in various countries. The participants came from the headquarters and branches in Germany, as well as subsidiaries dispersed across different countries. Twenty-one worked in the head office, while the rest worked at branches. Sageder and Feldbauer-Durstmüller (2019) define MNCs as organizations with units/subsidiaries/branches dispersed in foreign countries and headquarters located in the home country. In addition to operations in Germany, SAP SE has branches in countries including the United States, India, Brazil, Singapore, Latin America, the Netherlands, Ireland, Austria, and others. The reported demographics, particularly management in different countries, describe SAP's presence in more than 180 countries (SAP, 2021). Most managers had a master's degree, suggesting the importance of their possessing adequate knowledge and skillsets to ensure managerial competence and effective leadership skills (Boffelli et al., 2020).

Based on the study findings, most participants (84.6%) rate the implementation of strategy in the organization as effective. Notably, financial aspects require consideration during strategy implementation (Rajasekar, 2014; Guruwo et al., 2017), and as the study reports, most participants (89.8%) consider the strategy implementation effective in improving financial performance. These findings suggest that strategy implementation in SAP provides economic value and improves the organization's financial performance. The findings also explain the gradual increase in SAP financial performance (SAP, 2021), which could relate to the effective implementation of the formulated strategies (SAP, 2021).

5.3 Discussion of Research Question 2

Based on the interviews, this study identifies the commander approach as one of the dominant approaches in SAP. The findings also note that the fewest managers identified this approach as optimal for strategy implementation. These findings seemed contradictory before investigation.

This approach's dominance was evident in certain settings and conditions, such as when decision-making requires accountability. This is supported by evidence suggesting that the commander approach is adopted when managers perceive danger to the organization and take responsibility for avoiding it (Lehner, 2004). Farcas et al. (2020) note that managers adopt a commander approach to strategy implementation when the need arises to react to threats and protect the organization's well-being, arguing that the perception of increased threat leads to higher chances of a dominant autocratic approach, the characteristic feature of the commander approach.

In the commander approach, top leaders/managers make strategic decisions while subordinates execute the decisions. This study shows that the commander approach requires subordinates to learn how to execute strategies they had no involvement in formulating. These observations corroborate the conclusions of Maotwanyane (2017), who notes that the commander approach relies on an edict tactic, whereby the manager uses the power of his or her position to direct how to implement a plan. The commander approach thrives on the ability of top managers to control funding, requiring an effective management approach to dictate the strategy-implementation process (Yang et al., 2010). The outcome of this study shows that top managers use the commander approach to distribute funding to business components. The findings corroborate Rajasekar’s (2014) observations that managers who use the commander approach seek to enhance competitive and economic performance.

Among the participants who reported the commander approach as dominant for strategy implementation, 80% expressed the effectiveness of the approach. Although this figure seems high, it corresponds to only 4 of the 58 participants. Those who view the commander approach as effective for strategy implementation highlight accountability as one of its strengths. They stated that the commander approach enables the organization to identify individuals who are accountable for strategy-implementation performance and make key decisions regarding the associated course of action (Farcas et al., 2020). Analyzing the use of the commander approach in small organizations, Farcas et al. (2020) acknowledge that the approach contributes to enhanced accountability and efficient decision-making because the top managers who single-handedly developed the strategy are directly responsible for its implementation. Another observation regards the quick decision-making. Managers noted that, unlike the collaborative approach, the commander approach allows a single individual to make decisions, which avoids spending time building consensus and persuading individuals in the organization to accept the course of action (Lehner, 2004; Farcas et al., 2020).

Those who viewed the commander approach as ineffective claimed that the approach provides insufficient guidance to subordinates regarding the execution of board decisions. Participants referred to the recurring concern over the commander approach as being “left to figure out” what to do. The managers felt that the commander approach does not encourage involvement, and therefore, the decision-makers do not consider their opinions, views, and suggestions concerning the direction that the strategy implementation should take. Previous research also indicates that the failure of the commander approach to involve subordinates in decisions could explain its reported ineffectiveness (Adousi et al., 2018). Evidence indicates that managers at lower levels who are not involved in decision-making tend to lack commitment toward the implementation of strategies that top-level managers formulate and likely become obstacles to implementation (Adousi et al., 2018; Ateş et al., 2020). The reported ineffectiveness of the commander approach could also be associated with using edicts, shown to result in strategy implementation failure due to the lack of stakeholder approval and participation (Čater & Pučko, 2010). The negative effect of the edict tactic represents one reason that the commander approach was regarded as ineffective. The study findings also indicate that managers feel the approach's ineffectiveness stems from high-level decisions that provide no avenues for feedback or participation in decision-making. Drummond-Smith (2018) supports the reported ineffectiveness of the commander approach for strategy implementation, arguing that the associated micromanagement does not offer subordinates the required time and space to conduct their tasks or the freedom to execute various duties within the overall strategy.

5.4 Discussion of Research Question 3

Compared to the commander and cultural approaches, the organizational-change approach had a higher number of participants who confirmed that the company uses it and who rated it as ineffective. Despite the high proportion of participants identifying the change approach as used and effective (78.6%), this percentage only amounts to 11 of the 58 participants. The outcome also indicates that along with the commander approach, few managers identified the change approach as one SAP uses in strategy implementation. Based on the outcome, the change approach is not a dominant approach in the company. However, it was noted as used alongside others.

This study provides unimpressive evidence regarding the effectiveness of the change approach for strategy implementation, perhaps because of its nature as an autocratic approach, in which participation of managers and other employees at lower levels is limited to selecting from alternatives (Guruwo et al., 2017). Evidence indicates that the change model resembles the commander approach's employment of edicts, thus, associated with ineffective strategy implementation due to the lack of input or feedback from all stakeholders (Baroto et al., 2014). The low rate of adoption of the change approach could also reflect the fact that participation is not based on subordinates' perception of the quality of the choice but, rather, driven by acceptance. As Guruwo et al. (2017) caution, regulatory changes are associated with resistance that must be addressed for the plan to succeed.

5.5 Discussion of Research Question 4

Based on the outcome of this study, the collaborative approach is the dominant approach that SAP SE uses for strategy implementation. Compared to the commander and organizational-change approaches, a higher number of managers (24) considered the collaborative approach effective. The dominance of the collaborative approach is evident in the implementation requiring engagement with subordinates and the execution of teamwork and collective action. A main feature of the collaborative approach that emerges from this study is the need for engagement of senior leadership with strategy teams. The findings show that consideration of the views of all stakeholders and the need for the course of action to represent the sum of input from various individuals characterize the collaborative approach. The evidence of the preference for the collaborative over other approaches emanates from the involvement and engagement of subordinates in the implementation process.

These observations corroborate previous research (Chimhanzi, 2004; Li et al., 2008; Gulbrandsen, 2019). Guruwo et al. (2017) show that a collaborative approach to strategy implementation has a participative nature that aids in successful strategy implementation. Also, the collaborative approach focuses on enhancing vertical communication, critical to achieving strategy consensus and enhancing strategy-implementation effectiveness (Shimizu, 2017; Gulbrandsen, 2019). Previous researchers argue that the effectiveness of the approach used for strategy implementation is a function of the relationships between organizational stakeholders (Chimhanzi, 2004; Li et al., 2008). The views that study participants shared accordingly suggest a preference for the collaborative approach over the commander approach, due to the increased need for subordinates' involvement in decision-making. According to the participants, adopting a collaborative approach helps reduce the managerial pressure of assuming sole responsibility and accountability for strategy implementation that occurs using the commander approach.

Although the collaborative approach was considered dominant in strategy implementation at SAP SE, the results show that the approach benefits microstrategy requiring small improvements. These observations support the assertions of Maotwanyane (2017) that a collaborative approach to strategy implementation is effective for organizations that operate within one jurisdiction, but not for international corporations. This is likely due to its requirements for consensus-building and influencing, which could be time-consuming in the context of major improvements. As Lehner (2004) notes, the need to seek consensus in the collaborative approach can lead to wasted time and a slower decision-making process.

The outcome of the study associates the effectiveness of the collaborative approach with its ability to harness the thoughts and input of different people and units, through consensus. No single individual in a given organization has all the skills that effective strategy implementation requires; leveraging the skills from different subordinate employees provides the best approach to effective implementation (Ateş et al., 2020). Developing a shared understanding among branches and subsidiaries is important, to avoid such obstacles as competing interests that might impede effective strategy implementation (Desmidt & Meyfroodt, 2018; Ateş et al., 2020). Consensus-building also helps to bring committed and skilled individuals on board (Adousi et al., 2018; Ramadian et al., 2020), critical to a unified direction within an organization, which determines the strategy implementation's effectiveness (Ateş et al., 2020). Through adopting a collaborative approach, managers can ensure a high level of comprehension and support among employees and managers (Adousi et al., 2018; Ramadian et al., 2020). Collaborative approaches entrench a culture of consultation and engagement early in the strategy formulation phase, producing an effective implementation phase (Ramadian et al., 2020).

This study also notes that the collaborative approach enables employees and subordinates to provide feedback regarding strategy implementation. A collaborative approach cultivates a feeling of safety among employees who are unafraid of making mistakes and providing feedback. This is important to enhancing the effectiveness of strategy implementation; feedback enables management to assess the progress of implementation and introduce interventions if necessary (Ramadian et al., 2020). Enhanced feedback associated with the collaborative approach is vital to ensuring the alignment of organizational actions with strategic intentions (Li et al., 2008). This study also associates the effectiveness of a collaborative approach with the enhanced creativity of diverse perspectives, supporting the arguments of Andrews et al. (2017) that effective strategy implementation requires creative skillsets to convert complex activities into simpler ones.

This study encourages taking various steps to achieve successful strategy implementation with a collaborative approach, such as enacting an effective communication strategy. Effective communication forms the basis for consensus-building and collaboration, by ensuring employees' understanding of how a strategy change influences their approach to their work and what they must alter. Guruwo et al. (2017) make similar observations, noting that clearly communicating strategic goals is important for effective implementation. Andrews et al. (2017) also note that effective strategy implementation requires communication and precision, while Li et al. (2008) observe that corporate communication permeates every aspect of strategy implementation and facilitates its effectiveness. Adopting a collaborative approach provides organizations with open and supportive communication, vital to effective strategy implementation (Shimizu, 2017; Gulbrandsen, 2019).

5.6 Discussion of Research Question 5

Evidence from this study revealed that no managers considered the cultural approach dominant. Instead, cultural change is used alongside other approaches, corroborating Lehner's (2004) observations. Although a high proportion of participants considered a cultural approach to be effective for strategy implementation, the findings only represent the responses of seven participants. However, no participants rated the cultural approach as ineffective for strategy implementation, which could be associated with its previously reported advantages, such as persuading stakeholders to believe in the effectiveness of the adopted action (Dartey-Baah, 2013; Baroto et al., 2014; Maotwanyane, 2017). Unlike the collaborative approach, the cultural approach extends the persuasion tactic to the lower levels of the organization, to ensure the commitment of all stakeholders to the course of action (Yang et al., 2010; Rajasekar, 2014).

5.7 Discussion of Effectiveness of the Combined Approach

The findings regarding the use of various approaches to strategy implementation in SAP SE provide insight into strategy implementation in MNCs generally. Research into such approaches should not be restricted to a single approach. Agreeing with Lehner's (2004) observations, this study notes that MNCs can use combinations of two or more approaches to accomplish their planned strategies. Therefore, these findings suggest that rather than evaluate the effectiveness of a single approach for strategy implementation, studies should focus on both single and combined approaches.

The outcome of this study suggests that SAP SE does not use a singular approach for strategy implementation but, instead, adopts multiple and varied approaches. Although collaborative and commander approaches were reported to be dominant, change and cultural approaches were also reported as used for strategy implementation. The company adopts a combined approach in some instances, using a combination of change and collaborative, commander and collaborative, or change and cultural approaches, to accomplish various actions. In some cases, the company uses all four approaches together.

As Yang et al. (2010) note, complex organizations adopt different approaches to align practices with strategic plans. The adoption of multiple strategies by SAP SE likely represents an attempt to address the challenges associated with strategy implementation in a complex organization. According to Sageder and Feldbauer-Durstmüller (2019), for MNCs such as SAP SE, branches in different countries must operate in the legal and economic framework of the host country. Such MNCs require complex management structures and approaches to achieving effective strategy implementation.

These findings demonstrate that using combined approaches enables the organization to benefit from the effectiveness of multiple approaches while compensating for their individual weaknesses. A combination of collaborative and organizational-change approaches could be used, with collaborative as the primary method and change as secondary. This could provide benefits associated with consensus-building, effective communication, and enhanced engagement (Desmidt & Meyfroodt, 2018; Ateş et al., 2020; Ramadian et al., 2020). The managers noted that using the change approach as a secondary method for strategy implementation is important to achieving customer success and pivoting to desired outcomes.

The secondary approaches could also be based on the ability to address the shortcomings of the collaborative approach, such as prolonged decision-making processes and lack of control and accountability (Lehner, 2004).

This study also notes that the commander and collaborative strategies together achieve improved effectiveness in strategy implementation. The board uses the commander approach in decision-making regarding the direction to take, while the collaborative approach rallies employees and subordinates to support the decisions. Using a combination of the commander and collaborative approaches addresses weaknesses associated with them individually while enhancing their combined effectiveness. Decision-making by the board becomes quicker when it does not need to involve the rest of the organization, a limitation of the collaborative approach (Lehner, 2004). The implementation process is also successful because it involves engaging with organizational members to achieve consensus around the actions required to accomplish the decisions the board makes, key to ensuring effective strategy implementation (Desmidt & Meyfroodt, 2018; Ateş et al., 2020).

Accordingly, the selection of a combination of approaches depends on the associated customer value and the benefits for building the best product and providing quality service. The study also notes that this choice depends on individual and business strategy impacts.

5.8 Discussion of Challenges

The outcome of this study highlights various challenges that MNCs in the software industry are likely to face during strategy implementation, such as those involved in setting priorities, which could be related to an organization’s complexity (Wortmann, 2000; Chimhanzi, 2004; Li et al., 2008). This study also notes that organizational complexity and multi-layer organizational hierarchies in MNCs present a challenge for strategy implementation, especially regarding communication and engagement. Evidence also indicates that the complexity of MNCs often results in considerable overlap in products, markets, and technologies, which may negatively impact strategy implementation (Wortmann, 2000). The complexity is high for a company such as SAP SE, where the parent organization in Germany must achieve a home-external fit while the subsidiaries across various countries must achieve the host-external fit and simultaneously maintain the organizational-internal fit (Gammeltoft et al., 2012; Edwards et al., 2013).

According to this study, ineffective communication may also cause failed strategy implementation in MNCs, supporting the observations of previous researchers (Andrews et al., 2017; Shimizu, 2017; Gulbrandsen, 2019). Shimizu (2017) states that the most frequent barriers to effective strategy implementation involve communication. This study indicates that ineffective communication results in an inadequate understanding of the strategy and ineffective implementation, especially among low-level managers and employees. The importance of addressing ineffective communication to ensure employee understanding of required changes is noted, and a solution is provided that highlights the importance of change agents who educate employees and subordinates on the strategy.

Impatience among stakeholders represents another challenge that MNCs in the software industry face in implementing strategy. This study notes that impatience could lead to stakeholders losing motivation and faith in the implementation process, which leads to ineffective implementation.

The study also highlights limited resources as a challenge, noting the scarcity of time and human resources as potentially derailing the process, corroborating the conclusions of Gammeltoft et al. (2012) regarding the negative impact of limited skilled human resources. The author addresses resource limitations within an organization or limited managerial experience and capabilities impeding MNC realignment of strategies to address challenges or take advantage of opportunities.

This study also notes the challenges that the diverse MNC environment presents. The uniqueness of the markets across different countries constitutes a difficulty associated with varying customers' demands, values, and cultures, according to Butzbach et al. (2020). Gammeltoft et al. (2012) also note that different markets have legal and procedural differences. The challenge associated with the diverse needs of SAP's branches and subsidiaries exemplifies the challenge MNCs face as part of operating in dynamic markets where political, social, economic, legal, and technological aspects are continually changing (Edwards et al., 2016; Bijaoui, 2017; Gunnigle et al., 2019; Butzbach et al., 2020).

The findings of this study indicate that implementing a strategy using a collaborative approach entails the challenge of limited control, evident when the leader is not fully in control of the outcome and cannot influence it. The leaders and managers then lose accountability for the performance and effectiveness of the strategy implementation. According to Anyango (2007), the lack of accountability among senior organizational managers is a challenge; they play a critical role in the strategic-management process, and the company relies upon them to forecast the opportunities and challenges available in the business environment. The outcome of this study also notes that although collaborative approaches are cited as dominant for strategy implementation, they are associated with difficulty in implementing radical strategic changes. This is because a collaborative approach is based on consensus-building, difficult to establish when addressing radical change (Lehner, 2004; Maotwanyane, 2017). The study indicates that the commander approach entails challenges that include a lack of collaboration, as well as ineffective communication, inclusivity, and engagement (Drummond-Smith, 2018).

Chapter VI: Summary, Implications, and Recommendations

6.1 Summary

This study was conducted to address the knowledge gap regarding strategy implementation for MNCs in the software industry. The research questions were assessed using qualitative research based on a descriptive research design. Analysis of the findings indicates that the collaborative approach is the most dominant, followed by the organizational-change approach. The cultural and collaborative approaches are seen as effective for strategy implementation, while the organizational-change and commander approaches are seen as ineffective. This study also finds that the approaches include unique challenges that impede the effectiveness of strategy implementation. Such challenges include setting priorities, ineffective communication, ineffective measurement of success and outcome, impatience among individuals involved in the implementation process, limited resources, a lack of process uniformity, and the uniqueness of markets and the organization. The outcome of this study further notes that the differences in effectiveness between the collaborative approach and both the commander and organizational-change approaches are statistically significant. These findings suggest that applying the collaborative approach to strategy implementation leads to realizing significantly positive implementation outcomes, compared to the commander or organizational-change approaches. The cultural approach significantly differs from the commander approach but not the organizational-change approach, suggesting that managers considering the cultural or commander approach, who want to realize highly effective strategy implementation, should choose the cultural approach.

This chapter concludes the presentation of information in this dissertation. The conclusion explains the outcome of the study and its interpretation in chapter V. The chapter begins with describing the significance of the study outcome regarding practice and theoretical implications, the former focusing on how the findings inform strategy implementation approaches in MNCs. The chapter then presents the recommendations from the findings and the conclusion, connecting the information that this research developed.

6.2 Implication of the Findings

Some important practice implications of this study's findings relate to enhancing the effectiveness of strategy implementation in MNCs in the software industry. As Gilbert and Benham (2009) note, most German MNCs have not implemented their strategies, due to failure to adopt the appropriate approach. Based on the study findings, the collaborative and cultural approaches support effective strategy implementation. In particular, the collaborative approach allows managers to take advantage of the skills, expertise, and contributions from different organizational units and stakeholders. According to this study, managers of MNCs must consider adopting a collaborative approach, to create synergy between units dispersed across countries. This study also acknowledges the challenges that managers could face when applying a single approach, especially in as complex an organization as SAP SE. To avoid such challenges as the prolonged time required for decision-making and building consensus across subsidiaries in diverse markets and economic situations, this study encourages managers to adopt a combined approach to strategy implementation, where the collaborative approach is considered primary and other approaches (i.e., commander, cultural, or organizational change) as secondary. It encourages managers to be guided by their own expertise, subordinates' skills and competencies, the complexity within the organization, the tasks at hand, and the prevailing internal and external factors. The outcome of this study also encourages the managers of MNCs to adopt a combination of approaches, to ensure effective communication across different organizational units and the benefits of feedback from organization members.

The research implications relate to assessing how adopted approaches influence strategy implementation. This study shows that considering combined approaches is important and could contribute significant insight into understanding the effectiveness of strategy implementation.

This study initially focused on assessing individual approaches, which seems inadequate for fully understanding the approaches that MNCs use and how they influence the effectiveness of strategy implementation. The outcome of this study points to the significant role that the use of combined approaches plays in strategy implementation and highlights it as an area that warrants future research.

6.3 Recommendations for Future Research

This section focuses on aspects of the methodology and the gaps that emerged from the discussion of the findings. Following are the recommendations for future research.

Future researchers should assess the effectiveness of combined approaches for strategy implementation, a topic that requires further exploration to better understand MNC approaches to strategy implementation. The findings of this study regarding the combined approaches were not initially anticipated, emerging during the analysis of individual approaches. Therefore, future researchers should focus on combined approaches and use appropriate methods to analyze this gap.

Future researchers also should adopt research designs that limit bias in assessing the effectiveness of various approaches. In this study, the questionnaire and interview data were self-report instruments, subjecting the study to possible influence of recall or reporting bias. Participants might have inaccurately recalled experiences or knowingly provided inaccurate information. Future researchers should explore other methods to control for possible bias.

Future researchers should also consider recruiting participants from different organizations, to enhance the generalizability of the findings. This study’s design was limited by the recruitment of participants from a single MNC, which raised questions concerning the generalizability of the conclusions to other organizations. To address these concerns, future researchers should expand participant recruitment.

Future researchers should consider involving more than one coder to improve the trustworthiness of the study and its applicability. The coding of data by a single individual raises issues relating to inability to cite inter-rater reliability, limiting the trustworthiness of the study. Future researchers should focus on engaging more than one qualified individual for the coding process, to establish inter-rater coding reliability.

6.4 Conclusions

This dissertation addressed the knowledge gap regarding strategy implementation for MNCs in the software industry, using SAP SE as a case study. Quantitative and qualitative research collected data from top managers in the company, addressing various aspects related to approaches to strategy implementation in German MNCs. According to this study, a collaborative approach and an organizational-change approach are the first and second most dominant, respectively, according to participants in the study. Regarding effectiveness, cultural and collaborative approaches are seen as effective for strategy implementation, and the organizational-change and commander approaches as ineffective. The study also noted that a combined approach allows managers to address challenges that the use of individual approaches may pose.

This study shows various strategies that MNCs in the software industry can adopt to influence the effectiveness of strategy implementation. Managers of such MNCs should consider a collaborative approach, to create synergy among units dispersed across various countries. To avoid such challenges as prolonged decision-making time and building consensus across subsidiaries in diverse markets and economic situations, this study encourages managers to adopt a combined approach to strategy implementation.

As cited above, some limitations require consideration when interpreting this study's conclusions. One limitation relates to the use of self-reported data. Another is associated with recruiting participants from a single MNC, another with the researcher being the sole coder. To address these concerns, future researchers should explore other methodological aspects related to the effectiveness of a combined approach to strategy implementation.

REFERENCES

Adousi, A., Farhangi, A. A., Hasangholipour, T., & Najafbagy, R. (2018). Modeling the effects of media on affective commitment to strategy implementation. *Journal of Industrial Strategic Management*, *3*(1), 68-77.

Aggarwal, A., Berry, O., Kenney, M., & Lenway, S. A. (2016). Corporate strategies for software globalization. In *The Moving Frontier* (pp. 277-302). Routledge.

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*(5), 888-918. https://doi.org/10.1037/0033-2909.84.5.888

Andrews, R., Beynon, M. J., & Genc, E. (2017). Strategy implementation style and public service effectiveness, efficiency, and equity. *Administrative Sciences*, *7*(1), 4-21.

Anyango, R. A. (2007). Challenges of strategy implementation: A survey of multinational manufacturing companies in Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/7450/ABSTRACT.pdf?sequence=3

Ateş, N. Y., Tarakci, M., Porck, J. P., van Knippenberg, D., & Groenen, P. J. (2020). The dark side of visionary leadership in strategy implementation: Strategic alignment, strategic consensus, and commitment. *Journal of Management*, *46*(5), 637-665.

Baroto, M. B., Arvand, N., & Ahmad, F. S. (2014). Effective strategy implementation. *Journal of Advanced Management Science*, *2*(1), 50-54. http://www.joams.com/uploadfile/2013/1225/20131225044203610.pdf

Becker-Ritterspach, F., & Dörrenbächer, C. (2009). Intrafirm competition in multinational corporations: Towards a political framework https://www.researchgate.net/publication/233606219_Intrafirm_Competition_in_Multinational_Corporations_Towards_a_Political_Framework

DOI: 10.1179/102452909X451332

Benzmann, S. P. J. (2021). *How well does the European Digital Single Market Strategy and the Industry 4.0 Framework afford Digitalization Transformation? A Case Study of SAP SE* (Master's thesis).

Bijaoui, I. (2017). *SMEs in an era of globalization. International Business and Market Strategies.* https://doi. org/10.1057/978-1-137-56473-3.

Boffelli, A., Golini, R., Orzes, G., & Dotti, S. (2020). Open the box: A behavioural perspective on the reshoring decision-making and implementation process. *Journal of Purchasing and Supply Management*, *26*(3), 100623.

Braun V., Clarke V., Hayfield N., Terry G. (2019) *Thematic Analysis. Liamputtong P. (eds) Handbook of Research Methods in Health Social Sciences.* Springer, Singapore. https://doi.org/10.1007/978-981-10-5251-4_103

Buttle, F., & Bok, B. (1996). Hotel marketing strategy and the theory of reasoned action. *International Journal of Contemporary Hospitality Management*.

Butzbach, O., Fuller, D. B., & Schnyder, G. (2020). Manufacturing discontent: National institutions, multinational firm strategies, and anti-globalization backlash in advanced economies. *Global Strategy Journal*, *10*(1), 67-93.

Cândido, C. J., & Santos, S. P. (2019). Implementation obstacles and strategy implementation failure. *Baltic Journal of Management*.

Čater, T., & Pučko, D. (2010). Factors of effective strategy implementation: Empirical evidence from Slovenian business practice. *Journal for East European Management Studies*, 15(3)207-236.

https://doi.org/10.2307/23281679

Chen, K. H., Wang, C. H., Huang, S. Z., & Shen, G. C. (2016). Service innovation and new product performance: The influence of market-linking capabilities and market turbulence. *International Journal of Production Economics, 172,* 54-64.

Cohen, B., & Neubert, M. (2019). The influence of pricing strategies on corporate valuation. *International Journal of Teaching and Case Studies*, *10*(2), 125-156.

Chimhanzi, J. (2004). The impact of marketing/HR interactions on marketing strategy implementation. *European Journal of Marketing, 38*, 73-98.

Chimhanzi, J., and Morgan, R.E. (2005). Explanations from the marketing/human resources dyad for marketing strategy implementation effectiveness in service firms. *Journal of Business Research, 58,* 787– 796.

Dartey-Baah, K. (2013). The cultural approach to the management of the international human resource: An analysis of Hofstede's cultural dimensions. *International Journal of Business Administration*, *4*(2), 39-95

Derfuss, K. (2016). Reconsidering the participative budgeting-performance relation: A meta-analysis regarding the impact of level of analysis, sample selection, measurement, and industry influences. *The British Accounting Review*, *48*(1), 17-37. https://www.researchgate.net/publication/282628708_Reconsidering_the_participative_budgeting-performance_relation_A_meta-analysis_regarding_the_impact_of_level_of_analysis_sample_selection_measurement_and_industry_influences

Desmidt, S., & Meyfroodt, K. (2018). Debate: Unravelling strategic planning effectiveness—what about strategic consensus? *Public Money & Management*, *38*(4), 255-256.

Dörrenbächer, C. & Geppert, M. (2009). Micropolitical strategies and strategizing in multinational corporations: The case of subsidiary mandate change. In Costanzo, L. A. & MacKay, R. B. (Eds.), *Handbook of research on strategy and foresight*. Edward

Elgar Publishing.
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.474.9644&rep=rep1&type=pdf

Drummond-Smith, I. (2018). "Yes, sir": Leadership and blind obedience in hierarchical organisations. *International Journal of Emergency Services*, *7*(1), 24-31.

Edwards, T., Marginson, P., & Ferner, A. (2013). Multinational companies in cross-national context: Integration, differentiation, and the interactions between MNCS and nation states. Introduction to a special issue of the *ILR Review*. *ILR Review*, *66*(3), 547-587.

Edwards, T., Sanchez-Mangas, R., Jalette, P., Lavelle, J., & Minbaeva, D. (2016). Global standardization or national differentiation of HRM practices in multinational companies? A comparison of multinationals in five countries. *Journal of International Business Studies, 47*(8), 997-1021.

Etikan, Ilker. 2016. Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics 5(1*):1.
doi: 10.11648/j.ajtas.20160501.11.

Elbahri, F. M., Al-Sanjary, O. I., Ali, M. A., Naif, Z. A., Ibrahim, O. A., & Mohammed, M. N. (2019, March). Difference comparison of SAP, Oracle, and Microsoft solutions based on cloud ERP systems: A review. In *2019 IEEE 15th International Colloquium on Signal Processing & Its Applications (CSPA)* (pp. 65-70). IEEE.

Farcas, A., Ko, J., Chan, J., Malik, S., Nono, L., & Chiampas, G. (2020). Use of incident command system for disaster preparedness: a model for an emergency department COVID-19 response. *Disaster Medicine and Public Health Preparedness*, 15(3), E31-E36.
doi:10.1017/dmp.2020.210

Fragouli, E., & Nicolaidou, Z. (2020). Risk management of multinational companies (MNCs) in rising economies. *International Journal of Information, Business and Management*, *12*(4), 237-267.

Gammeltoft, P., Filatotchev, I., & Hobdari, B. (2012). Emerging multinational companies and strategic fit: A contingency framework and future research agenda. *European Management Journal*, *30*(3), 175-188.

Gilbert, D. U., & Behnam, M. (2009). Strategy process management in multinational companies: Status quo, deficits and future perspectives. *Problems and Perspectives in Management*, *7*(1), 59-74.

Gulbrandsen, I. T. (2019). The co-presence of clarity and ambiguity in strategic corporate communication–An exploratory study. *International Journal of Strategic Communication*, *13*(2), 95-109.

Gunnigle, P., Lavelle, J., & Monaghan, S. (2019). Multinational companies and human resource management in Ireland during recession: A retrospective from a highly globalized economy. *Thunderbird International Business Review*, *61*(3), 481-489.

Günther, Kathrin (2016). Key Factors for Successful Implementation of a Sustainability Strategy. *Journal of Applied Leadership and Management, ISSN 2194-9522, Hochschule Kempten - University of Applied Sciences, Professional School of Business & Technology, Kempten, Vol. 4,* pp. 1-20,
http://www.journal-alm.org/article/view/17106

Guruwo, P. T., Chiguvi, D., Guruwo, J., & Bag, P. (2017). The effectiveness of strategy implementation on organizational performance: A case study of clothing retail outlets in Zimbabwe.

Hrebiniak, L. (2008). Making strategy work: Overcoming the obstacles to effective execution. *Ivey Business Journal*, 1-7. Wharton School Publishing.

Jofre, S. (2011). *Strategic management: The theory and practice of strategy in (business) organizations.* DTU Management. DTU Management 2011 No. 1

Lehner, J. (2004). Strategy implementation tactics as a response to organizational, strategic, and environmental imperatives. *Management Revue, 15(4)*460-480.

Li, Y., Guohui, S., & Eppler, M. J. (2008). Making strategy work: A literature review on the factors influencing strategy implementation. Retrieved from https://doc.rero.ch/record/8916/files/wpca0802.pdf

Libakova, N. & Sertakova, E. (2014). The Method of Expert Interview as an Effective Research Procedure. *Journal of Siberian Federal University. Humanities & Social Sciences 1 (2015 8)* 114-129

Lola, M. S., Alwi, W. S. W., & Zainuddin, N. H. (2016). Sample selection model with Bootstrap (BPSSM) approach: Case study of the Malaysian population and family survey. *Open Journal of Statistics, 6*(5), 741-748.

Mackey, A., & Gass, S. M. (2015). *Second language research: Methodology and design*. Routledge.

MarketLine Industry Profile - Software in Germany. (2020, March)

MarketLine Industry Profile - Software in Europe. (2021, February)

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does Sample Size Matter in Qualitative Research?: A Review of Qualitative Interviews in is Research. *Journal of Computer Information Systems, 54*, 11 - 22.

Maotwanyane, G. K. (2017). *Addressing the strategy implementation gap with a liabilities approach* (Doctoral dissertation, University of Pretoria). https://repository.up.ac.za/bitstream/handle/2263/67788/Maotwanyane_Addressing_2017.pdf?sequence=1&isAllowed=y

Mayende, W. S., & Joseph, O. O. (2020). Top management team characteristics, competitive environment and strategy implementation. *International Journal of Business and Management*, *15*(7). 147-158

McDonnell, A., Gunnigle, P., Lavelle, J., & Lamare, R. (2016). Beyond managerial talent: 'Key group' identification and differential compensation practices in multinational companies. *The International Journal of Human Resource Management*, *27*(12), 1299-1318.

Merkus, S., Willems, T., & Veenswijk, M. (2019). Strategy implementation as performative practice: Reshaping organization into alignment with strategy. *Organization Management Journal*, *16*(3), 140-155.

Merriam, S., Tisdell, E. (2015). *Qualitative research: a guide to design and implementation.* New Jersey, USA. Jossey-Bass

Mitchell, A. (2015). International management: A conceptual framework for comparison of offshoring and outsourcing strategies by UK and German multinational corporations. https://doi.org/10.24052/JBRMR/209

Momin, Z. A. (2018). Identifying the competencies of middle managers leading successful strategy implementation. Retrieved from https://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=1145&context=etd_coll

Musmade, P., Nijhawan, L., Udupa, N., Bairy, K., Bhat, K., Janodia, M. and Muddukrishna, B. (2013). Informed consent: Issues and challenges. *Journal of Advanced Pharmaceutical Technology & Research, 4(3)*, p.134.

Nkuda, M. O. (2020). Integration of hard, soft and mixed factors for effective strategy implementation: An eco-system with strategic agility imperative. *KIU Journal of Social Sciences*, *6*(1), 381-388.

Nwachukwu, C. E., Chládková, H., & Olatunji, F. (2018). The relationship between employee commitment to strategy implementation and employee satisfaction. *Trends Economics and Management*, *12*(31), 46-56.

Okumus, F. (2003). A framework to implement strategies in organizations. *Management Decisions*, *41*(9), 871-882.

Radomska, J. (2014). Linking the main obstacles to strategy implementation with the company's performance. *Procedia - Social and Behavioral Sciences*, 150, 263-270. https://www.sciencedirect.com/science/article/pii/S1877042814051039

Rajasekar, J. (2014). Factors affecting effective strategy implementation in a service industry: A study of electricity distribution companies in the Sultanate of Oman. *International Journal of Business and Social Science, 5*(9). http://ijbssnet.com/journals/Vol_5_No_9_1_August_2014/15.pdf

Ramadian, A., Eliyana, A., Hamidah, A. D. B., & Rakawuri, R. (2020). The effect of compensation strategy implementation on knowledge sharing through affective commitment and psychological contracts. *Systematic Reviews in Pharmacy*, *11*(9), 699-712.

Sageder, M., & Feldbauer-Durstmüller, B. (2019). Management control in multinational companies: a systematic literature review. *Review of Managerial Science*, *13*(5), 875-918.

SAP (2020). *2020 SAP annual report on form 20-F*. Retrieved from https://www.sap.com/docs/download/investors/2020/sap-2020-annual-report-form-20f.pdf

SAP (2021). *From Inventing the Enterprise Software Sector to Helping the World Run Better*. Retrieved from https://www.sap.com/corporate/en/company/history.html?pdf-asset=70eee289-847d-0010-87a3-c30de2ffd8ff&page=1

Sayyadi Ghasabeh, M. (2021). Transformational leadership: Implementing a cultural approach in organizations. *The Journal of Values-Based Leadership*, *14*(1), 9.

Schanz, D., Dinkel, A., & Keller, S. (2017). Tax attractiveness and the location of German-controlled subsidiaries. *Review of Managerial Science*, *11*(1), 251-297.

Shimizu, K. (2017). Senders’ bias: How can top managers’ communication improve or not improve strategy implementation?. *International Journal of Business Communication*, *54*(1), 52-69.

Theodore, W., Kasali, R., Balqiah, T. E., & Sudhartio, L. (2017, November). The role of perceived managerial discretion on strategy implementation and its implication on organizational performance: A conceptual model. In *International Conference on Business and Management Research (ICBMR 2017)*. Atlantis Press.

Ul Musawir, A., Serra, C. E. M., Zwikael, O., & Ali, I. (2017). Project governance, benefit management, and project success: Towards a framework for supporting organizational strategy implementation. *International Journal of Project Management*, *35*(8), 1658-1672.

Verma, P. S. M. S., & Rana, N. (2021). A Study of HRM and Digital Transformation in Organization‟ s Strategy and Policies: Reshaping HR Space.

Wortmann, J. C. (2000). Evolution of ERP Systems, *International Conference of the Manufacturing Value-Chain. Troon*, Scotland, UK, Klüwer Academic Publisher

Yang, L., Guo-Hui, S., & Eppler, M. J. (2010). Making strategy work: A literature review of the factors influencing strategy implementation.

DOI:10.4337/9781849807289.00015

Yaprak, Xu, & Cavusgil. (2011). Effective Global Strategy Implementation. *Management International Review*, *51*(2), 179-192. https://doi.org/10.1007/s11575-011-0071-6

Appendix A – Survey

Demographic information

1. What is your age bracket?

21–30 [ ] 31–40 [ ] 41–50 [ ] 51–60 [ ] Above 60 [ ]

2. What is your gender?

Male [ ] Female [ ] I choose not to answer [ ]

3. Where do you work?

Head office [ ] Branch [ ]

If at a branch, which branch do you work at?: ___________________________________

4. How long have you been working in strategic implementation?

Less than 1 month [ ] Between 1 and 6 months [ ] Between 6 and 12 months [ ] Between 12 and 18 months [ ] Between 18 and 24 months [ ] More than 24 months [ ]

5. What is your current position?

Entity President [ ] Chief Executive Officer [ ] Chief Financial Officer [ ] Chief Operating Officer [ ] Executive Director [ ] General Manager [ ] Managing Director [ ] Global Vice President [ ] (Regional) Vice President [ ]

6. What is your current area of focus/board area?

Sales [ ] P&I (Product & Innovation) [ ] Finance [ ] Services [ ] Marketing [ ] Other: ________________

7. What is your highest academic qualification?

Doctorate [ ] Master's [ ] Diploma [ ] Bachelor's [ ] High School [ ]

Strategic implementation approach

8. Which strategic implementation approach is best used by your part of the SAP organization?

Commander Model [ ]

** Here, the CEO uses economic and competitive analyses to plan resource allocations in the achievement of explicit objectives. (Bourgeois and Brodwin, 1982)*

Change Model [ ]

** This approach deals explicitly with strategy implementation, and emphasizes how organizational structure, incentive compensation, control systems, and so forth can be used to facilitate the execution of a strategy. It usually concerns the adoption of a new strategy. (Bourgeois and Brodwin, 1982)*

Collaborative Model [ ]

** This approach concentrates on group decision-making at senior levels, and involves top management in the formulation process to secure commitment. It involves the consideration of multiple inputs to a group decision process in which strategy emerges as a negotiated outcome. (Bourgeois and Brodwin, 1982)*

Cultural Model [ ]

** This approach seeks to implement strategy through the infusion of a corporate culture throughout the organization. Here, lower levels participate in the design of means to perpetuate strategic direction, and are inculcated with a set of values which influence work-related behavior. (Bourgeois and Brodwin, 1982)*

Crescive Model [ ]

** This approach draws on managers' natural inclinations to want to develop new opportunities as they see them in the course of their day-to-day management. This involves "growing" strategy from within the firm. (Bourgeois and Brodwin, 1982)*

9. How do you rate the implementation of the strategy of the organization?

Extremely effective [ ]

Very effective [ ]

Somewhat effective [ ]

I am uncertain [ ]

Ineffective [ ]

Very ineffective [ ]

Challenges faced by SAP in the implementation of its strategy

10. In which area(s) does SAP face challenges in implementing its strategy through local branches? (Check all those that apply)

Resistance from the local branches [ ]

High cost [ ]

Operational restrictions [ ]

Other: ___________________________________

11. Please briefly describe the challenges: ___________________________________

12. How effective is SAP's strategy implementation in improving financial performance?

Extremely effective [ ]

Very effective [ ]

Somewhat effective [ ]

I am uncertain [ ]

Ineffective [ ]

Very ineffective [ ]

13. How would you rate the effectiveness of the strategic implementation approach selected in question 8 for strategy implementation at SAP?

Extremely effective [ ]

Very effective [ ]

Somewhat effective [ ]

I am uncertain [ ]

Ineffective [ ]

Very ineffective [ ]

14. Would you be available for an interview to further discuss the topic of Strategic Implementation Approaches? If yes, please share your name:

____

Thank you for your responses!

Appendix B – Interview Questions

For the record, could you share your role and involvement with strategy implementation?

How long have you been involved in strategy implementation for your part of the organization?

Based on the overview, which approach is most frequently used by you/in your part of the organization when implementing strategy in your organization? Can you provide a couple of examples? How would you rate the effectiveness of this approach?

How do you align your strategy, the strategic initiatives of your part of the organization to the global strategic objectives and implementation? How do you measure the success such alignment? Can you provide a couple of examples? Do you use computer aids, i.e. decision support systems?

What are the main impediments, challenges and restrictions you have observed the organization facing during strategic planning and implementation? How are these challenges overcome?

How often are the organizational structure and incentives adjusted to promote the new strategy?

How often do you see employees, i.e. catalysts or T4 experts involved in strategy formation?

How does the organization communicate the strategy to employees?

In your opinion, how are the company's daily activities aligned with the strategy?

How would you rate the effectiveness of SAP's strategy implementation in improving financial performance?

How do you measure the success and effectiveness of strategy and implementation in the organization? Can you provide a couple of examples?

Appendix C – ANOVA Output

Multiple Comparisons
Dependent Variable: prefsc
LSD

(I) approach	(J) approach	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.91667*	0.38732	0.022	0.1361	1.6973
	3	.52381*	0.24118	0.035	0.0377	1.0099
	4	-0.16667	0.32734	0.613	-0.8264	0.4931
2	1	-.91667*	0.38732	0.022	-1.6973	-0.1361
	3	-0.39286	0.4066	0.339	-1.2123	0.4266
	4	-1.08333*	0.46293	0.024	-2.0163	-0.1504
3	1	-.52381*	0.24118	0.035	-1.0099	-0.0377

	2	0.39286	0.4066	0.339	-0.4266	1.2123
	4	-0.69048	0.34995	0.055	-1.3957	0.0148
4	1	0.16667	0.32734	0.613	-0.4931	0.8264
	2	1.08333*	0.46293	0.024	0.1504	2.0163
	3	0.69048	0.34995	0.055	-0.0148	1.3957

* The mean difference is significant at the 0.05 level.