

# **Management of Multidisciplinary Teams: What is the Role of the Manager?**

## **Master thesis**

Author: S. Kamphuis

Faculty BMS - Master Business Administration

Track – Human Resource Management

First supervisor: Dr. A. C. Bos-Nehles

Second supervisor: Dr. J. Wijnmaalen

Words: 15142

Date: 19-8-2024

## **Abstract**

The utilization of multidisciplinary teams (MDTs) has grown significantly in recent years, offering notable benefits while simultaneously presenting challenges. While previous research has predominantly focused on the role of managers in general team settings, where team members share the same expertise or belong to a single discipline, the specific managerial roles within MDTs remain underexplored. Addressing this gap, this study explored the roles and responsibilities of managers across various MDTs through a multiple case study analysis of nine MDTs. The findings reveal that management of MDTs is dependent on contextual factors, such as managerial focus, team structure, team characteristics and organizational culture. Notably, an empowering and supportive managerial approach is highlighted as a crucial role of managers across all MDT settings, diverging from traditional management approaches in less diverse team contexts. This study offers valuable theoretical and practical implications, emphasizing the need for tailored management strategies within MDTs and providing recommendations for future research.

# Table of Contents

<b>1. Introduction</b> .....	4
<b>2. Literature Review</b> .....	7
<b>2.1 Advantages of Multidisciplinary Teams</b> .....	7
<b>2.2 The Role of Managers in Managing Teams</b> .....	8
<b>2.3 Challenges within Multidisciplinary Teams and their Management</b> .....	9
<b>2.4 Theoretical Framework: The Role of Managers in Multidisciplinary Teams</b> .....	12
<b>3. Methodology</b> .....	13
<b>3.1 Research Strategy</b> .....	13
<b>3.2 Data Collection Strategy</b> .....	14
<b>3.2.1 Data collection tool</b> .....	14
<b>3.2.2 Interview and Case Selection Criteria</b> .....	14
<b>3.2.3 Interview Strategy</b> .....	17
<b>3.2.4 Transcription Process</b> .....	18
<b>3.3 Data Analysis</b> .....	18
<b>4. Findings</b> .....	20
<b>4.1 Identified Role and Responsibilities of Managers in Multidisciplinary Teams</b> .....	20
<b>4.2 Within-Case Findings</b> .....	21
<b>4.2.1 Findings Case 1 and Case 2</b> .....	21
<b>4.2.2 Findings Cases 3, Case 4, Case 5, Case 6 and Case 7</b> .....	24
<b>4.2.3 Findings Case 8 and Case 9</b> .....	28
<b>4.2 Cross-Case Findings</b> .....	30
<b>5. Discussion</b> .....	36
<b>5.1 Comparison of Managerial Roles and Responsibilities in Teams vs. MDTs</b> .....	36
<b>5.2 Theoretical Implications</b> .....	38
<b>5.3 Practical Implications</b> .....	41
<b>5.4 Limitations and Future Research Directions</b> .....	42
<b>6. Conclusion</b> .....	44
<b>References</b> .....	45
<b>Appendix A: Interview Questions (English &amp; Dutch)</b> .....	54

# 1. Introduction

To address the challenges and complexities of modern organizations, it is necessary to integrate knowledge from various disciplines. This can be accomplished through the utilization of multidisciplinary teams (MDT) (Tymkiv, 2021). In an MDT, professionals from two or more different disciplines (Saint-Pierre et al., 2018) work together towards a common goal but within the boundaries of their profession (D'amour et al., 2005; Pastel et al., 2015). In literature, multidisciplinary, transdisciplinary, and interdisciplinary concepts are often used simultaneously (Pastel et al., 2015). However, MDTs are characterized by maintaining clear boundaries and independence among different disciplines and involve the integration of separate viewpoints, each contributing to the overall project (Choi & Pak, 2006).

Multidisciplinary teams provide substantial benefits across various work aspects. MDTs, as emphasized by Zwarenstein, Goldman, and Reeves (2009), foster continuous learning and innovation by bringing diverse expertise together. This collaborative environment broadens skills, generates novel perspectives, and enhances decision-making across different viewpoints (Hansson et al., 2008; Kauppi et al., 2020; Mitchell et al., 2017). Drawing from a varied knowledge pool, MDTs are crucial in improving planning, policies, and overall workplace efficiency (Atwall & Caldwell, 2006; Mitchell et al., 2017; Zwarenstein et al., 2009).

However, various MDT compositions can encounter drawbacks such as challenges in managerial aspects (Basset-Jones, 2005; Van Knippenberg et al., 2020) and communication (Edmondson & Nembhard, 2009; El-Awad et al., 2022) due to diverse professional backgrounds (Baldwin & Daugherty, 2008; Fleissig et al., 2006). These difficulties can contribute to role ambiguity (Atwal & Caldwell, 2006) and hinder the seamless sharing of knowledge (Comeau-Vallée & Langley, 2020), impacting overall team efficiency.

Considering these challenges across multidisciplinary settings, managing MDTs is essential to overcoming the negative effects of multidisciplinary teamwork. Line managers play an important role in managing and coordinating teams (Hales, 2005). First-line managers oversee non-managerial employees daily at the operational level (Bos-Nehles, 2010). They are situated between an organization's strategic and operational levels, facilitating their connection (Hales, 2005; Townsend et al., 2022). In their position, line managers are responsible for people management, implementation of HR practices, and leadership (Hutchinson & Purcell, 2008; Purcell & Hutchinson, 2007; Townsend et al., 2022).

Depending on the specific team structure and purpose, the management scope within MDTs often extends beyond line managers, including department and project managers. A project manager is a professional responsible for leading a project from its inception to completion, ensuring it meets its goals within scope, on time, and within budget (PMI, 2008). Project managers lead and direct the project and must inspire and support the team members toward project outcomes (Northouse, 2010). This

variety in managerial types creates different settings and influences how teams are managed and coordinated depending on whether line or project managers are involved.

However, these managers may encounter several issues that make managing such teams and the people in them challenging. The core challenge lies in coordinating an environment where different skills, areas of expertise, and viewpoints come together and must be aligned for effective collaboration (Chreim et al., 2013; D'Amour et al., 2005; Leathard, 2003). Due to this environment, managers face challenges regarding preventing the negative outcomes of multidisciplinary teamwork, which include complexities in communication (Edmondson & Nembhard, 2009) and collaboration (Baldwin & Daugherty, 2008), conflict resolution (Hansson et al., 2008), defining roles (Atwal & Caldwell, 2006), and fostering knowledge integration across boundaries (Comeau-Vallée & Langley, 2020). Moreover, coordination is often hampered because managers themselves may have different procedural knowledge and structures for understanding and instigating desired behaviors (El-Awad et al., 2022). An illustrative example from the HRM professional service context is the challenge of supervising specialists. The question "How Do You Supervise a Specialist?" (McDermott et al., 2015, p. 817) highlights the difficulty of managing professionals with specialized expertise that differs from the manager's area of expertise. This example underscores a broader issue in managing MDTs, where managers must effectively adapt their roles to oversee individuals from diverse disciplines.

Generally, there has been limited research on the roles and responsibilities of managers in multidisciplinary teams. While the role of line managers in general teams has been extensively studied and defined (Armstrong, 1998; Drent et al., 2022; Hutchinson & Purcell, 2008; Hales, 2005; MacNeil, 2003; Purcell & Hutchinson, 2007), a research gap exists in understanding their role within MDTs. Given the growing use of MDTs in organizations and the unique challenges that managers face in these teams, examining and defining their specific roles in managing MDTs is increasingly important. This paper addressed this gap and relevance by asking the following research question: "*What are the roles and responsibilities of managers in managing multidisciplinary teams from the perspectives of managers and team members?*". The manager's role in managing multidisciplinary teams will be explored through the lens of team role theory (Belbin, 1981).

The aim of this study is to provide a comprehensive understanding of the specific roles and responsibilities of managers across different MDTs. Therefore, a qualitative research approach is utilized, specifically employing a case study analysis across nine distinct MDTs. This approach allowed for an in-depth exploration of the roles and responsibilities of managers within various organizational contexts and team structures. The selection of diverse teams provides a comparative perspective on how managerial roles and responsibilities differ depending on the nature of the team and its objectives.

This study contributes to theory and literature on MDTs by demonstrating the roles and responsibilities of managers in MDTs. It also demonstrated that the roles and responsibilities of managers in MDTs are shaped by contextual factors such as company culture, team composition and team member characteristics. For example, the structure of the MDT, whether it is organically

collaborative, project-based, or involves multiple project managers, determines managerial priorities and actions in MDTs. Furthermore, the study extends literature on the roles and responsibilities of managers in teams, by showing how managing MDTs deviates from managers roles and responsibilities in general teams proposed by Hales (2005). Lastly, this study contributes to team role theory (Belbin, 1981) by highlighting the importance of an empowering and supportive role of managers in MDTs.

This thesis is organized as follows. Chapter 2 provides a theoretical framework consisting of theories relevant to the research question from which the research model is developed. In Chapter 3, the methodology to address the research question and come to results is mentioned. Subsequently, the collected data and findings are provided in Chapter 4. Then the conclusion is mentioned in which the findings are summarized, followed by a discussion section that analyzes and interprets the findings. After which the theoretical and practical implications are discussed. Finally, recommendations for future research are provided.

## **2. Literature Review**

Chapter 2 explores multidisciplinary teams by highlighting their advantages and challenges from diverse backgrounds and expertise. Subsequently, the role of managers in teams is outlined, after which the expected challenges and changes to this role are examined. Finally, it presents a theoretical framework that will serve as a foundational framework for further exploration into the roles and responsibilities of managers in multidisciplinary teams.

### **2.1 Advantages of Multidisciplinary Teams**

While this study focuses on multidisciplinary teams, it is essential to note that the concepts of multidisciplinary, transdisciplinary, and interdisciplinary are often used interchangeably in literature (Pastel et al., 2015). However, a key distinction lies in how these teams integrate disciplinary perspectives. Multidisciplinary teams maintain clear boundaries and independence for each discipline, with separate viewpoints contributing to the project and tasks (Choi & Pak, 2006). In contrast, interdisciplinary collaboration unites disciplinary viewpoints, promoting a more comprehensive and integrated approach (Choi & Pak, 2006). An advanced stage beyond the interdisciplinary team model is the transdisciplinary approach, where team members work together as a cohesive unit, collaborating beyond their specific areas of expertise and fields (Ebersöhn et al., 2007). This approach significantly converges responsibilities and functions across different disciplines (Gordon et al., 2014).

Multidisciplinary teams provide benefits that positively impact various work aspects. A multidisciplinary team's most important quality is its professionally diverse team members (Zwarenstein et al., 2009). By having multiple disciplines collaborate, a general benefit is that team members use their knowledge and skills while also learning from each other's disciplines, which challenges and broadens knowledge (Kauppi et al., 2020; Mitchell et al., 2017). Consequently, team members in multidisciplinary teams generate new perspectives, leading to new insights and different approaches (Hansson et al., 2008; Kauppi et al., 2020). This collaborative environment also provides access to a diverse pool of knowledge, contributing to more comprehensive decision-making (Mitchell et al., 2017; Ruhstaller et al., 2006) and improved problem-solving efficiency (Fay et al., 2006; Iliffe, 2008; Mitchell et al., 2017; Mitchell et al., 2014). The multifaceted viewpoints within these teams offer benefits such as enhanced planning (Atwall & Caldwell, 2006), policy development, staff satisfaction, and overall efficiency (Mitchell et al., 2017; Zwarenstein et al., 2009). In essence, multidisciplinary teams offer enhanced cognitive resources, broader knowledge, skills, abilities, and wider social networks, leading to improved task performance and increased creativity compared to homogeneously staffed teams (Fay et al., 2006).

Besides the general benefits, multidisciplinary teams offer tangible advantages in various fields. For instance, multidisciplinary teams have proved valuable for product development initiatives, as they

lead to shorter product development times and enhanced product quality (McDonough, 2000; Minguela-Rata & Arias-Aranda, 2009), which is essential for developing products and services that satisfy the diverse interests of customers, as highlighted by Jackson (1996). In the healthcare sector, multidisciplinary teamwork is widely used, where it ensures better patient care, better clinical outcomes, patient safety, and a more comprehensive approach to patients' needs (Diez et al., 2019; Llewellyn et al., 2019). In research, collaboration among researchers with diverse expertise fosters innovative problem-solving, leading to novel discoveries, inventions, and interventions that might be unattainable otherwise (Proctor & Vu, 2019).

## **2.2 The Role of Managers in Managing Teams**

In Human Resource Management (HRM), there is broad theoretical and empirical consensus on the pivotal role of line managers, underscored by their substantial impact on employee performance outcomes (Evans, 2022). Line managers are primarily responsible for the operational-level management of non-managerial employees (Hales, 2005; Nehles et al., 2006; Townsend et al., 2022), acting as a critical link between the organization's strategic direction and staff management (Hales, 2005; Townsend et al., 2022). Their diverse responsibilities include overseeing daily operations, managing staff, and implementing HR practices. Specifically, line managers handle tasks related to people management such as selecting, appraising, developing, communicating with, and involving employees (Hales, 2005; Purcell & Hutchinson, 2007). They also address performance issues, motivate and reward employees, and foster leadership and interpersonal relationships (Purcell & Hutchinson, 2007). Hales (2005) categorizes line managers' responsibilities into six intersecting areas: *“performance-oriented supervision, monitoring quality, looking after people and the work area, translating strategy into operations, financial responsibility, and business management responsibility”* (Drent et al., 2022, p. 370).

Although Hales (2005) outlined these key responsibilities for line managers, the study included various job titles, including project managers. This overlap suggests that the responsibilities of project managers can be aligned with those of line managers. Given this alignment, it is reasonable to expect that the roles and responsibilities of project managers are similar to those of line managers. However, differences in scope, authority, and focus of both roles can influence how teams are managed. While line managers typically concentrate on day-to-day operations and staff management, exercising broader control over teams or departments (Hales, 2005), project managers oversee specific projects with defined timelines and deliverables (PMI, 2008). Their authority is generally confined to the projects and project team members they manage (Anantatmula, 2010), and they engage in strategic planning to achieve project-specific goals, whereas line managers focus on operational efficiency and team dynamics (Hales, 2005).



This distinction is further supported by project management literature, which emphasizes that projects are unique and often involve complexity and uncertainty, highlighting the essential role of project managers (Anantamula, 2010). Successful projects are defined by their ability to meet objectives within scope, timeline, and budget constraints (PMI, 2008). Project management literature identifies three main roles for project managers: Resource Manager, who oversees resource allocation and team dynamics; Planning and Control Manager, who develops project plans and ensures adherence to constraints; and Coordinator, who facilitates communication and project reviews between management and the project team (Lientz & Rea, 2001).

Consequently, while Hales' (2005) findings can be applied to both project and line managers, it is essential to understand that managerial roles and responsibilities may differ based on whether line managers or project managers are involved. These variations arise from differences in scope, authority, and focus, which can impact how teams, or as in this study MDTs are managed.

In addition to the responsibilities, the role of managers can be further understood by connecting it with Belbin's team role theory. The team role theory of Belbin (1981) emphasizes the value of diverse roles within a team, with the team leader serving a pivotal role in coordinating employees' contributions towards shared objectives. Among the various team roles identified by Belbin, the coordinator and shaper roles are considered leadership roles. The Coordinator is the team controller and is calm, self-controlled, and self-confident (Senaratne & Gunawardane, 2015) and emphasizes team harmony (Fisher et al., 2001). The Shaper is a more task-oriented leader (Fisher et al., 2001), the driving force in the team, and highly dynamic and outgoing (Senaratne & Gunawardane, 2015). These roles provide direction, make decisions, and ensure the team stays focused and motivated (Aritzeta et al., 2007; Belbin, 1981). The characteristics of these roles align with the responsibilities of line and project managers, encompassing tasks such as motivating employees, guiding teams toward goals in alignment with the overall strategy, and ensuring the completion of tasks with guaranteed quality.

### **2.3 Challenges within Multidisciplinary Teams and their Management**

Despite many positive outcomes being related to multidisciplinary teams, research has shown that working with people from various backgrounds can be challenging (Baldwin & Daugherty, 2008; Fleissig et al., 2006; Xyrichis & Lowton, 2008). The obstacles preventing these teams from realizing their best performance can be found in differences in (professional) language (Choi & Pak, 2007; Edmondson & Nembhard, 2009; Fewster-Thuente & Velsor-Friedrich, 2008), perspectives regarding solutions (Aarts & Woerkum, 2002; Hall, 2005), work processes and methodologies (Atwal & Caldwell, 2006; D'amour et al., 2005; Edmondson & Nembhard, 2009), and conflicting goals (Holland et al., 2000; Pershina et al., 2019).

In addition, theories on social identity and self-categorization (Tajfel, 1982; Turner, 1987) suggest that multidisciplinary teams may struggle to leverage their potential benefits due to human

tendencies to simplify and categorize based on social and professional backgrounds (Fay et al., 2006). This can lead to in-group bias, out-group discrimination, and reduced communication between subgroups, hindering team functioning (Kreindler et al., 2012). Strong identification with one's functional background, influenced by professional identity, may result in smaller contributions to team performance (Fay et al., 2006), particularly when in the minority (Randel & Jaussi, 2003). Moreover, discrimination against team members outside one's own group can hinder the sharing of ideas (Tajfel et al., 1971), while variations in mental approaches may create obstacles to effective communication in multidisciplinary teams (Fay et al., 2006).

These challenges faced by multidisciplinary teams can contribute to collaboration issues (Baldwin & Daugherty, 2008; Higginson et al., 2003; Hsiao et al., 2012), communication difficulties (Edmonson & Nembhard, 2009; El-Awad et al., 2022; Fleissig et al., 2006; Jenkins et al., 2001; Taylor et al., 2013), conflicts among team members (Hansson et al., 2008; Jones, 2006; Mitchell et al., 2014; Pastel et al., 2015; Zajac et al., 2021), role ambiguity (Atwal & Caldwell, 2006; Stokes, 1994; Taylor et al., 2013), and complication of the integration of knowledge across diverse boundaries (Comeau-Vallée & Langley, 2020; Ratcheva, 2009). Moreover, they not only hinder team performance but also exacerbate managerial challenges (Basset-Jones, 2005; Van Knippenberg et al., 2020).

The challenges associated with multidisciplinary teams are expected to play a role in how managers manage and lead them. In certain situations, the identity of manager might be challenged. For example, managers may need to navigate situations where they are leading experts in certain aspects but may lack in-depth knowledge of the disciplines. This can impact their perceived expertise and credibility among team members. In addition, team members may have different expectations regarding the role and leadership style of the manager. Finding a balance between diverse expectations while staying true to one's managerial identity might become challenging.

Besides this, managers might experience difficulties such as navigating diverse goals among team members, addressing various attention points, and requiring a comprehensive understanding of the team's diverse knowledge areas. Line and project managers must address potential challenges stemming from varying expertise levels, ensuring alignment with individual goals and toward a common objective. In addition, different focal points come into play, especially if the manager is not well-versed in the specific knowledge areas involved. These challenges can lead to uncertainty and difficulties in a manager's responsibilities. According to role theory, this may result in role ambiguity and role conflict (Biddle, 1986; Örtqvist & Wincent, 2006; Rizzo et al., 1970). When managers are unsure about their roles and face conflicting demands, it becomes difficult for them to make decisions, allocate resources, and provide clear guidance to their team members, which impedes performance and creates obstacles for managers in effectively managing their teams (Rizzo et al., 1970).

Moreover, the six categories of Hales (2005) help explore how line managers' roles and responsibilities may shift when managing MDTs compared to general teams. For example, the *performance-oriented supervision* of managers, which includes directing daily operations, monitoring

performance, coordinating the team, and allocating work (Drent et al., 2022; Hales, 2005), can become more complex in MDTs. Coordinating work among team members with diverse skill sets could be more challenging, as managers must navigate different working styles and ensure effective collaboration. Conversely, highly skilled team members might require less coordination as they can manage their tasks independently. Additionally, assessing the performance of team members with expertise in unfamiliar domains can be difficult, complicating feedback and guidance.

Closely tied to *performance-oriented supervision* is the *monitoring quality* responsibility (Hales, 2005), which includes “*dealing with problems concerning customers, the work process, equipment and staffing, and implementing changes and improvements managing performance*” (Drent et al., 2022, p. 372). In MDTs, where team members bring unique skills and approaches, standardized quality metrics may be less effective, potentially overlooking discipline-specific performance. Ensuring a unified understanding of quality standards and harmonizing diverse views on what constitutes high-quality work can be challenging. Managers must, therefore, focus on facilitating communication and collaboration to maintain a consistent commitment to quality across the team.

According to Hales (2005), *looking after people and the work area* entails tasks and duties related to maintaining equipment, providing counseling and support to team members, identifying and nurturing talent, and stewardship of the work area. It is expected that supervising the work area may not pose many challenges or changes, but it might extend in a way that the manager needs to accommodate the specific requirements of various disciplines. However, providing counseling and support might become more difficult as team members may have diverse professional needs and aspirations based on their distinct disciplines, which are unfamiliar to the line manager. It is expected that the manager needs to put more time and effort into the needs of various disciplines.

Managers' responsibility for *translating strategy into operations* involves ensuring that the organization's strategic goals and objectives are effectively implemented at the operational level while also managing resources, controlling costs, and addressing any operational challenges that may arise (Hales, 2005). Considering this responsibility, translating organizational objectives into operational plans may be challenging when aligning diverse disciplinary goals and strategies, and it needs more focus and attention to align strategy with operations.

Considering *financial responsibility*, managers are responsible for several tasks, such as setting and managing budgets and controlling costs (Drent et al., 2022). In a multidisciplinary team, the diverse nature of expertise and the different requirements of each discipline may complicate the budgeting and cost control process. Managers may find allocating resources effectively across various disciplines with distinct financial needs and priorities challenging.

Additionally, line managers have a range of *business management responsibilities*, such as coordinating multiple teams, maintaining personnel records, and managing staff disciplinary matters (Hales, 2005). Overall, in a multidisciplinary team, where the manager lacks knowledge of every discipline, it is expected that managing these responsibilities will require more time, effort, motivation,

and skills. For example, coordinating a team with different disciplines will require adapting interpersonal and organizational skills, and managing disciplinary actions may involve more focus on addressing conflicts arising from diverse perspectives.

Lastly, in managing multidisciplinary teams, certain aspects of their traditional *people management* role (Purcell & Hutchinson, 2007) are anticipated to become more challenging or require adaptation due to multidisciplinary dynamics. For instance, identifying and developing talent becomes more complex, and managers may need to refine their selection criteria and development plans to accommodate the diverse expertise within the team. Moreover, different disciplines may have distinct motivators and expectations, which requires the manager to identify and implement varied motivational strategies and recognition systems that resonate with professionals from diverse backgrounds.

**2.4 Theoretical Framework: The Role of Managers in Multidisciplinary Teams**

As outlined in the literature, it is anticipated that the roles and responsibilities of project managers align closely with those defined for line managers by Hales (2005). While some differences may arise depending on whether line managers or project managers fulfill these roles, these variations are more a matter of context and focus than fundamental differences in responsibilities. Consequently, when discussing these roles and responsibilities based on Hales' research, they are collectively referred to as the roles and responsibilities of managers, encompassing both project and line managers.

Figure 1 illustrates the six key areas identified by Hales (2005), combined with the people management aspects highlighted by Purcell & Hutchinson (2007). These aspects will serve as a foundational framework for further exploration of managerial roles and responsibilities in MDTs. This framework will also facilitate the comparison between the roles and responsibilities of managers in general teams and those of managers in multidisciplinary teams.

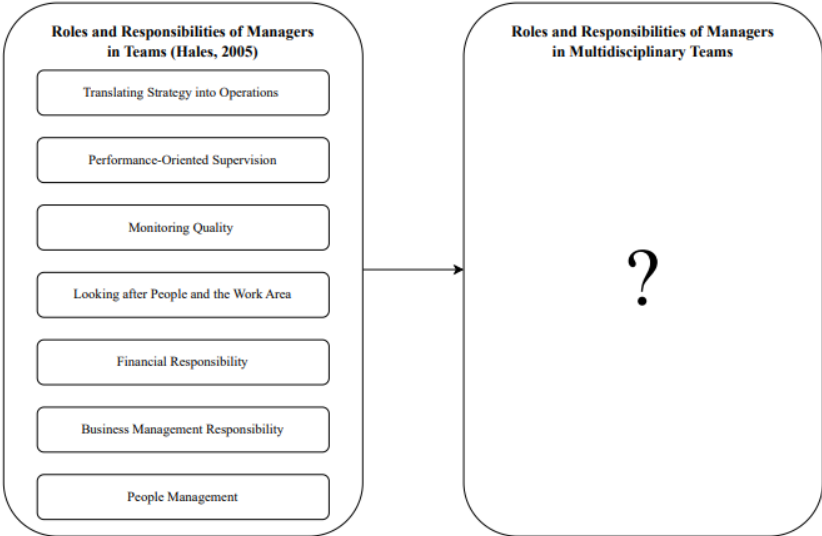


Figure 1 Theoretical framework

### **3. Methodology**

This chapter outlines the research design employed to explore the roles and responsibilities of managers in MDTs. Subsequent sections provide comprehensive insights into this study's research strategy. Following this, data collection strategy is outlined. Finally, the chapter discusses the data analysis procedure employed.

#### **3.1 Research Strategy**

The research strategy is an exploratory multiple-case study aimed at understanding a complex phenomenon: the roles and responsibilities of managers in MDTs. According to Yin (2003), a case study is *“an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”* (p. 13). Exploratory case studies allow for an in-depth exploration of a less-understood phenomenon (Baxter & Jack, 2008) in a real-world setting (Yin, 2003). They offer the capacity for a comprehensive and context-specific exploration of a phenomenon (Baxter & Jack, 2008; Yin, 2003), such as the role of managers in multidisciplinary teams. This research design was particularly suitable because, within organizations, MDTs often involve varied team structures and different types of managers occupying diverse positions. Consequently, the case study approach and analysis can provide valuable insights into the roles and responsibilities of managers in MDTs, revealing how these roles and responsibilities are influenced by varying team dynamics and organizational contexts.

Considering the study's exploratory nature and the need to align findings with a theoretical framework, both inductive and deductive approaches were adopted. This dual-method approach facilitated a thorough exploration of the roles and responsibilities of managers in multidisciplinary teams. Initially, deductive coding was employed using the theoretical framework depicted in Figure 1 to analyze the data. However, as the analysis progressed, it became clear that a broader perspective was necessary to accurately identify managers' roles and responsibilities in MDTs. Consequently, predominantly inductive coding was utilized to capture emerging themes and insights (Thomas, 2006) beyond the initial framework. Both approaches complemented each other: inductive coding uncovered new patterns and insights. At the same time, these open codes were subsequently linked back to the framework, integrating deductive analysis to compare the study's findings with Hales' (2005) insights into managerial roles and responsibilities in multidisciplinary teams.

Moreover, this study is classified as qualitative because interviews are used to collect the data. Qualitative research involves collecting data on participants' experiences, perceptions, and behaviors (Hammarberg et al., 2016; Tenny et al., 2022) and allows for an in-depth examination of individual and

group behavior, organizational dynamics, and the impact of interactions on relationships (Tehrani et al., 2015). Using a qualitative approach, the research provided insights into the experiences and behaviors of managers overseeing multidisciplinary teams. This was achieved by incorporating the managers' and team members' perspectives on the roles and responsibilities of managers in MDTs. This dual perspective gave a comprehensive understanding of the managerial roles within and across MDTs.

## **3.2 Data Collection Strategy**

### **3.2.1 Data collection tool**

The data collection tool used in this research was semi-structured interviews. The choice to conduct semi-structured interviews came from the advantages of this data collection method. A benefit of employing semi-structured interviews is the ability to gather information through open-ended questions, which facilitates an exploration of a participant's thoughts, feelings, and beliefs on a specific topic (DeJonckheere & Vaughn, 2019). Moreover, semi-structured interviews are considered an important data collection source within case studies (Yin, 2003). Additionally, Denscombe (2010) advocates using interviews to investigate complex phenomena. A drawback of conducting interviews is the potential for socially desirable answers, where participants might provide responses intended to present themselves in a more favorable light (Podsakoff et al., 2003). The researcher accounted for this by asking neutral questions, probing for additional information, and also including the team members' perspectives. In this study, using semi-structured interviews provided the advantage of exploring the perspectives, thoughts, and expectations of line managers and team members.

### **3.2.2 Interview and Case Selection Criteria**

Before the data collection started, the interviewees and cases were carefully selected based on specific criteria. According to Eisenhardt (1989), generating theory with empirical grounding typically involves analyzing between 4 and 10 cases. This study incorporated nine cases, precisely nine teams from three different organizations. The analysis focused on the management of the MDTs, with the organizations serving merely as the context in which the teams operated. Consequently, the study is centered on the team level. A crucial step in creating theories from case studies is case selection (Eisenhardt, 1989). In qualitative research, samples are not selected at random. Instead, cases are deliberately chosen to meet the specific requirements of the research (Eisenhardt, 1989). For instance, Yin (2009) emphasizes that cases should be purposefully selected to predict contrasting results. Given the importance of selecting suitable cases, specific selection criteria were established for this study, focusing on both the cases and participants.

First, the research focuses on the context of MDT, a team of professionals from two or more different disciplines working together toward common goals. Teams were selected based on their

multidisciplinary nature, ensuring that each team included at least two distinct disciplines, with a preference for those composed of three or more. There were no specific selection criteria for the disciplinary backgrounds, allowing for a wide range of disciplines to be included as long as at least two were represented; including more disciplines and different kinds of disciplines allowed for a richer capture of the MDT context. Secondly, this study's analysis level was the multidisciplinary team level. This necessitated that selected cases be multidisciplinary teams and that participants include managers tasked with overseeing these teams and the team members within them. For this level of analysis, the study required the inclusion of three individuals per multidisciplinary team and a total of at least five MDTs to ensure a sufficient number of cases and participants for drawing meaningful conclusions. Additionally, participants within the cases should be at least two distinct disciplines and a manager, to represent the multidisciplinary context within such teams comprehensively. In cases where there were only two participants per team, they needed to represent different disciplines. Moreover, it is essential to note that in this research context, the requirement for multidisciplinary teams did not mandate that they originate from the same organization. The primary focus of this study was to capture the multidisciplinary context, which could be achieved by including teams from different organizations.

As outlined, nine cases, e.g., MDTs were selected for this research, each meeting the established selection criteria. These teams were composed of members from two or more different disciplines. Table 1 provides an overview of the cases, their characteristics, and the number of interviews conducted for each case. In the table, the cases (C) represent the different MDTs, with several team members or a manager participating from each. "TM" stands for Team Member, "LM" for Line Manager, and "PM" for Project Manager. For example, in Case 1, two participants were interviewed: a team member, labeled as C1TM (indicating they are a team member in Case 1), and a Line Manager, labeled as C1LM. If multiple team members participated within a case, they are numbered sequentially. For instance, in Case 4, the team members are labeled C4TM1, C4TM2, and C4TM3.

As shown in Table 1, in some cases, the criteria were not fully met. All participants were part of a multidisciplinary team, which was essential given the focus on multidisciplinary environment. However, not every team included two individuals from different disciplines and one manager. In some instances, only one participant was involved, either a manager or a team member. Although it was preferable to capture both perspectives, valuable insights into the managers' roles and responsibilities were still obtained, indicating that having both perspectives was not always crucial.

Moreover, the table shows the range of disciplines and managers interviewed, selected based on their fit with the selection criteria and availability. Respondents were initially contacted through the supervisor's network, leading to interviews with two teams from Company A and Company B. Additionally, the researcher reached out to Company C through personal connections. After the initial interviews, participants were asked to recommend others who met the selection criteria, resulting in the

inclusion of six more teams via snowball sampling. While snowball sampling can lead to a biased sample, as participants tend to refer individuals similar to themselves, it also offers benefits. The sample size can grow significantly as participants refer others, and those referred are often more likely to engage due to the trust established through personal connections (Parker et al., 2019).

Company	Case (C)	Participants	Type of Manager in Team	Characteristics
Company A	Case 1: Marketing Department MDT	C1TM	Line Manager	Based in the Netherlands, the team comprises eight members from three main disciplines. TM1 has been with the team for eight years, while the manager has been in the position for one year and has extensive experience in multidisciplinary collaboration. The team consists of younger and older people, with ages ranging from 25 to 63, and there are huge differences stemming from the discipline's characteristics.
		C1LM		
	Case 2: System Engineering Department MDT	C2LM	Line Manager	
Company B	Case 3: Learning Program and Solutions MDT	C3TM	Line Manager	The number of team members is unclear. Similar to team 2, the line manager oversees teams working on various projects. The team operates in a busy environment and is considered mature due to their extensive experience working together.
	Case 4: Strategy and Knowledge Management MDT	C4LM	Line Manager	The number of team members in this team is unknown. The team comprises strategy specialists and program managers, specialists with diverse expertise overseeing and coordinating complex projects and programs. The manager of these specialists is a line manager.
		C4TM1		
		C4TM2		
		C4TM3		
	Case 5: Additive Manufacturing MDT	C5TM1	Project Manager	This small team comprises members from Company B and another company. The interviewee is a project manager responsible for managing the project and its diverse team members.
		C5PM		
Case 6: Learning and Development MDT	C6TM	Line Manager	This team is the same as Team 5 and comprises program managers with varied specializations. The manager of this team is a line manager who oversees these program managers.	
Case 7: Research and Development MDT	C7TM	Line Manager	This team is multidisciplinary, and the team members also manage an MDT. These team members have a line manager, but the line manager roles are somewhat blurred due to involvement and other focuses.	
Company C	Case 8: Project in Progress MDT	C8PM	Project Manager	This project team includes civil, mechanical, electrical engineering, and automation disciplines. The Project Manager oversees various project leads, who, in turn, manage their respective teams.
		C8TM1		
		C8TM12		
	Case 9: Project in the Construction Phase	C9PM	Line Manager / Project Manager	
C9LM	The Cost Department Manager (C9LM) participated in this project in the construction phase and served as a line manager, overseeing multiple disciplines within the cost department. The Project Manager (C9PM), who manages an MDT similar to the structure in Team 8, was also involved in the project.			

C = Case (multidisciplinary team)  
 TM = Team member  
 LM = Line Manager  
 PM = Project Manager

Table 1 Overview of the cases, subcases, and number of participants per case

Lastly, the interviews were conducted using Microsoft Teams to accommodate the geographical distance between the interviewer and interviewees, who were located in different cities, and their preference for doing the interview online.



### 3.2.3 Interview Strategy

While the interviews were conducted via Microsoft Teams, the researcher tried to create a conducive interview setting. To this end, the researcher joined the online meeting early to ensure a smooth start and actively listened during the interview. The researcher also closely monitored signs of confusion in the participants and rephrased questions as needed to ensure clarity. Moreover, the researcher conducted the interviews privately to minimize external distractions and ensure confidentiality.

Two distinct interview guides were developed for the interviews: one for managers and one for team members (see Appendix A, Interview Questions (English & Dutch)). These guides were designed to probe the concepts of roles and responsibilities in detail. The open-ended questions provided flexibility and encouraged participants to elaborate on their responses (Jamshed, 2014). According to Barribal and While (1994), the ability to explore participants' perceptions and the possibility of probing for information contributes to increasing the validity of research findings. When topics or responses lacked clarity, follow-up questions were asked to uncover additional context and deepen the understanding of the participants' perspectives. This contributed to making the collected data in this study more interpretable.

Besides creating a conducive environment, the interviews began with small talk and background questions to ease the conversation and build rapport with the participants. Rapport refers to establishing a smooth, positive interpersonal interaction with the interviewee. This rapport facilitates cooperation, making interviewees more likely to provide detailed information, and enhances trust, which can lead to more honest and open responses (Abbe & Brandon, 2013). This was followed by neutral questions about the challenges and benefits of working in an MDT. The other interviewer then posed questions before focusing on the specific questions related to this research. At the end of the interview, participants were asked what stood out the most to them, which often led to engaging discussions and additional valuable insights.

In this research, based on the literature, a "role" is viewed as the specific behaviors and actions that are expected from an individual based on their position within a team. For example, team members were asked, "*How would you describe the role of the line manager within your multidisciplinary team?*" while managers were asked, "*What is your role as the manager of the multidisciplinary team?*" One role identified for managers of MDTs was that of a supporter and facilitator.

Additionally, "responsibility" refers to the specific duties and tasks that managers perform in MDTs. This includes activities such as managing and supporting team members, making decisions about their development and performance, and overseeing the implementation of HR practices and maintaining team quality. This study aimed to explore and identify managers' responsibilities in MDTs by asking managers questions like: "*How do you monitor the quality and performance of the multidisciplinary team?*" and team members: "*How does the manager support the performance of*

*individual team members?*”. It was found that the responsibility of employee development was particularly important in these teams.

#### **3.2.4 Transcription Process**

A series of systematic steps were followed to prepare the data for analysis. The first step involved recording the semi-structured interviews using Microsoft Teams, contingent upon participants' consent. Recording the interviews ensures that the data collected is accurate and reliable as it allows researchers to capture the exact words and nuances of the participants, avoiding any potential errors or biases that may arise from relying solely on note-taking or memory (DiCicco-Bloom & Crabtree, 2006). The next step was transcription, which involves reproducing spoken words from the recordings into written text (Halcomb & Davidson, 2006). Transcribing interviews offers various advantages, including overcoming human memory limitations, facilitating a more accurate analysis of interviewee responses, reducing researcher bias through written objectivity, and enabling the reuse of data for future research (Alsaawi, 2014). Given occasional errors in the automatic transcriptions provided by Microsoft Teams, the researcher listened to the recordings and manually corrected the transcriptions to ensure accuracy. To maintain confidentiality, personal identifiers such as names, company names, and locations were removed from the transcriptions, which were then securely stored to ensure privacy.

### **3.3 Data Analysis**

Following the transcription of the interviews, data analysis was conducted to uncover and interpret themes relevant to answering the research question.

Initially, to determine the roles and responsibilities of managers in MDTs, the interview data was analyzed using the Gioia method, which involves a multi-phase inductive coding process to systematically identify and categorize themes and concepts from the transcribed interviews (Gioia et al., 2013). This analysis included both deductive and inductive coding. Deductive coding was used to align the data with the theoretical framework outlined in Figure 1, where quotes matching predefined theoretical concepts were categorized accordingly. Inductive coding, on the other hand, was employed to uncover and integrate new themes that emerged from the data itself.

Inductive coding, as described by Chandra and Shang (2019), involves analyzing raw data to develop concepts and themes. The process began with first-order coding, also known as open coding (Gioia et al., 2013), where each transcript of the interviews was reviewed to identify and label important quotes for this research, creating initial themes. This was followed by axial coding, which involved examining similarities and differences among the initial themes. Subsequently, related themes were merged to form second-order themes (Gioia et al., 2013; Magnani & Gioia, 2023). Finally, these second-

order themes were evaluated to see if they could be combined into broader aggregate dimensions (Gioia et al., 2013), which provided a comprehensive view of managers' roles and responsibilities in MDTs across the nine cases. Figure 2 illustrates a segment of the coding tree. The complete detailed coding scheme is presented in Chapter 4, Findings.

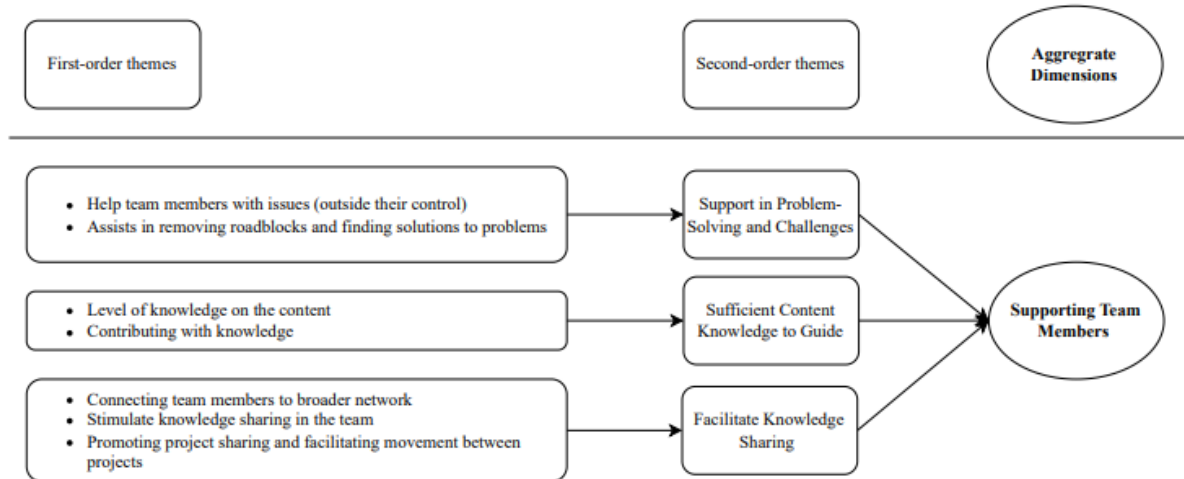


Figure 2 Coding Scheme Team 1

Once the concise coding scheme outlining the roles and responsibilities of managers in MDTs was developed, the next step was to apply Eisenhardt's (1989) case study methodology. This involved both within-case and cross-case analyses.

The within-case analysis involved closely examining and interpreting data within each individual case to uncover distinct details, patterns, and relationships specific to that context (Eisenhardt, 1989). By applying the coding scheme to each case, the analysis explored how managers navigate their roles and responsibilities within the unique context of each team. This provided valuable insights into how managers manage MDTs, the strategies they employ, and the aspects they prioritize within their teams.

Following the within-case analysis, a cross-case analysis was conducted to compare findings across multiple cases, as described by Eisenhardt (1989). This comparison aimed to identify overarching patterns and relationships by examining similarities and differences across the cases. The cases were compared on a team level to determine what managing MDTs depends on, understand the factors shaping a manager's involvement, and focus on specific aspects. Ultimately, this provided a broader perspective on what managing MDTs entails.

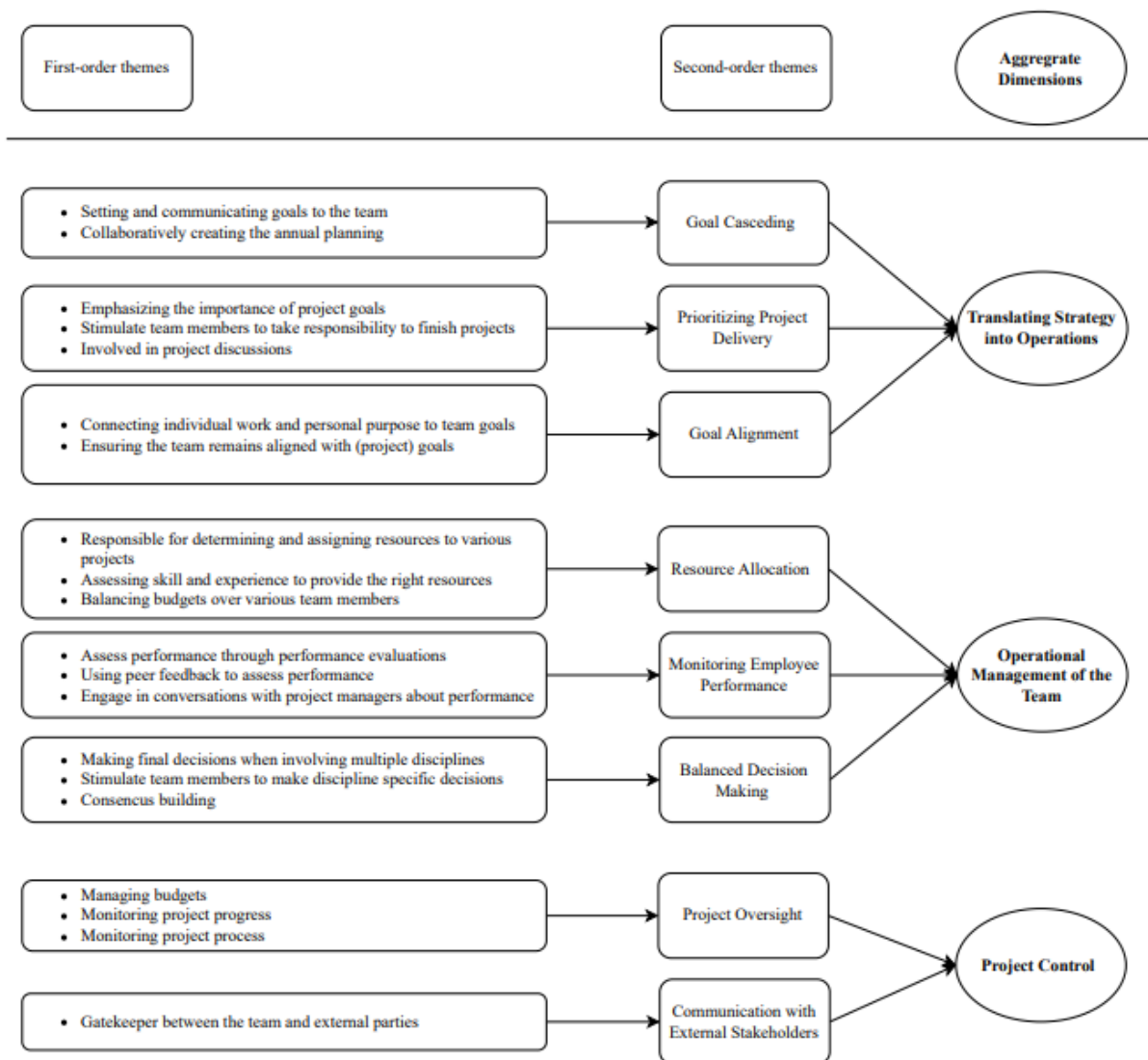
The coding process, within-case analysis, and cross-case analysis at the team level provided valuable insights for answering the research question. They enriched the study's findings by adding another layer of exploration of managerial roles and responsibilities.

## 4. Findings

This chapter presents the study's findings in a structured manner. First, the coding scheme based on the themes identified during the coding process is outlined. Next, the team structures and the roles and responsibilities of managers within each team are briefly described. Finally, a cross-case analysis compares the roles and responsibilities of managers across different teams, highlighting the factors and influences that shape the management of multidisciplinary teams.

### 4.1 Identified Role and Responsibilities of Managers in Multidisciplinary Teams

Upon analyzing the cases, the roles and responsibilities of managers across all MDTs were identified, as outlined in Figure 3. Building on this scheme, the following sections briefly present the findings on how these roles are executed within each specific MDT, the nine cases.



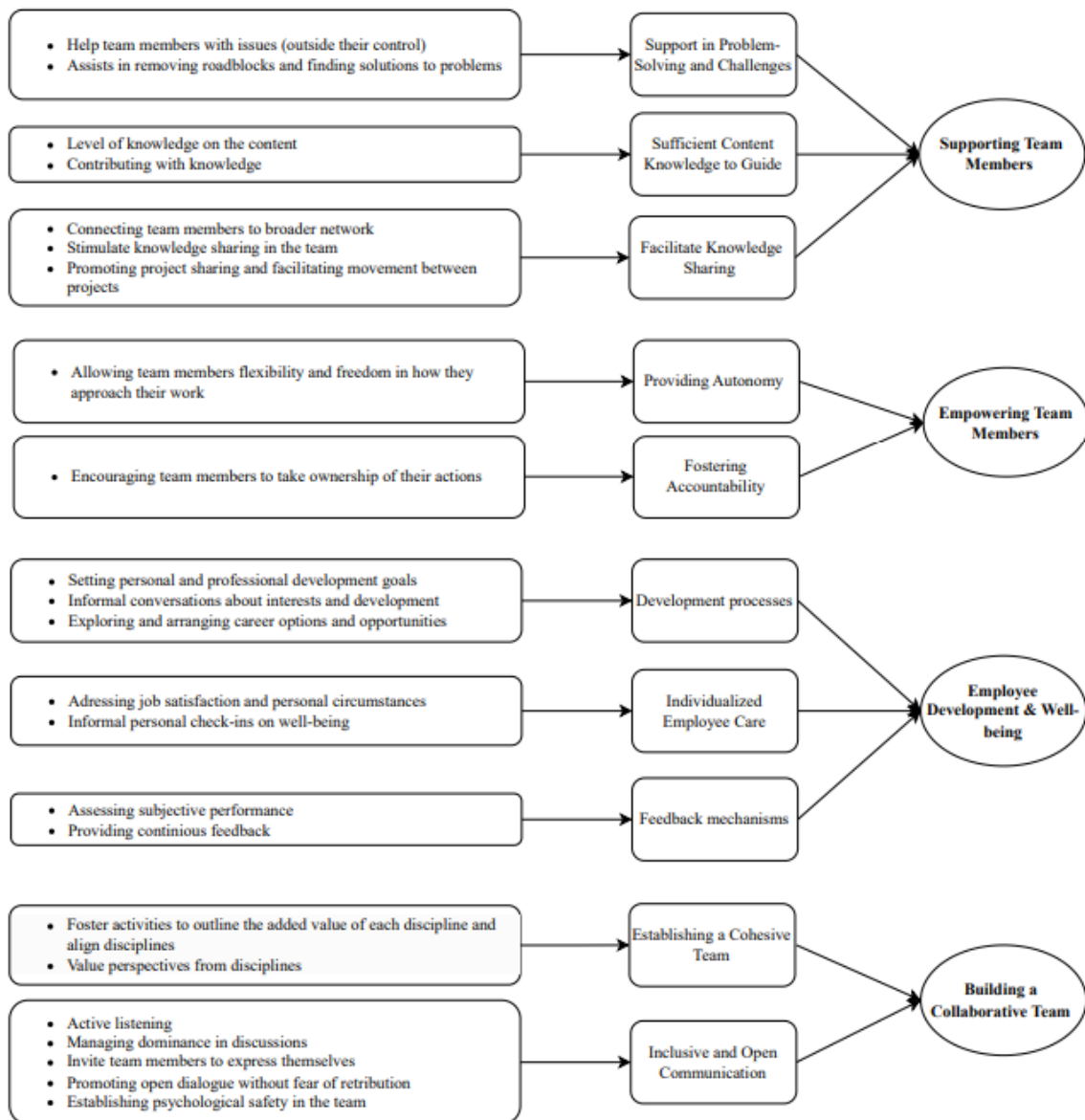


Figure 3 Managers' roles and responsibilities in MDTs

## 4.2 Within-Case Findings

Table 1 indicates that some cases operate within the same company. In this context, the organization serves as a unit in which multiple cases are presented. Therefore, a brief overview of each organization and its specific cases will be provided, followed by an explanation of the related findings in each case.

### 4.2.1 Findings Case 1 and Case 2

Case 1 and 2 operate in a multinational company (company A) that designs and builds electrical systems and provides services for aerospace, defense, transportation, and security markets. The company

operates in over 50 countries and employs more than 80,000 people. Known for its advanced engineering and innovative solutions, this company fosters a culture of innovation, collaboration, and excellence.

Case 1 is a Marketing Department MDT that comprises eight members from three distinct disciplines: competitor market intelligence, operational business development, and marketing. The manager oversees these employees from these various disciplines. The team operates organically, with members continuously collaborating and integrating their diverse expertise to develop marketing strategies.

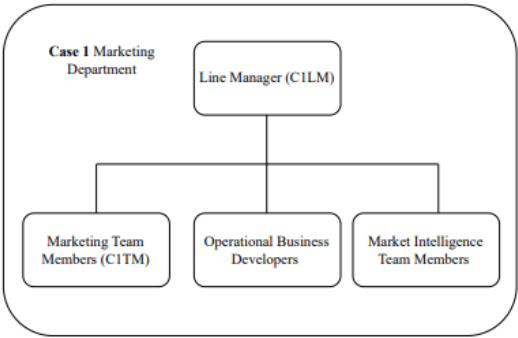


Figure 4 Team structure case 1

This team operates permanently and collaboratively, with members working together consistently towards marketing solutions. Consequently, the manager of this team is classified as a line manager due to the ongoing, integrative nature of the team's work. Figure 4 illustrates the team's structure and the manager's position.

Case 2 involves a System Engineering Department MDT of twelve engineers and architects with diverse specializations. The team is part of a more significant segment focused on integrating systems for naval solutions. Team members work on different projects under various project managers, leading to less continuous and organic collaboration. While the department is permanent, the dynamics are project-driven. The department manager oversees the multidisciplinary team, focusing on the department's overall function rather than specific projects. The department manager is considered a line manager for individuals who fall under different project managers.

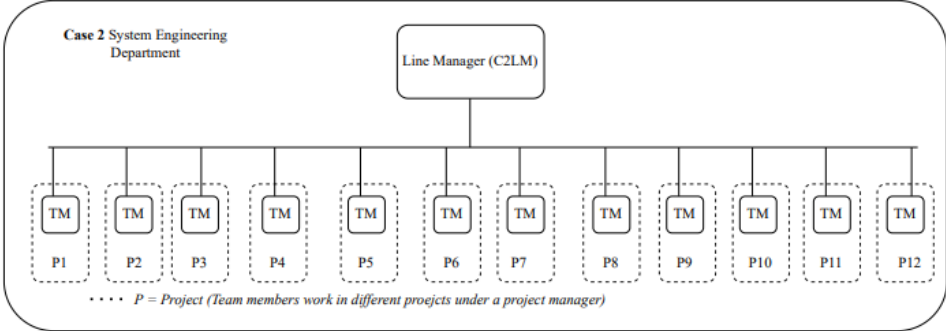


Figure 5 Team structure case 2

**Case 1 Line Manager Roles and Responsibilities**

Based on the analysis of the interview with the manager and a team member of this MDT showcases that due to the team's organic and permanent collaboration, the line manager, to some extent, is involved in translating strategy into operations and operational management of the team and has daily contact with the team members. However, the manager's approach is notably hands-off, acting primarily as a facilitator and supporter; the manager emphasizes autonomy, development, and collaboration within the team. Although progress is monitored to stay informed and address issues early, performance evaluations

are tailored to the distinct disciplines within the team, reflecting their unique contributions. In translating strategy into operations, the manager sets the overall goals and focuses on connecting individuals in the team towards the goals but allows team members to determine how best to achieve them, facilitating the process without micromanaging. This approach empowers team members to take ownership of their work and make decisions that align with their specialized expertise. While providing freedom in decision-making, the manager focuses on building consensus by ensuring that each discipline listens to each other and engages in sessions to outline the added value of each discipline for inclusiveness. The manager's trust in team members' expertise drives this empowering approach, emphasizing support and availability for guidance when needed. A team member underscored the importance of this trust when managing specialists:

*"If you have a department full of specialists, for example, then you do not need a manager who is going to tell the specialist how to do the work. It is important to have a manager willing to listen to their needs." (CITM)*

Given this team's diverse composition, the manager is key to encouraging contributions from all team members. The manager actively invites input from everyone, manages dominant voices, and ensures that all perspectives are heard. Additionally, employee development and well-being are key focuses, with the manager offering tailored support aligned with individual career goals and personal needs.

### ***Case 2 Line Managers Roles and Responsibilities***

In this MDT and managing the people in the team, the line manager's role is primarily people-focused, given that team members work on different projects under various project managers. As part of translating strategy into operations, the manager aligns the team with project goals to drive success. Operationally, the manager is responsible for resource allocation, ensuring the right team members are assigned to projects based on their skills and fit. While not being involved in the content, the manager is responsible for assessing performance; performance evaluations are conducted through peer feedback and discussions with project managers, as the line manager does not directly oversee daily tasks. Moreover, the manager is constantly available to support team members working in different projects by facilitating knowledge sharing and connecting them with relevant experts to address project-related issues. This hands-on approach ensures team members receive the guidance and resources they need, even from a distance.

*"I am not involved in helping them deliver the content... but I can help them address the questions with others who have more knowledge about the content than myself." (C2LM)*

Additionally, the manager of this MDT is responsible for and emphasizes employee development and, therefore, explores growth opportunities. However, the manager balances immediate project needs with

long-term development and tailors development to individual preferences. The manager recognizes that younger employees prioritize growth more than older team members and that engineers often want to focus on immediate tasks rather than ongoing development.

**4.2.2 Findings Cases 3, Case 4, Case 5, Case 6 and Case 7**

Case 3 to 7 operate in a company (company B) that is a leader in the semiconductor industry and operates globally with research, manufacturing, and support facilities spread across various countries. Due to this international presence, company B serves a global customer base. With over 39,000 employees, the company strongly emphasizes research and development to maintain its technological leadership and advance semiconductor manufacturing processes.

Case 3 is a multidisciplinary team dedicated to creating educational programs and solutions, comprising specialists such as learning experts, learning business partners, user experience designers, and software developers. Similar to Case 2, this team, while being permanent, there is less continuous and organic collaboration as team members work on different projects under various project managers. Considering this, the manager in case 3 is considered a line manager.

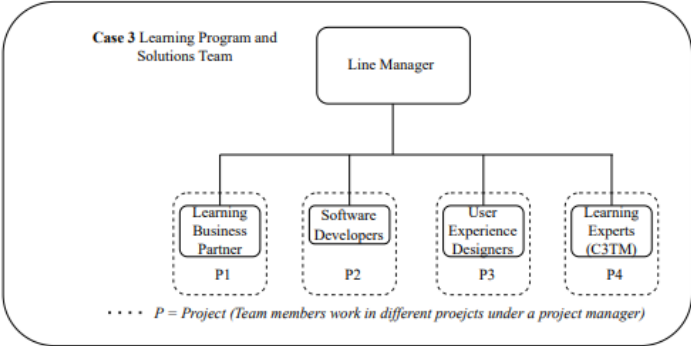


Figure 6 Team structure case 3

Figure 6 illustrates the team's structure and the manager's position.

Case 4 is a Strategy and Knowledge Management MDT consisting of strategy specialists and program managers from diverse disciplines focused on learning and development initiatives across multiple programs. The team operates hierarchically and works together organically and permanently. The manager oversees the strategy specialists and program managers, who, in turn, manage their multidisciplinary teams. Figure 7 shows the team structure. The manager of this team is considered a line manager because the team is integrated and organically related.

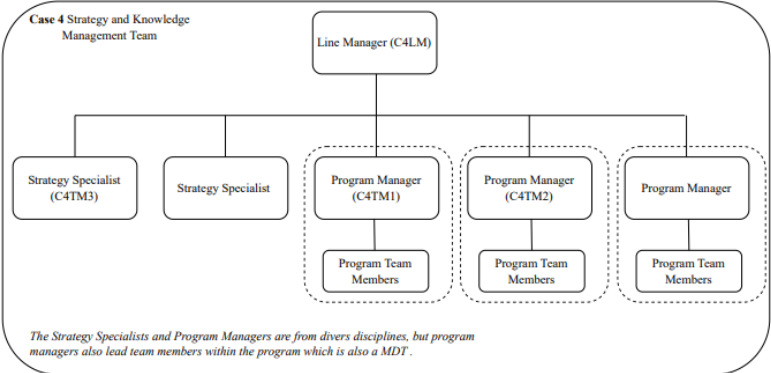


Figure 7 Team structure case 4

Figure 7 shows the team structure. The manager of this team is considered a line manager because the team is integrated and organically related.

Case 5 involves a multidisciplinary project team focused on creating and implementing a learning architecture for additive manufacturing (3D printing) to enhance employees' skills from



beginner to proficient levels. The team consists of members from diverse disciplines, including educational science, engineering, and technical management, as well as participants from another organization, Company X. The project manager oversees the

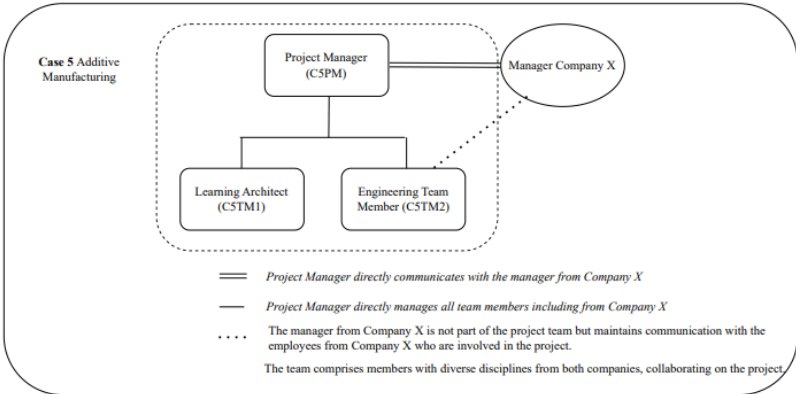


Figure 8 Team structure case 5

entire project and is responsible for all team members while occasionally being in contact with the manager from Company X. However, the manager from Company X only interacts with team members from Company X. Figure 8 illustrates the team's composition, the managers' roles, and their interactions, this study focused on the project manager.

Case 6 is an MDT responsible for various learning and development programs within the R&D division. The team comprises Program Managers specializing in learning, solution design, business partnerships, and content development, each managing their own program teams. The manager directly supervising this team of Program Managers is considered a line manager in this study, being responsible for ongoing oversight and coordination to ensure effective collaboration and execution across programs. From a team member's perspective, the line manager roles and responsibilities is outlined. Figure 9 illustrates the team structure.

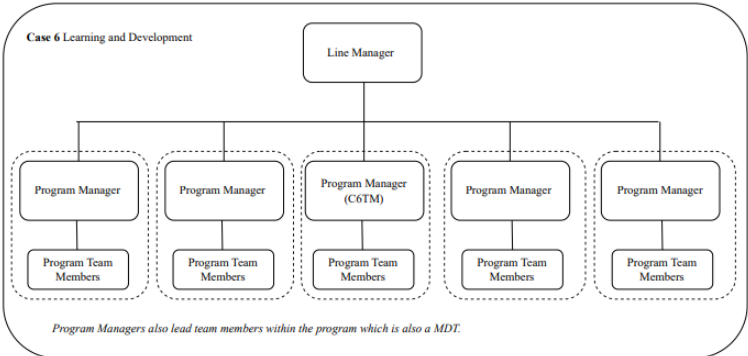


Figure 9 Team structure case 6

Case 7 is an MDT focused on research and development. It aims to apply agile methodologies to create new products and help individuals become better product owners and scrum masters. This team comprises various disciplines working together, including learning solutions designers, learning architects, operational supporters, and external suppliers. This team works permanently and organically together, making the manager a line manager in this study. From a team member perspective, the line manager's role and responsibilities

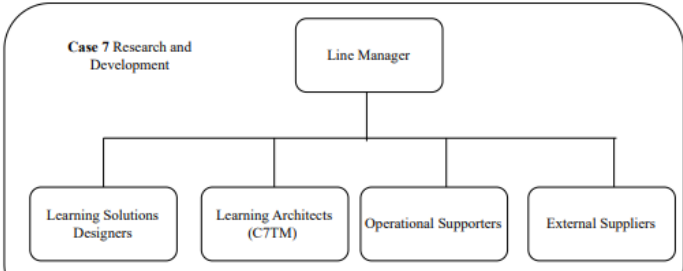


Figure 10 Team structure case 7

are outlined; Figure 10 illustrates the team structure.

### ***Case 3 Line Managers Roles and Responsibilities***

The analysis highlights that the line manager of this team is somewhat responsible for operational management, focusing on resource allocation rather than content. This includes prioritizing projects, assigning time and resources, and aligning team members' skills with project needs. While not directly involved in project content, the line manager supports team members by addressing issues they experience in projects, facilitating knowledge sharing through connecting them with the broader network, and facilitating access to relevant information. The manager also emphasizes employee development through performance dialogues, aiming to understand individual development goals, career aspirations, and self-perceptions to enhance performance and arrange development opportunities. Despite these efforts, the support provided tends to be reactive rather than proactive, reflecting the team's busy environment and high level of autonomy. An important quote illustrating this reactive approach is:

*“Here, everyone is so busy. It usually goes like, 'What are you doing? How is it going? Is everything fine? OK. Do you want something?' If I say yes, then it is arranged. However, if I do not ask, nothing will probably happen.” (C3TM)*

However, a need is expressed for more proactive involvement from the line manager because managers are in the position of having an overview and thereby can see opportunities team members themselves might not see.

### ***Case 4 Line Managers Roles and Responsibilities***

The analysis highlights that the manager mainly focuses on supporting and empowering team members while fostering a collaborative and growth-oriented environment. A key responsibility is translating strategy into actionable goals and communicating them. However, the manager goes beyond setting objectives and prioritizing alignment through exercises that build a shared understanding and connect individual purposes with team goals, as emphasized in the following quote:

*“If we do not have a shared agreement on what North is, we are all going to move in the direction of what we think North is, and then somewhere down the line, find out what are you even doing there? So we are supposed to be heading in this way, and that is when you know the interesting conversations start to happen where everybody feels like no, but we agreed on what The thing is that we are doing and how we are going to do it. Suddenly, everybody is going off, doing other things. How is that helping? So having that sense of purpose is a sense of direction, and a sense of purpose is the core of anything.” (C4LM)*

From this focus, the manager builds a collaborative team by outlining the added value of each team member and fostering open communication by creating openness to discuss any topic without fear of consequences.

The manager's strategy involves empowering team members by stepping back, trusting their expertise, and remaining available for guidance when needed. Support is seen in assisting with challenges and connecting team members to the network to receive information. Moreover, the manager emphasizes personal and professional growth, offering development opportunities and prioritizing well-being through open conversations about job satisfaction and role fit. Instead of closely managing performance, the manager relies on the team's understanding of quality within their fields. Feedback is primarily given in real-time, focusing on strengths and areas for improvement to ensure consistent support and development.

#### ***Case 5 Project Managers Roles and Responsibilities***

The analysis highlights that the project manager's primary role is to provide guidance and support while maintaining overall project control. Despite being responsible for steering the project and ensuring resources, the team operates independently. It is self-managing, with the manager focusing on translating strategy operations by communicating clear goals and continuously reinforcing them. This approach is crucial given the team's composition with team members from diverse backgrounds and diverse organizations, which require constant alignment for creating a collaborative team:

*“And that is not easy because everybody with another DNA has another opinion on this question, which was also the case. Yeah, you have to convince people to adopt another way of thinking. And that is not easy. It is not easy to bring people to another way of thinking. You must unite other worlds to reach that goal, which is not easy.” (C5PM)*

Due to the self-managing character, the manager emphasizes empowerment by trusting team members to handle tasks and make decisions while providing support by being available for questions. Also, the manager does not strictly assess performance but provides direct feedback to improve performance.

#### ***Case 6 Line Managers Roles and Responsibilities***

The manager's role in this MDT centers around a supportive and empowering approach that grants significant autonomy to team members while focusing on three key aspects: translating strategy into operations, focusing on employee well-being, and supporting team members. The manager effectively brings the team together by clearly communicating a common goal. Personal development is fostered through one-on-one conversations that address individual challenges and growth opportunities. Additionally, the manager removes obstacles when external teams or issues cause delays, ensuring smooth progress and collaboration. The manager empowers the team by granting significant autonomy, allowing members to self-manage while remaining available for guidance and problem-solving. Open communication is emphasized to keep everyone informed and engaged, facilitating contributions from all team members. However, despite this supportive approach, the manager uses strict performance measures to assess performance, leading to dissatisfaction among team members, as these often overlook the contributions of less visible individuals.

### Case 7 Line Managers Roles and Responsibilities

In this case, the line manager's role closely mirrors that of other roles, characterized by a supportive and empowering approach. The manager provides team members with significant autonomy in their work while remaining available for support and guidance when needed. Additionally, the manager translates strategy into goals by clearly communicating goals, aligning disciplines, and fostering a collaborative environment centered on shared objectives. Additionally, the manager emphasizes personal development, engaging in conversations to support and facilitate team members' growth.

The manager's hands-off approach, combined with their readiness to assist, is highly appreciated by the team. The team member highlighted that, in a MDT, managing according to the intrinsic motivation model—focusing on mastery, purpose, and autonomy—is essential, which this manager is focusing on. The following quote captures the value of this approach:

*“When a manager gives me the autonomy to shape my tasks and collaborate with my team, it stimulates me. A manager who sets a clear vision by saying, ‘This is where we need to end up together,’ but leaving the path to achieve it up to us helps. Additionally, focusing on mastery by supporting personal development and skill enhancement is crucial as it makes me feel better about my work and helps me grow in my role.” (C7TM)*

### 4.2.3 Findings Case 8 and Case 9

The company in which case 8 and 9 operate is a diversified construction firm based in the Netherlands. It specializes in multiple construction industry segments, including civil engineering, water technology, building and construction, and maintenance and renovation.

Case 8 is a project team encompassing civil, mechanical, electrical engineering, and automation disciplines. The project manager oversees the entire project, managing project leads from various backgrounds who, in turn, manage team members within their specific areas of expertise. Interviews were conducted with the project manager to explore their role and responsibilities and with two project leads—one from mechanical engineering and one from civil engineering—from which insights are into the project manager's role. This hierarchical structure ensures that the project manager has clear communication and effective control over all aspects of the project, as depicted in Figure 11.

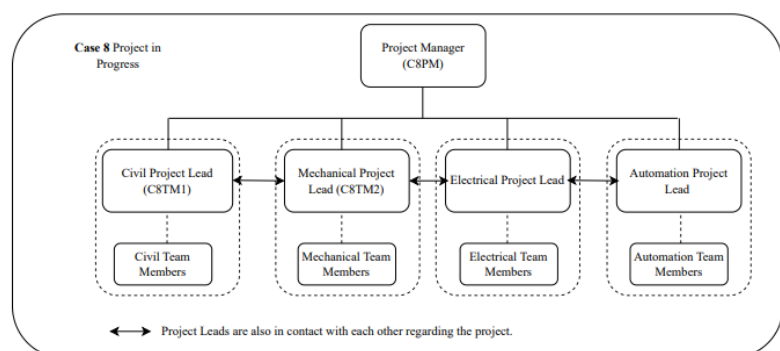


Figure 11 Team structure case 8

Case 9 is a team in the project construction phase, which involves a department involved in the construction phase of projects, comprising cost estimators, planners, and secretarial staff. These employees work together continuously within the same team, distinguishing them from temporary project teams. Consequently, the department manager is considered a line manager in this study. Figure 12 illustrates this departmental structure and the position of the line manager.

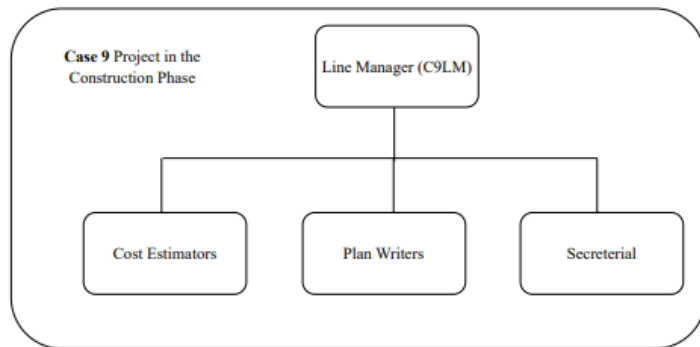


Figure 12 Team structure case 9

### **Case 8 Project Managers Roles and Responsibilities**

In this multidisciplinary team, the project manager plays a supportive and facilitating role, balancing technical project management with managing a diverse group of specialists. The manager has total project control and needs to ensure the project meets its deadlines, budget, and quality standards while navigating the complexities of integrating different disciplines. The manager focuses on translating strategy into actionable goals, maintaining progress through regular updates, and overseeing both technical and interpersonal aspects of the project. In overseeing the team members in the team, the manager emphasizes empowering team members and providing autonomy considering team members themselves know how to build the construction. Additionally, the manager focuses on establishing a collaborative team by fostering an open and safe space for addressing concerns and diverse viewpoints, besides engaging in activities such as coaching sessions to enhance team communication and alignment. Overall in supporting, the manager is available for higher-level problem-solving, which means project leads can escalate problems which are out of their control. And considering the diverse disciplines and every discipline having own goals, the manager needs to balance individual goals with overall project objectives:

*“But there are decisions to be made that might not be in the best interest of the civil project manager or in the better interest of the mechanical engineer project manager. So you all have to weigh which solution is best for the project, and the challenge there is that you need a team who depends on each other but is also very keen on doing their role in the best way. So, you have to develop your place, on the other hand, and move along when it is better for the project. That is always a challenge to keep that in balance.” (C8PM)*

The manager focuses on the development and engages in conversations on development. However, HR actually arranges the opportunities, and team members themselves have to keep track of the progress.

In this project team, the manager does not really assess performance, instead provides direct feedback in the moment to address behavior and improvements.

### ***Case 9 Line Managers Roles and Responsibilities***

The line manager's approach in this multidisciplinary team is notably development-oriented, emphasizing individual career growth through annual development conversations and frequent informal check-ins. This method supports ongoing personal and professional development dialogue, strongly focusing on well-being. The manager is also accessible and empathetic, choosing to work alongside team members rather than from a separate office. This proximity fosters personal connections and direct communication, facilitating immediate support and intervention. As the manager explains:

*“I want to be in the same room as the people. That is what I want and what I like. I want to be between them so I always hear what is happening. You know they can ask me directly. I can ask them directly, no problem.” (C9LM).*

Transparency and openness are key elements of the manager's approach. The manager builds trust by sharing personal challenges, encouraging team members to do the same, and creating a supportive and cohesive team environment. Additionally, the manager is responsible for delegating tasks, ensuring accountability, and fostering a culture of ownership. Mistakes are viewed as opportunities for learning, and the manager maintains a continuous improvement mindset. Finally, the manager emphasizes the importance of goal alignment, navigating the challenge of keeping the team focused on project objectives despite the diverse individual goals and disciplines involved.

## **4.2 Cross-Case Findings**

This study focuses on the management of MDT, specifically examining the roles and responsibilities of managers in these settings. The coding scheme, illustrated in Figure 3, captures the managerial roles and responsibilities in MDT identified across the nine cases studied. These roles encompass strategy translation, operational management, project control, supporting employees, empowering team members, development, and building a collaborative team. Additionally, the within-case analysis briefly provided insights into the roles and responsibilities within the specific teams with diverse structures. The following section combines the coding scheme and the within-case analysis to outline the management of MDTs and how certain aspects and factors shape the management of the MDT.

The analysis of the cases reveals that a team's structure significantly shapes a manager's focus, roles, and responsibilities. In teams where collaboration is organic and permanent, such as in Case 1, Case 4, Case 6, Case 7, and Case 9, line managers tend to prioritize relationship-building, empowerment, supporting employees, and fostering a collaborative environment. Line managers translate strategy into operations by ensuring that every team member understands the shared strategic direction and how their

specific roles contribute to the overall objectives. In these cases, managers build team collaboration and relationships by aligning individual contributions with collective goals, engaging in activities to show the added value of each discipline, and promoting open communication to discuss topics safely. This focus on empowerment arises because team members are highly specialized experts who often possess more in-depth knowledge about their work than the manager does. Allowing them the freedom to make decisions and take ownership ensures that their expertise is fully leveraged while fostering a sense of responsibility and motivation within the team. Moreover, these managers prioritize personal and professional development, frequently engaging in discussions to support growth and well-being and arrange development opportunities accordingly, such as growing into another role or training. Their management approach is often hands-off, allowing team members to self-manage while remaining available for guidance when needed to leverage the expertise of team members.

In contrast, in teams where members work on different projects or operate in less cohesive environments, as seen in Case 2 and Case 3, line managers focus more on people-related responsibilities rather than being involved in the content, empowering and establishing collaborations. These managers prioritize employee development and provide support across projects to ensure team members have what they need to succeed and feel supported, even without the manager's direct involvement. Additionally, there is a strong emphasis on operational management. In this context, operational management involves focusing not on the technical or content-related aspects of the team's work but on tasks such as efficiently allocating resources, prioritizing projects, and aligning team members' skills with the needs of each project. Additionally, performance management plays a crucial role in these teams, where managers assess employee performance by gathering feedback and engaging in discussions with project managers. Managers in these settings offer support from a distance, primarily by connecting team members with relevant resources and experts while less involved in day-to-day tasks. Given the dispersed nature of these teams, this support tends to be more reactive, addressing issues as they arise rather than proactively managing potential challenges.

In project-based teams, as seen in Case 5 and Case 8, managers focus on executing specific projects with clear timeframes and objectives. The emphasis is placed on project control and goal clarity, ensuring that all team members work towards a unified objective despite their diverse backgrounds. Moreover, the managers play a crucial role in establishing a collaborative team, therefore focusing on fostering safety in discussions. While the structured nature of these projects requires a degree of control, the managers also empower their teams to self-manage. They provide necessary guidance and facilitate problem-solving when challenges arise, balancing giving autonomy and maintaining oversight to leverage expertise and signal issues early. One of the main challenges project managers face in these multidisciplinary teams is navigating the opinions and focuses of different disciplines; for the project focus, the manager sometimes intervenes in decision-making. Project managers work to align these distinct disciplines with the broader project objectives while also ensuring that team members

understand each other's goals, focuses, and areas of expertise. They achieve this by clearly communicating a shared purpose and direction, fostering mutual understanding and collaboration.

While team structure shapes MDT management, managers across different team types share common priorities, such as translating strategy, fostering collaboration, empowering team members, providing support, and guiding personal and professional development. However, the emphasis on specific roles and responsibilities shifts depending on the team structure, necessitating tailored management approaches. Additionally, the analysis highlights that several other factors, such as organizational culture, company characteristics, employee expertise, and specific operational demands, shape managerial roles and responsibilities.

For instance, the emphasis on supporting and empowering employees across all teams stems from these teams operating in highly complex and demanding environments, tackling intricate tasks and assignments. This context necessitates the integration of multiple disciplines for effective project and task execution. Since the team members are highly educated experts in their fields, managers focus on empowering and supporting them without limiting their expertise through strict management. Managers recognize that these specialists are well aware of the best methods and strategies in their domains, allowing them to exercise their expertise freely while still receiving the necessary support in case of challenges. This support entails helping break barriers, remove obstacles, and support them in difficulties to ensure smooth processes in the team. The analysis reveals that managers hold a high level of trust in their employees' capabilities, which is crucial for empowerment. This trust enables managers to step back and grant autonomy, confident that the team members can effectively navigate their work.

The analysis showcases different approaches across teams regarding performance management. Managers, in all cases, engage in performance management. However, approaches vary significantly, whereas some are more connected to the operational management of the team due to stricter evaluations, and some are focused on development based on feedback. The manager in case 1 uses discipline-specific evaluations tailored to individual roles, recognizing each member's unique contributions and working styles. This nuanced approach values the distinct dynamics of different disciplines and ensures fairer assessments. Conversely, in case 6, the manager uses performance metrics that do not account for individual differences, leading to dissatisfaction among team members who feel their efforts are overlooked. This contrast highlights the importance of adapting performance evaluations to team needs for more effective outcomes. Considering the team structure where team members work under different projects, the manager in case 2 combines self-assessment, peer feedback, and input from project managers to evaluate performance comprehensively without being involved in the content. Similarly, the manager in Case 3, who was also not involved in project details, focused on subjective measures like skills and self-perception, emphasizing development over strict monitoring. These managers have effectively tailored their performance assessment methods to suit their teams' unique structures and



needs. Whereas in the other Cases 4, 5, 7, 8, and 9, performance management relies on real-time feedback rather than formal evaluations. These managers prioritize continuous, transparent feedback, fostering ongoing development and precise improvement.

Fostering employee development is a key responsibility across all cases, with a strong emphasis on personal and professional growth. This focus on development is likely rooted in the organizational cultures, where continuous improvement and learning are core values. Although development practices are similar across cases—setting development goals, holding development conversations, and offering growth opportunities such as role changes—there are distinct variations. Development is closely tied to employee well-being in Cases 1, 4, and 9. In these cases, managers address job satisfaction and personal circumstances to ensure that employees are in a good place. For instance, in Case 1, where the organization operates internationally, the manager is attentive to employees who may be less willing to travel due to personal reasons. In such cases, the manager seeks solutions like alternative roles that better align with the employee's current situation. In Case 2, the manager tailors development approaches based on the disciplines inherent to the MDT. The manager signals that older employees are less interested in development than younger ones and recognizes that engineers in the team prefer focusing on technical work rather than constant development activities. As a result, the manager adopts a more flexible approach, stepping back when necessary to respect these preferences. In contrast, in Case 3, development opportunities are available, but the manager takes a more reactive stance. Employees are expected to signal their interest and define how they want to develop. This reactive approach is shaped by the fast-paced environment in which the team operates, limiting the manager's ability to drive development initiatives actively. These variations highlight how organizational culture, team composition, and operational demands influence managers' approaches to employee development, demonstrating that effective development strategies must be contextually adapted. The analysis shows that employees are highly motivated to develop themselves, mainly due to their specialized expertise and a strong desire for continuous improvement.

In most cases, except for Case 2 and Case 3, establishing open communication and fostering a safe environment are key priorities for managers in building strong team collaboration. These managers create spaces where all viewpoints are welcome without fear of negative consequences, promoting transparency, approachability, and psychological safety through leading by example. This focus seems crucial given the teams' diverse disciplines, which naturally bring varying perspectives that must be openly discussed and integrated. In Case 1, the manager strongly emphasizes inclusivity and safety, influenced by Company A's commitment to these values in the culture. The manager encourages open dialogue and participates in sessions to overcome communication barriers, supported by company-provided tools. In contrast, in Case 2 and Case 3, where team members work on separate projects and do not collaborate closely, there is less focus on fostering open communication and psychological safety.

Additionally, a key responsibility across all these teams is supporting team members by facilitating knowledge sharing. Team members highly value a manager who can connect them to the right people and resources, enabling them to access critical information and knowledge relevant to their work. In all cases, managers are involved in connecting team members to a broader network because it provides valuable insights. However, the focus of this knowledge sharing differs across the cases. In Case 1 and Case 2, the emphasis is more on facilitating knowledge exchange within the team, encouraging collaboration among team members to enhance collective expertise. In Case 8, the focus shifts slightly to connecting team members across the project, ensuring alignment and shared understanding across different workstreams. In contrast, in Cases 3 to 7, managers prioritize connecting team members to the broader organizational network rather than limiting connections within the team or project. This approach is crucial because Company C operates as a networking organization. Here, managers must leverage the organization's extensive network to link team members with individuals beyond their immediate circles. This connection is essential for accessing valuable information, proven practices, and existing resources in other contexts. By doing so, managers in cases 3 to 7 facilitate knowledge flow across different areas, allowing team members to benefit from insights that have been tested and refined elsewhere, ultimately enhancing the effectiveness of their work.

While diverse team composition influences development in Case 2, a different challenge emerged in Case 1, where encouraging contributions from all team members stood out as a particularly important task for the manager. In this team, the mix of a wide age range, from 25 to 63, combined with dominant disciplines, created a potential discussion imbalance. Unlike in other cases, where this was less of an issue, the manager in Case 1 had to take on the active role of managing discussions to ensure that all voices were heard. This involved steering conversations, giving space for less dominant members to contribute, and attentively listening to all viewpoints. By prioritizing this approach, the manager could balance the influence of dominant disciplines and foster a more inclusive environment. This emphasis on equal contribution was specific to this team and did not emerge as a critical responsibility for the managers in the other cases.

A final difference across the cases in managing MDTs involves translating strategy into operations. Generally, the analysis shows that translating strategy into operations is crucial in these teams to align members from diverse disciplines with varying goals, knowledge, and focuses. By connecting these team members, results can be achieved. Most managers achieve this by setting clear goals, emphasizing their importance, and aligning team members through discussions and exercises. However, a notable deviation occurs in Case 6, where the manager sets the goals without further alignment efforts. The analysis suggests that this more hands-off approach is due to the maturity of the team, members who have worked together for a long time, and already being well-aligned. In contrast, translating strategy into operations is an ongoing focus in Case 5. Here, team members come from different organizations with distinct priorities and working methods. As a result, the manager constantly

reinforces goals and explains how everyone's work aligns with the overall strategy. This continuous alignment is crucial for ensuring that team members stay focused on common objectives despite their diverse organizational backgrounds.

Overall, the analysis showcases that MDT management includes key responsibilities, including translating strategy into operations, project control, operational management, supporting team members, empowering them, fostering employee development, and building a collaborative team. However, the emphasis on these responsibilities varies based on team structure, manager roles, and factors such as company culture, team composition, and team characteristics. Despite these variations, the core roles of empowering and supporting team members are consistently crucial for effective management in these settings.

## 5. Discussion

This study addresses a gap in the literature regarding the role and responsibilities of managers in MDTs. Previous research has focused on the role of managers in more homogenous teams, overlooking the dynamics that arise in teams composed of individuals with diverse expertise and backgrounds. Consequently, this research delved into understanding the roles and responsibilities of managers in multidisciplinary teams, explicitly aiming to answer the research question: “*What are the roles and responsibilities of managers in managing multidisciplinary teams?*”. This chapter begins by comparing the roles and responsibilities of managers in teams according to Hales (2005) versus MDTs. The chapter then discusses the theoretical and practical implications of these findings, then examines the study's limitations.

### 5.1 Comparison of Managerial Roles and Responsibilities in Teams vs. MDTs

Figure 13 outlines the roles and responsibilities of managers in general teams compared to managers in MDTs, outlined in this study. The figure highlights that some responsibilities in MDTs overlap with those found in more traditional teams, as described by Hales (2005). While the findings indicate multiple factors shaping managers roles in teams, the comparison is based on the overall findings found.

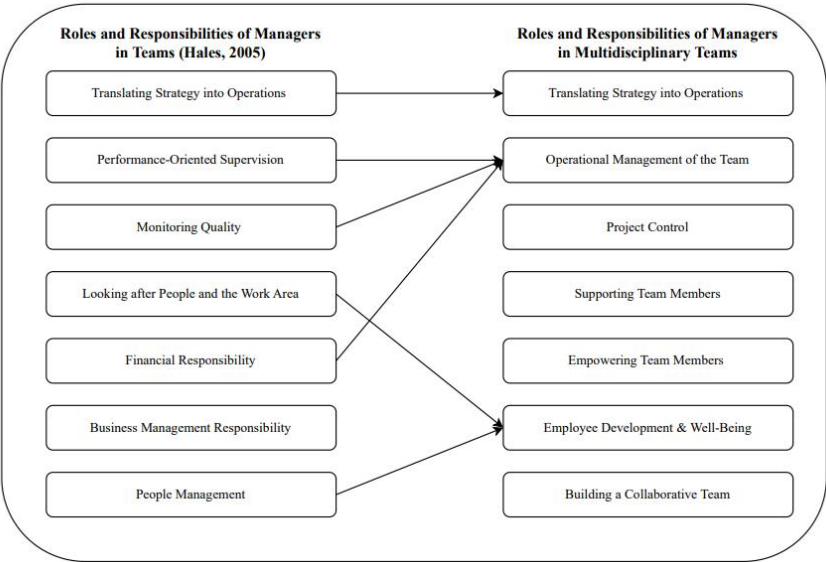


Figure 13 Comparison Roles and Responsibilities in Teams vs. MDTs

The roles and responsibilities of managers in MDTs show similarities to those in traditional teams, but with distinct emphasis. Translating strategy into operations remains crucial for both, aligning with Hales (2005). However, in MDTs, this responsibility involves broader, personalized efforts to align individual

contributions with team objectives, especially given the diverse disciplinary goals within these teams. Managers engage in discussions to emphasize each discipline's value, helping prevent conflicts between individual and team objectives, which is particularly important given the unique goals and perspectives inherent in multidisciplinary teams (Holland et al., 2000; Pershina et al., 2019).

Figure 13 shows that operational management responsibility of managers in MDTs aligns with multiple line managerial roles in general teams (Hales, 2005), but in MDTs there are less operational factors and less emphasis on strict performance, quality, and financial oversight. MDT managers typically intervene only when issues arise or resources need reallocation, focusing more on development than rigid performance monitoring by giving real-time feedback and assessing subjective performance to increase skills of team members. This approach reflects the high skill level and intrinsic motivation of team members, who need less supervision due to their expertise. Managers trust team members' capabilities, stepping in only when consensus is not reached, balancing timely decision-making with leveraging the team's diverse expertise (Aarts & Woerkum, 2002; Hall, 2005).

Whereas traditional management stresses control and supervision, MDT management focuses on support and empowerment. In MDTs, managers take a step back from direct oversight, prioritizing the empowerment and autonomy of team members. Analysing the findings this approach results from managers' recognition and valuation of their team members' specialized expertise. Understanding that they do not possess this knowledge, managers empower their team members to undertake tasks independently and autonomously. By granting autonomy, these managers assume the role supporter, fostering an environment where team members feel comfortable seeking help when they encounter questions or need assistance, removing roadblocks, and ensuring they have what they need to succeed. Managers in MDTs take this step back to avoid limiting the expertise of team members, allowing them to fully leverage their specialized knowledge and skills. By doing so, managers enable team members to take ownership of their work and make independent decisions, fostering creativity and innovation. This goes hand in hand with trusting employees to come in case of issues, which they try to stimulate by fostering open communication so that everything can be said with negative

A central responsibility for MDT managers is fostering employee growth and development. While Hales (2005) and Purcell & Hutchinson (2007) identify this as a responsibility, in MDTs, it is an ongoing focus due to the specialized skills and growth-oriented nature of team members. By prioritizing development, managers help team members maximize their potential, enhancing job satisfaction.

Additionally, in contrast to Hales (2005), managers in MDTs place a stronger emphasis on fostering collaboration. Given the diverse disciplines involved, open communication is crucial. Managers create environments where all perspectives are valued, encouraging dialogue to integrate diverse viewpoints and prevent conflicts. This approach aligns with Townsend et al. (2013) who acknowledges that line managers have an important role in stimulating open communication, such as

encouraging employee voice through activities. And with project management literature, where it is found that project managers have an important responsibility in creating an atmosphere where they feel safe expressing their ideas (Anantatmula, 2010; Fisher, 2011).

Finally, Figure 13 highlights project control as a responsibility of managers in MDTs, however this is specific related to project managers, not line managers, in MDTs. This distinction is expected, as project managers inherent in their managerial role are accountable for ensuring that projects are executed within time, budget, and scope (PMI, 2008). This responsibility remains consistent in the MDT context since the project's goals still require careful management. The difference from Hales' findings lies in the focus of his research, which primarily examined line managers. However, this study shows that aside from project control, both line and project managers in MDTs share similar roles and responsibilities.

In conclusion, while some managerial responsibilities in MDTs align with general teams, key deviations are evident. Both contexts share core responsibilities like translating strategy into operations and operational management, but MDT managers distinctly focus on support, empowerment, employee development, and fostering collaboration. These differences stem from the MDT environment, where managers must take a step back from rigid control due to their lack of deep disciplinary expertise. Instead of direct oversight, they support team members by facilitating communication, enabling autonomy in tasks and responsibilities, and creating an environment conducive to collaboration and growth. This approach aligns with the needs of multidisciplinary team members, who prefer guidance and support over being told how to do their work. They value the freedom to execute tasks independently, leveraging their expertise without unnecessary interference, which ultimately enhances team performance.

## **5.2 Theoretical Implications**

The management of MDTs and the roles and responsibilities associated with these teams have been relatively underexplored in existing literature. This study makes implications to theory by demonstrating the roles and responsibilities of managers in MDTs and that these are context-dependent, shaped by various factors such as team structure, organizational culture, employee expertise, and specific operational demands. While previous literature outlined the roles and responsibilities of managers in general team, such as Hales (2005) has emphasized the importance of control, supervision, and authority in managing teams, the findings of this study suggest that MDT management requires a more adaptive and nuanced approach.

The analysis shows that the structure of the MDT significantly determines managerial priorities and actions. In organically collaborative and permanent teams, where collaboration is naturally integrated, management focuses on relationship-building, supporting and empowering team members, and fostering a collaborative environment. These teams allow for a more hands-off approach, where

managers emphasize aligning individual contributions with collective goals to align disciplines in the team to work towards the same direction and encouraging autonomy due to the specialized expertise of team members, while being available for guidance. In MDTs where team members work under different project managers, the manager's role is less about direct content involvement and more focused on resource allocation, operational support, and employee development across multiple projects. The fact that team members work under different project managers means that the manager in this case supports employees from a distance, ensuring they have what they need to perform well in their respective projects. In project-based teams, managers focus on project control, goal clarity, and balancing autonomy with oversight. While maintaining structure and alignment are critical, these managers still engage in empowerment and support, recognizing that team members are the experts that not need direct oversight, hence ensuring that team members can self-manage while intervening when alignment or decision-making is needed. This variation highlights that managers must tailor their approach based on the team's configuration, whether the team works collaboratively and continuously or operates on more fragmented, project-driven assignments.

Moreover, the analysis demonstrates that organizational culture and team composition significantly shape how managers lead MDTs. In organizations where continuous learning and development are core values, managers integrate these elements into their management approach by emphasizing personal and professional growth. Similarly, the composition of the team, such as the age range, disciplinary dominance, and diversity of expertise, shapes how managers engage in translating strategy into operations, fostering open communication, and collaboration. For instance, in teams with a broad age range or where certain disciplines dominate, managers must actively work to balance contributions and ensure inclusivity in discussions.

The third implication of this study is that one of the key findings is the consistent emphasis on empowering and supporting employees across all MDTs. Instead of adhering to traditional management approaches like micromanagement, which involves closely monitoring individuals and processes (Delgado et al., 2015), MDT managers prioritize giving autonomy to highly specialized team members who often possess more in-depth expertise than the managers themselves. This shift is rooted in the recognition that allowing experts to exercise their knowledge and skills independently. Managers take the role of supporting and empowering team members, by focusing on developing team members and enabling team members to overcome barriers and ensuring they have the resources they need, rather than directly intervening in their work. This finding aligns with previous research from (Graça & Passos, 2015), emphasizing that MDT leaders need to resign from explicit coordination and instead need encourage self-management, to make team members feel empowered they can manage their tasks and responsibilities, which can lead to higher job satisfaction and motivation.

Stemming from this finding, the fourth implication is that Belbin's team role theory, especially the leadership roles of Coordinator and Shaper, may have limitations when applied to MDTs. While Belbin's roles focus on control, decision-making, and maintaining team harmony (Aritzeta et al., 2007; Belbin, 1981), the findings from this research emphasize the crucial importance of managerial roles in empowering and supporting team members to effectively leverage their expertise. This suggests that Belbin's model might need to be revised or expanded to include roles that emphasize empowerment and support, which are essential for optimizing team dynamics in MDTs.

A common challenge in MDTs is the effective sharing of knowledge across different disciplines (Comeau-Vallée & Langley, 2020). This is due to the knowledge inherent to each discipline and different structures and procedures that need to be aligned. The study findings suggest that managers play a crucial role in facilitating this knowledge sharing. They enhance internal collaboration and knowledge sharing by encouraging discussions and aligning perspectives within the team. Additionally, managers leverage their external networks to obtain and share relevant information and connect team members to the right people, thereby providing team members with the right information necessary to execute tasks.

Another important contribution is the study's insight into performance management in MDTs. The findings show that performance management approaches vary widely, from discipline-specific evaluations to real-time feedback. The study highlights the importance of aligning performance management strategies with team needs and contexts. For instance, in teams with diverse expertise, managers must adapt their evaluation methods to consider individual contributions and working styles rather than applying standardized metrics that may not account for the nuances of different disciplines. This finding aligns with Johnston et al. (2011), who highlight the need for flexible and interactive performance evaluations in MDTs that more accurately reflect the contributions of all team members.

The study adds to the understanding of strategy translation in MDTs by showing that this process is not always a one-time effort but may require continuous reinforcement, especially in teams with members from different organizations or with varying priorities. The findings suggest that in more mature teams, less alignment effort is needed as members are already well-versed in the team's goals. In contrast, in teams with high diverse discipline backgrounds, managers must consistently re-emphasize and align strategic objectives to maintain focus and cohesion.

Another theoretical implication is that while project managers and line managers operate within different scopes and timeframes, their approaches to managing MDTs exhibit significant similarities. Both roles emphasize collaboration, communication, and empowerment, and are committed to supporting team development and well-being. Despite their distinct responsibilities - line managers focusing on ongoing operational management and resource allocation, and project managers concentrating on project-specific outcomes and content oversight - the core management strategies they employ are notably aligned. This finding complements research by Keegan et al. (2012), which



highlights the similarities in the roles and responsibilities of line managers and project managers in human resource management functions. Both roles are integral to performance appraisal, training and development, resource planning, and employee well-being.

Overall, the study enhances the understanding of MDT management by emphasizing the variability of managers roles and responsibilities based on contextual factors such as team structure, organizational culture, and expertise levels. It challenges the traditional view of managerial roles centered on control and supervision by showing that in MDTs, effective management is less about enforcing authority and more about facilitating collaboration, enabling autonomy, and adapting to the team's unique needs.

### **5.3 Practical Implications**

Analyzing the roles and responsibilities of line managers and project managers in MDTs reveals several practical implications. These implications are relevant to enhancing team effectiveness, manager roles, and interactions with other stakeholders, such as HR.

The study offers valuable insights for line managers and project managers working with MDTs that they can apply in managing these teams effectively. A key approach is empowering team members by granting autonomy and stepping in only when necessary, allowing experts to work independently. Managers should prioritize fostering open communication and collaboration across disciplines by creating opportunities for dialogue and knowledge sharing. Rather than focusing on rigid performance oversight, managers should emphasize continuous development and personalized growth plans, offering real-time feedback and aligning individual goals with team objectives. Leadership strategies must be context-driven, as the study highlighted that context shapes the roles and responsibilities. For instance in permanent teams, the focus should be on relationship-building and goal alignment, while in project-based teams, balancing autonomy with oversight is essential. Managers should support team members by providing resources and guidance, removing obstacles, and fostering a culture of independence and expertise-driven decision-making.

HR professionals and external stakeholders are pivotal in tailoring management practices to meet the unique needs of MDTs. Given the diverse expertise within these teams, HR should equip managers with flexible performance management systems tailored to each discipline, incorporating real-time feedback to accurately reflect individual contributions. Additionally, HR should offer development opportunities that align with employee aspirations, allowing managers to support ongoing professional growth. Training programs for managers should focus on enhancing skills in communication and managing specialized teams, including fostering knowledge sharing, creating an open environment, and effectively translating goals. Moreover, policies should promote openness, transparency, and inclusivity,

ensuring a supportive and collaborative environment. By implementing these strategies, HR can significantly enhance the effectiveness and cohesion of MDTs.

## **5.4 Limitations and Future Research Directions**

One limitation of this study is that while multiple cases were included, not all relevant information about each case was gathered, such as the team size, organizational and team culture, and the organogram. Although some data on team sizes were collected and utilized, a more comprehensive collection of these details and more in-depth insights into participant characteristics and team composition in terms of age could have enriched the findings. This additional data could reveal more nuanced differences in the roles and responsibilities of managers in multidisciplinary teams. For instance, understanding how various organizational structures, team sizes, and demographic compositions influence managerial roles could provide deeper insights into effective management strategies tailored to specific contexts. Further research could focus on these areas more in-depth to better understand the impacts of organizational and team dynamics on managerial roles.

Another limitation is that while the study included perspectives from both line managers and team members, it primarily focused on identifying the roles and responsibilities of managers. However, interviews with team members occasionally revealed interesting insights into the roles and responsibilities they believe managers should fulfill. Future research could delve deeper into the team members' perspectives to better understand these needs and expectations. This could help identify gaps between current managerial practices and what team members perceive as necessary, providing actionable insights for improving team dynamics and performance.

The third limitation arises from relying solely on semi-structured interviews for data collection. While interviews provide valuable insights into the perceptions and experiences of managers in multidisciplinary teams, they may not fully capture all aspects of their roles and challenges. For instance, managers who have worked together for an extended period may be highly attuned to each other's actions and challenges, potentially leading to underreporting of certain issues during interviews. Observations could enhance interview findings by providing a more nuanced understanding of how managers navigate their roles in real-time settings. Observation involves directly witnessing and recording managers' actions, behaviors, and roles in their natural environments (Walshe, Ewing, & Griffiths, 2011). By doing so, observations could reveal detailed insights into practical challenges and strategies that might not have been fully uncovered in interviews alone. Therefore, while semi-structured interviews remain valuable for exploring managers' experiences, future research could incorporate observations as an additional data collection method to capture a broader range of managerial behaviors and challenges. Moreover, integrating multiple data sources, such as observations alongside interviews, is known as

triangulation. This methodological approach enhances the validity of research findings by verifying data from different perspectives and sources (Walshe, Ewing, & Griffiths, 2011), providing a more comprehensive understanding of the topic under investigation.

## 6. Conclusion

This study gave insights into managerial roles and responsibilities in MDTs, revealing deviations from managers roles and responsibilities in general teams as described by Hales (2005). It shows that while some managerial tasks like translating strategy and operational management remain consistent, MDT managers adopt a more adaptive and supportive approach. MDTs require managers to emphasize support, empowerment, and collaboration due to the diverse expertise and backgrounds of team members. Managers often lack specialized knowledge in the various disciplines, and team members do not want to be limited in showing their expertise through micro management, making it crucial to foster an environment that recognizes and leverages team members' expertise.

The research underscores that context - whether in organically collaborative teams, project-based teams, or teams with different managerial structures - shapes managerial roles and responsibilities. Factors such as company culture, team composition, and maturity play a vital role in determining responsibilities. Despite these variations, a common thread is the focus on empowering team members, supporting, facilitating development, and promoting collaboration.

This research contributes to theory by clarifying the roles and responsibilities of managers in multidisciplinary teams, an area previously underexplored. The findings highlight a shift towards a supportive and facilitative management approach in MDTs. Additionally, despite their distinct roles, both line and project managers in MDTs utilize core strategies related to managing people. The insights contribute to management theory by offering a more nuanced understanding of management practices in MDT settings.

## References

- Aarts, N., & van Woerkum, C. (2002). Dealing with uncertainty in solving complex problems. In *Wheelbarrows full of frogs / Cees Leeuwis and Rhiannon Pyburn* (421-435). Van Gorcum.
- Abbe, A., & Brandon, S. E. (2013). Building and maintaining rapport in investigative interviews. *Police Practice and Research, 15*(3), 207–220.  
<https://doi.org/10.1080/15614263.2013.827835>
- Alsaawi, A. (2014). A Critical Review of Qualitative Interviews. *European Journal of Business and Social Sciences, 3*(4), 149-156. <http://dx.doi.org/10.2139/ssrn.2819536>
- Anantatmula, V. S. (2010). Project manager leadership role in improving project performance. *Engineering Management Journal, 22*(1), 13-22.  
<https://doi.org/10.1080/10429247.2010.11431849>
- Aritzeta, A., Swailes, S., & Senior, B. (2007). Belbin's team role model: Development, validity and applications for team building. *Journal of Management Studies, 44*(1), 96-118.  
<https://doi.org/10.1111/j.1467-6486.2007.00666.x>
- Armstrong, M. (1998). *Managing people: A practical guide for line managers*. Kogan Page Publishers.
- Atwal, A., & Caldwell, K. (2006). Nurses' perceptions of multidisciplinary team work in acute health-care. *International Journal of Nursing Practice, 12*(6), 359-365.  
<https://doi.org/10.1111/j.1440-172X.2006.00595.x>
- Baldwin, D. C., Jr, & Daugherty, S. R. (2008). Interprofessional conflict and medical errors: results of a national multi-specialty survey of hospital residents in the US. *Journal of interprofessional care, 22*(6), 573–586. <https://doi.org/10.1080/13561820802364740>
- Barriball, K. L., & While, A. (1994). Collecting data using a semi-structured interview: a discussion paper. *Journal of Advanced Nursing, 19*(2), 328–335. <https://doi.org/10.1111/j.1365-2648.1994.tb01088.x>
- Basset-Jones, N. (2005). The paradox of diversity management, creativity and innovation. *Creativity and Innovation Management, 14*(2), 169-175. <https://doi.org/10.1111/j.1467-8691.00337.x>
- Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report, 13*(4), 544-559.  
<https://doi.org/10.46743/2160-3715/2008.1573>
- Belbin R. M. (1981). *Management teams : why they succeed or fail*. Heinemann.

- Biddle, B. J. (1986). Recent Development in Role Theory. *Annual Review of Sociology*, 12, 67–92.  
<http://www.jstor.org/stable/2083195>
- Bos-Nehles, A. C. (2010). *The line makes the difference: line managers as effective HRM partners*. [PhD Thesis - Research UT, graduation UT, University of Twente]. University of Twente.
- Choi, B. C., & Pak, A. W. (2006). Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. *Clinical and investigative medicine. Medecine clinique et experimentale*, 29(6), 351–364.
- Choi, B. C., & Pak, A. W. (2007). Multidisciplinarity, interdisciplinarity, and transdisciplinarity in health research, services, education and policy: 2. Promotors, barriers, and strategies of enhancement. *Clinical and investigative medicine*, 30(6), 224–232.  
<https://doi.org/10.25011/cim.v30i6.2950>
- Chreim, S., Langley, A., Comeau-Vallée, M., Huq, J.-L., & Reay, T. (2013). Leadership as boundary work in healthcare teams. *Leadership*, 9(2), 201-228.  
<https://doi.org/10.1177/1742715012468781>
- Comeau-Vallée, M., & Langley, A. (2020). The Interplay of Inter- and Intraprofessional Boundary Work in Multidisciplinary Teams. *Organization Studies*, 41(12), 1649-1672.  
<https://doi.org/10.1177/0170840619848020>
- D'Amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M. D. (2005). The conceptual basis for interprofessional collaboration: core concepts and theoretical frameworks. *Journal of Interprofessional Care*, 19, 116–131.  
<https://doi.org/10.1080/13561820500082529>
- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), 1-8.  
<http://dx.doi.org/10.1136/fmch-2018-000057>
- Delgado, O., Strauss, E. M., & Ortega, M. A. (2015). Micromanagement: When to avoid it and how to use it effectively. *American Journal of Health-System Pharmacy*, 72(10), 772-776.  
<https://doi.org/10.2146/ajhp140125>
- Denscombe, M. (2010). *The Good Research Guide: for small-scale social research projects* (4th ed.). Open University Press.
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314-321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>

- Diez, J. J., Galofré, J. C., Oleage, A., Grande, E., Mitjavila, M., & Moreno, P. (2019). Characteristics of professionalism of specialists and advantages of multidisciplinary teams in thyroid cancer: Results of a national opinion survey. *Endocrinología, Diabetes y Nutrición (English ed.)*, 66(2), 74-82. <https://doi.org/10.1016/j.endien.2018.10.008>
- Drent, E., Renkema, M., & Bos-Nehles, A. (2022). Chapter 23: Reconceptualizing the HRM role of the line manager in the age of artificial intelligence. *Research Handbook on Line Managers* (367-387), Edward Elgar Publishing. <https://doi.org/10.4337/9781839102745.00030>
- Ebersöhn, L., Ferreira-Prévost, J., Maree, J. G., & Alexander, D. (2007). Exploring facilitation skills in transdisciplinary teamwork. *International Journal of Adolescence and Youth*, 13(4), 257-284. <https://doi.org/10.1080/02673843.2007.9747980>
- Edmondson, A. C., & Nembhard, I. M. (2009). Product Development and Learning in Project Teams: The Challenges Are the Benefits. *Journal of Product Innovation Management*, 26(2), 123-138. <https://doi.org/10.1111/j.1540-5885.2009.00341.x>
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550. <https://doi.org/10.5465/amr.1989.4308385>
- El-Awad, Z., Brattström, A., Breugst, N. (2022). Bridging cognitive scripts in multidisciplinary academic spinoff teams: A process perspective on how academics learn to work with non-academic managers. *Research Policy*, 51(10), 1-14. <https://doi.org/10.1016/j.respol.2022.104592>
- Evans, S. (2022). Chapter 4: Line managers, role theory and HRM. *Research Handbook on Line Managers* (52-64), Edward Elgar Publishing. <https://doi.org/10.4337/9781839102745.00009>
- Fay, D., Borrill, C., Amir, Z., Haward, R., & West, M. A. (2006). Getting the most out of multidisciplinary teams: A multi-sample study of team innovation in health care. *Journal of Occupational and Organizational Psychology*, 79(4), 553-567. <https://doi.org/10.1348/096317905X72128>
- Fewster-Thuente, L., & Velsor-Friedrich, B. (2008). Interdisciplinary collaboration for healthcare professionals. *Nursing Administration Quarterly*, 32(1), 40-48. <https://doi.org/10.1097/01.NAQ.0000305946.31193.61>
- Fisher, E. (2011). What practitioners consider to be the skills and behaviours of an effective people project manager. *International journal of project management*, 29(8), 994-1002. <https://doi.org/10.1016/j.ijproman.2010.09.002>
- Fisher, S. G., W.D., K., & Semple, J. H. (2001). Control and Belbin's team roles. *Personnel Review*, 30(5), 578-588. <https://doi.org/10.1108/EUM0000000005940>

- Fleissig, A., Jenkins, V., Catt, S., & Fallowfield, L. (2006). Multidisciplinary teams in cancer care; are they effective in the UK? *The Lancet Oncology*, 7(11), 935-943.  
[https://doi.org/10.1016/S1470-2045\(06\)70940-8](https://doi.org/10.1016/S1470-2045(06)70940-8)
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods*, 16(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Gordon, R. M., Corcoran, J. R., Bartley-Daniele, P., Sklenar, D., Sutton, P. R., & Cartwright, F. (2014). A transdisciplinary team approach to pain management in inpatient health care settings. *Pain Management Nursing*, 5(1), 426-435. <https://doi.org/10.1016/j.pmn.2013.01.004>
- Graça, A. M., & Passos, A. M. (2015). Team leadership across contexts: A qualitative study. *Leadership & Organization Development Journal*, 36(5), 489-511.  
<https://doi.org/10.1108/LODJ-08-2013-0114>
- Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary? *Applied Nursing Research*, 19(1), 38-42.  
<https://doi.org/10.1016/j.apnr.2005.06.001>
- Hales, C. (2005). Rooted in supervision, branching into management: Continuity and change in the role of first-line manager. *Journal of Management Studies*, 42(3), 471-506.  
<https://doi.org/10.1111/j.1467-6486.2005.00506.x>
- Hall, P. (2005). Interprofessional teamwork: professional cultures as barriers. *Journal of Interprofessional Care*, 19, 188–196. <https://doi.org/10.1080/13561820500081745>
- Hammarberg, K., Kirkman, M., de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction*, 31(3), 498–501,  
<https://doi.org/10.1093/humrep/dev334>
- Hansson, A., Friberg, F., Segesten, K., Gedda, B., & Mattsson, B. (2008). Two sides of the coin—general practitioners' experience of working in multidisciplinary teams. *Journal of Interprofessional Care*, 22(1), 5-16. <https://doi.org/10.1080/13561820701722808>
- Higginson, I. J., Finlay, I. G., Goodwin, D. M., Hood, K., Edwards, A. G., Cook, A., ..., & Normand, C. E. (2003). Is there evidence that palliative care teams alter end-of-life experiences of patients and their caregivers? *Journal of Pain and Symptom Management*, 25(2), 150-168.  
[https://doi.org/10.1016/S0885-3924\(02\)00599-7](https://doi.org/10.1016/S0885-3924(02)00599-7)
- Holland, S., Gaston, K., & Gomes, J. (2000). Critical success factors for cross-functional teamwork in new product development. *International Journal of Management Reviews*, 2(3), 231-259.  
<https://doi.org/10.1111/1468-2370.00040>



- Hsiao, R. L., Tsai, D. H., & Lee, C. F. (2012). Collaborative Knowing: The Adaptive Nature of Cross Boundary Spanning. *Journal of Management Studies*, 49(3), 463-491.  
<https://doi.org/10.1111/j.1467-6486.2011.01024.x>
- Hutchinson, S., & Purcell, J. (2008). Front line managers and the delivery of effective people management. *A study of front line managers in the NHS*, 1-133.
- Hutchinson, S., & Purcell, J. (2010). Managing ward managers for roles in HRM in the NHS: overworked and under-resourced. *Human Resource Management Journal*, 20(4), 357-374.  
<https://doi.org/10.1111/j.1748-8583.2010.00141.x>
- Illiffe S. (2008). Myths and realities in multidisciplinary team-working. *London Journal of Primary Care*, 1(2), 100–102. <https://doi.org/10.1080/17571472.2008.11493220>
- Jackson, S. E. (1996). The consequences of diversity in multidisciplinary work teams. *Handbook of Work Group Psychology* (53-75).
- Jamshed S. (2014). Qualitative research method-interviewing and observation. *Journal of basic and clinical pharmacy*, 5(4), 87–88. <https://doi.org/10.4103/0976-0105.141942>
- Jenkins, V. A., Fallowfield, L. J., & Poole, K. (2001). Are members of multidisciplinary teams in breast cancer aware of each other's informational roles? *BMJ Quality & Safety*, 10(2), 70-75.  
<http://dx.doi.org/10.1136/qhc.10.2.70>
- Johnston, S., Green, M., Thille, P., Savage, C., Roberts, L., Russell, G., & Hogg, W. (2011). Performance feedback: an exploratory study to examine the acceptability and impact for interdisciplinary primary care teams. *BMC Family Practice*, 12, 1-10.  
<https://doi.org/10.1186/1471-2296-12-14>
- Jones, A. (2006). Multidisciplinary team working: Collaboration and conflict. *International Journal of Mental Health Nursing*, 15(1), 19-28. <https://doi.org/10.1111/j.1447-0349.2006.00400.x>
- Kauppi, S., Muukkonen, H., Suorsa, T., & Takala, M. (2020). I still miss human contact, but this is more flexible—Paradoxes in virtual learning interaction and multidisciplinary collaboration. *British Journal of Educational Technology*, 51(4), 1101-1116.  
<https://doi.org/10.1111/bjet.12929>
- Keegan, A., Huemann, M., & Turner, J. R. (2011). Beyond the line: exploring the HRM responsibilities of line managers, project managers and the HRM department in four project-oriented companies in the Netherlands, Austria, the UK and the USA. *The International Journal of Human Resource Management*, 23(15), 3085–3104.  
<https://doi.org/10.1080/09585192.2011.610937>

- Kreindler, S. A., Dowd, D. A., Dana Star, N. O. A. H., & Gottschalk, T. (2012). Silos and social identity: the social identity approach as a framework for understanding and overcoming divisions in health care. *The Milbank Quarterly*, 90(2), 347-374.  
<https://doi.org/10.1111/j.1468-0009.2012.00666.x>
- Leathard, A. (2003). *Interprofessional Collaboration: From Policy to Practice in Health and Social Care* (1st ed.). Routledge. <https://doi.org/10.4324/9780203420690>
- Lientz, B., & Rea, K. (2001). *Project Management for the 21st Century* (3rd ed.). Routledge.  
<https://doi.org/10.4324/9780080480497>
- Llewellyn, C., Ayers, S., McManus, C., Newman, S., Petrie, K. J., Revenson, T. A., & Weinman, J. (2019). *Cambridge Handbook of Psychology, Health and Medicine* (3rd ed.). Cambridge University Press. <https://doi.org/10.1017/9781316783269>
- MacNeil, C. M. (2003). Line managers: facilitators of knowledge sharing in teams. *Employee Relations*, 25(3), 294-307. <https://doi.org/10.1108/01425450310475874>
- Magnani, G., & Gioia, D. (2023). Using the Gioia Methodology in international business and entrepreneurship research. *International Business Review*, 32(2), 1-22.  
<https://doi.org/10.1016/j.ibusrev.2022.102097>
- McDermott, A. M., Fitzgerald, L., Van Gestel, N. M., & Keating, M. A. (2015). From bipartite to tripartite devolved HRM in professional service contexts: Evidence from hospitals in three countries. *Human Resource Management*, 54(5), 813-831. <https://doi.org/10.1002/hrm.21728>
- McDonough, E. F. (2000). Investigation of factors contributing to the success of cross-functional teams. *Journal of Product Innovation Management*, 17(3), 221-235.  
[https://doi.org/10.1016/S0737-6782\(00\)00041-2](https://doi.org/10.1016/S0737-6782(00)00041-2)
- Minguela-Rata, B., and Arias-Aranda, D. (2009). New product performance through multifunctional teamwork: An analysis of the development process towards quality excellence. *Total Quality Management & Business Excellence*, 20(4), 381-392  
<https://doi.org/10.1080/14783360902781824>
- Mitchell, R., Boyle, B., O'Brien, R., Malik, A., Tian, K., Parker, V., Giles, M., Joyce, P., & Chiang, V. (2017). Balancing cognitive diversity and mutual understanding in multidisciplinary teams. *Health Care Management Review*, 42(1), 42-52.  
<https://doi.org/10.1097/HMR.0000000000000088>
- Mitchell, R., Parker, V., Giles, M., & Boyle, B. (2014). The ABC of health care team dynamics: Understanding complex affective, behavioral, and cognitive dynamics in interprofessional

- teams. *Health Care Management Review*, 39(1), 1-9.  
<https://doi.org/10.1097/HCM.0b013e3182766504>
- Nehles, A. C., Van Riemsdijk, M., Kok, I., & Looise, J. K. (2006). Implementing human resource management successfully: A first-line management challenge. *Management Review*, 17(3), 256-273. <https://doi.org/10.5771/0935-9915-2006-3-256>
- Northouse, P. G. (2010). *Leadership: theory and practice*(5th ed.). Thousand Oaks, Sage Publications.
- Örtqvist, D., & Wincent, J. (2006). Prominent consequences of role stress: A meta-analytic review. *International Journal of Stress Management*, 13(4), 399–422. <https://doi.org/10.1037/1072-5245.13.4.399>
- Parker, C., Scott, S., & Geddes, A. (2019). *Snowball Sampling*. SAGE Research Methods Foundations. <https://doi.org/10.4135/9781526421036831710>
- Pastel, R., Seigel, M., Zhang, W., & Mayer, A. (2015). Team building in multidisciplinary client-sponsored project courses. *ACM Transactions on Computing Education (TOCE)*, 15(4), 1-23. <https://doi.org/10.1145/2700518>
- Pershina, R., Soppe, B., & Thune, T. M. (2019). Bridging analog and digital expertise: Cross-domain collaboration and boundary-spanning tools in the creation of digital innovation. *Research Policy*, 48(9), 1-13. <https://doi.org/10.1016/j.respol.2019.103819>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Proctor, R. W., & Vu, K.-P. L. (2019). How psychologists help solve real-world problems in multidisciplinary research teams: Introduction to the special issue. *American Psychologist*, 74(3), 271–277. <https://doi.org/10.1037/amp0000458>
- Project Management Institute S.C. (2008). *A guide to the Project Management Body of Knowledge* (7th ed.). Project Management Institute.
- Purcell, J. and Hutchinson, S. (2007). Front-line managers as agents in the HRM-performance causal chain: theory, analysis and evidence. *Human Resource Management Journal*, 17(1), 3-20. <https://doi.org/10.1111/j.1748-8583.2007.00022.x>
- Randel, A. E., & Jaussi, K. S. (2003). Functional background identity, diversity, and individual performance in cross-functional teams. *Academy of Management Journal*, 46(6), 763–774. <https://doi.org/10.2307/30040667>

- Ratcheva, V. (2009). Integrating diverse knowledge through boundary spanning processes - The case of multidisciplinary project teams. *International Journal of Project Management*, 27(3), 206-215. <https://doi.org/10.1016/j.ijproman.2008.02.008>
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role Conflict and Ambiguity in Complex Organizations. *Administrative Science Quarterly*, 15(2), 150–163. <https://doi.org/10.2307/2391486>
- Ruhstaller, T., Roe, H., Thürlimann, B., & Nicoll, J. J. (2006). The multidisciplinary meeting: an indispensable aid to communication between different specialties. *European Journal of Cancer*, 42(15), 2459-2462. <https://doi.org/10.1016/j.ejca.2006.03.034>
- Saint-Pierre, C., Herskovic, V., & Sepúlveda, M. (2018). Multidisciplinary collaboration in primary care: a systematic review. *Family Practice*, 35(2), 132-141. <https://doi.org/10.1093/fampra/cmz085>
- Senaratne, S., & Gunawardane, S. (2015). Application of team role theory to construction design teams. *Architectural Engineering and Design Management*, 11(1), 1-20. <https://doi.org/10.1080/17452007.2013.802980>
- Stokes, J. (1994). Problems in multidisciplinary teams: the unconscious at work. *Journal of Social Work Practice*, 8(2), 161-167. <https://doi.org/10.1080/02650539408413977>
- Tajfel, H. (Ed.), (1982). *Social identity and intergroup relations*. Cambridge, MA: Cambridge University Press.
- Tajfel, H., Flament, C., Billig, M. G., & Bundy, R. P. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology*, 1, 149–178. <https://doi.org/10.1002/ejsp.2420010202>
- Taylor, C., Shewbridge, A., Harris, J., & Green, J. S. (2013). Benefits of multidisciplinary teamwork in the management of breast cancer. *Breast Cancer: Targets and Therapy*, 5, 79-85. <https://doi.org/10.2147/BCTT.S35581>
- Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a Qualitative Research Approach. *Journal of Graduate Medical Education*, 7(4), 669–670. <https://doi.org/10.4300/jgme-d-15-00414.1>
- Tenny S., Brannan J. M., Brannan G. D. (2022) *Qualitative Study*. In: *StatPearls*, StatPearls Publishing
- Thomas, D. R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27(2), 237–246. <https://doi.org/10.1177/1098214005283748>

- Townsend, K., Bos-Nehles, A., & Jiang, K. (2022). Chapter 1: Line managers in human resource management: theory, analysis and new developments. *Research Handbook on Line Managers* (1-10). Edward Elgar Publishing. <https://doi.org/10.4337/9781839102745.00005>
- Keegan, A., Huemann, M., & Turner, J. R. (2011). Beyond the line: exploring the HRM responsibilities of line managers, project managers and the HRM department in four project-oriented companies in the Netherlands, Austria, the UK and the USA. *The International Journal of Human Resource Management*, 23(15), 3085–3104. <https://doi.org/10.1080/09585192.2011.610937>
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.
- Tymkiv, N. (2021). Interdisciplinary Approach in Professional Training for Future Petroleum Engineers. *International Journal of Pedagogy, Innovation and New Technologies*, 8(1), 81-86. <https://doi.org/10.5604/01.3001.0014.9143>
- Van Knippenberg, D., Nishii, L. H., & Dwertmann, D. J. (2020). Synergy from diversity Managing team diversity to enhance performance. *Behavioral Science & Policy*, 6(1), 75-92. <https://doi.org/10.1177/237946152000600108>
- Walshe, C., Ewing, G., & Griffiths, J. (2011). Using observation as a data collection method to help understand patient and professional roles and actions in palliative care settings. *Palliative medicine*, 26(8), 1048-1054. <https://doi.org/10.1177/0269216311432897>
- Xyrichis, A., & Lowton, K. (2008). What fosters or prevents interprofessional teamworking in primary and community care? A literature review. *International Journal of Nursing Studies*, 45(1), 140-153. <https://doi.org/10.1016/j.ijnurstu.2007.01.015>
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Sage Publications.
- Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage Publications.
- Zajac, S., Woods, A., Tannenbaum, S., Salas, E., & Holladay, C. L. (2021). Overcoming challenges to teamwork in healthcare: a team effectiveness framework and evidence-based guidance. *Frontiers in Communication*, 6, 1-20. <https://doi.org/10.3389/fcomm.2021.606445>
- Zwarenstein, M., Goldman, J., & Reeves, S. (2009). Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews*, 8(3). <https://doi.org/10.1002/14651858.CD000072.pub2>

## Appendix A: Interview Questions (English & Dutch)

### Interview Questions Line Manager and Team Members English

#### Interview Questions Line Managers EN

Goal: Exploring the role and responsibilities of line managers in multidisciplinary teams

Ask for permission to record and transcribe the interview and use the data for analysis.

#### Questions introduction:

- Would you like to introduce yourself?
  - o What is your name?
  - o What is your position?
  - o How long have you been working in this company?

Within my research on multidisciplinary teams, we consider them as consisting of at least two different disciplines working together towards a common goal.

- What is your role as the manager of a team?
- Considering how I see multidisciplinary teams, in what way is your team multidisciplinary?

#### Questions regarding the role of the line manager:

- What is your role as the manager of the multidisciplinary team?
- What are your responsibilities in managing this team?
- What are the opportunities and challenges associated with the diversity of disciplines within the team?
  - o How do you deal with these challenges?
- How do you lead employees with diverse skills?
- How do you ensure that each team member's expertise is optimally utilized to achieve the team's goals?
- What do you consider important in managing a team with diverse disciplines?
  - o When are you satisfied?
- How do you foster collaboration and communication with team members with different professional backgrounds?
- What is your role in coordinating and allocating work to the team members?
- How do you allocate tasks and responsibilities, considering your team's varied skill sets and expertise?
- How do you allocate resources across various disciplines with distinct financial needs?
- How do you monitor the quality and performance of the multidisciplinary team?
  - o How do you give feedback to someone with another disciplinary background?
  - o In what way do you set performance goals?
  - o Individually or on a team level?
- How do you facilitate professional development for members of your team?
- How do you ensure alignment between organizational objectives and diverse disciplinary goals and strategies?
- Do you encounter any conflicts among the different disciplines within the team? If so, what are these conflicts?
  - o How do you solve these?
  - o What approaches do you take?
- Which motivational strategies do you use to motivate team members from diverse disciplines?
- How do you motivate people from different disciplines?
  - o Which motivational strategies do you use for each discipline?
- What is your role in facilitating knowledge sharing in the team?

- How do you do this?
- What do you need to be able to foster knowledge sharing among disciplines?
- What do you find difficult in fostering this?
- What makes managing a multidisciplinary team effective?

Questions regarding the differences between the role of line managers in general teams and multidisciplinary teams:

- How does leading a team with a varied professional background differ from leading a team with a general team?
- In your experience, how have you adapted your leadership style when managing teams of different professional backgrounds?
- When managing a multidisciplinary team, are there specific skills or competencies that are more critical than those needed when managing teams with a more uniform skill set?

Closing questions:

- These are the questions, thank you for answering.
- Are there any aspects or topics you would like to share with me that haven't been addressed in this interview?

**Interview Questions Team Members (other than line manager) EN**

Goal: Exploring the role and responsibilities of line managers in multidisciplinary teams

Ask for permission to record and transcribe the interview and use the data for analysis.

Questions introduction:

- Can you please introduce yourself?
  - What is your name?
  - What is your position?
  - How long have you been working in this company?
  - What is your reason to be in a multidisciplinary team?
- Could you explain your experiences with being part of a multidisciplinary team?
- Are there any particular challenges or opportunities you've encountered while working in a multidisciplinary team?

Questions regarding the role of the line manager:

- How would you describe the role of the line manager within your multidisciplinary team?
- What do you think about the way the manager manages your team?
- What aspects could the manager improve or do differently in managing the team?
  - Why do you find that important?
- What specific expectations do you have from your manager in the team?
- Can you provide examples of how the line manager supports collaboration and coordination across different disciplines within the team?
  - What do you expect him to do regarding this (coordinating various disciplines and achieving collaboration)?
- Can you share positive aspects or strengths you've observed in how the managers handles various disciplines in the team?
- What are the essential skills and qualities for a manager leading multidisciplinary teams?
- How does the line manager support the performance of individual team members?
- From your perspective, how does the line manager balance the diverse needs and priorities of team members from different disciplines?
- How does the line manager encourage contribution from all team members, regardless of their discipline?

- How should disagreements arising from diverse disciplines within the team be handled by the line manager?
- How does the manager support the professional development among team members with different expertise and backgrounds?
  - o How is your line manager supporting your professional development considering you have another discipline?
  - o Is the line manager taking different approaches in professional development considering the different disciplines?
- How does your line manager assess performance and quality when dealing with outcomes from diverse disciplines?
  - o What should the line manager do to evaluate performance and quality?
- In what way does your manager facilitate knowledge sharing across disciplines within the team?
  - o How could he/she improve this?

Questions regarding the differences between the role of line managers in general teams and multidisciplinary teams:

- Based on your experience, in what ways do you see the line manager's responsibilities differing in the multidisciplinary team compared to a general team?
- Can you provide specific examples?

Closing question:

- These are the questions; thank you for answering.
- Are there any aspects or topics you would like to share with me that haven't been addressed in this interview?

## Interview Questions Line Manager and Team Members NL

### Interview Vragen Lijnmanagers NL

Doel: Het verkennen van de rol en verantwoordelijkheden van lijnmanagers in multidisciplinaire teams

Vraag toestemming om het interview op te nemen en te transcriberen en de gegevens te gebruiken voor analyse.

Inleidende vragen:

- Zou u zichzelf willen voorstellen?
  - o Wat is uw naam?
  - o Wat is uw functie?
  - o Hoelang werkt u al bij dit bedrijf?

Binnen mijn onderzoek naar multidisciplinaire teams beschouw ik ze als bestaande uit ten minste twee verschillende disciplines die samenwerken aan een gemeenschappelijk doel.

- Wat is uw rol als manager van een team?
- Op welke manier is uw team multidisciplinair?

Vragen over de rol van de lijnmanager:

- Wat is uw rol als manager van het multidisciplinaire team?
- Wat zijn uw verantwoordelijkheden bij het managen van dit team?
- Wat zijn de kansen en uitdagingen die gepaard gaan met de diversiteit aan disciplines binnen het team?
  - o Hoe gaat u om met deze uitdagingen?



- Hoe leidt u medewerkers met diverse vaardigheden?
- Hoe zorgt u ervoor dat de expertise van elk teamlid optimaal wordt benut om de doelen van het team te bereiken?
- Wat vindt u belangrijk bij het managen van een team met diverse disciplines?
  - o Wanneer bent u tevreden?
- Hoe bevordert u samenwerking en communicatie met teamleden met verschillende professionele achtergronden?
- Wat is uw rol bij het coördineren en toewijzen van werk aan de teamleden?
- Hoe verdeelt u taken en verantwoordelijkheden, rekening houdend met de uiteenlopende vaardigheden en expertise van uw team?
- Hoe verdeelt u middelen over verschillende disciplines met verschillende financiële behoeften?
- Hoe bewaakt u de kwaliteit en prestaties van het multidisciplinaire team?
  - o Hoe geeft u feedback aan iemand met een andere discipline achtergrond?
  - o Op welke manier stelt u prestatiedoelen?
  - o Individueel of op teamniveau?
- Hoe faciliteert u professionele ontwikkeling voor leden van uw team?
- Hoe zorgt u voor afstemming tussen organisatorische doelstellingen en diverse disciplineaire doelen en strategieën?
- Ervaart u conflicten tussen de verschillende disciplines binnen het team? Zo ja, wat zijn deze conflicten?
  - o Hoe lost u deze op?
  - o Welke benaderingen hanteert u?
- Welke motivatiestrategieën gebruikt u om teamleden van diverse disciplines te motiveren?
- Hoe motiveert u mensen uit verschillende disciplines?
  - o Welke motivatiestrategieën gebruikt u voor elke discipline?
- Wat is uw rol bij het bevorderen van kennisdeling in het team?
  - o Hoe doet u dit?
  - o Wat heeft u nodig om kennisdeling tussen disciplines te bevorderen?
  - o Wat vindt u lastig bij het bevorderen hiervan?
- Wat maakt het managen van een multidisciplinair team effectief?

Vragen over de verschillen tussen de rol van lijnmanagers in algemene teams en multidisciplinaire teams:

- Hoe verschilt het leiden van een team met een gevarieerde professionele achtergrond van het leiden van een team met een algemene samenstelling?
- Hoe heeft u uw leiderschapsstijl aangepast bij het managen van teams met verschillende professionele achtergronden?
- Zijn er bij het managen van een multidisciplinair team specifieke vaardigheden of competenties die belangrijker zijn dan die nodig zijn bij het managen van teams met een meer uniforme vaardigheden set?

Afsluitende vragen:

- Dit zijn de vragen, bedankt voor het beantwoorden.
- Zijn er aspecten of onderwerpen die niet zijn besproken in dit interview die u met mij zou willen delen?

**Interviewvragen Teamleden (anders dan de lijnmanager) NL**

Interview Vragen Teamleden (anders dan de lijnmanager) NL

Doel: Het verkennen van de rol en verantwoordelijkheden van lijnmanagers in multidisciplinaire teams

Vraag toestemming om het interview op te nemen en te transcriberen en de gegevens te gebruiken voor analyse.

### Inleiding vragen:

- Kunt u zichzelf voorstellen?
  - o Wat is uw naam?
  - o Wat is uw functie?
  - o Hoelang werkt u al bij dit bedrijf?
  - o Wat is uw reden om deel uit te maken van een multidisciplinair team?
- Wat zijn jouw ervaringen met het deel uitmaken van een multidisciplinair team?
- Zijn er bepaalde uitdagingen of kansen die u bent tegengekomen tijdens het werken in een multidisciplinair team?

### Vragen met betrekking tot de rol van de lijnmanager:

- Hoe zou u de rol van de lijnmanager binnen uw multidisciplinaire team beschrijven?
- Wat vindt u van de manier waarop de manager uw team aanstuurt?
- Welke aspecten zou de manager kunnen verbeteren of anders kunnen aanpakken in het managen van het team?
  - o Waarom vindt u dat belangrijk?
- Wat zijn uw specifieke verwachtingen van uw manager in het team?
- Kunt u voorbeelden geven van hoe de lijnmanager samenwerking en coördinatie tussen verschillende disciplines binnen het team ondersteunt?
  - o Wat verwacht u dat hij/zij hierover doet (coördineren van verschillende disciplines en het bereiken van samenwerking)?
- Kunt u positieve aspecten of sterke punten delen die u heeft waargenomen in hoe de manager verschillende disciplines in het team aanpakt?
- Wat zijn de essentiële vaardigheden en kwaliteiten voor een manager die multidisciplinaire teams leidt?
- Hoe ondersteunt de lijnmanager de prestaties van individuele teamleden?
- Vanuit uw perspectief, hoe balanceert de lijnmanager de diverse behoeften en prioriteiten van teamleden uit verschillende disciplines?
- Hoe moedigt de lijnmanager bijdragen aan van alle teamleden, ongeacht hun discipline?
- Hoe moeten meningsverschillen die voortkomen uit diverse disciplines binnen het team worden aangepakt door de lijnmanager?
- Hoe ondersteunt de manager de professionele ontwikkeling onder teamleden met verschillende expertise en achtergronden?
  - o Hoe ondersteunt uw lijnmanager uw professionele ontwikkeling gezien u een andere discipline heeft?
  - o Neemt de lijnmanager verschillende benaderingen in professionele ontwikkeling gezien de verschillende disciplines?
- Hoe beoordeelt uw lijnmanager prestaties en kwaliteit bij het omgaan met resultaten uit diverse disciplines?
  - o Wat zou de lijnmanager moeten doen om prestaties en kwaliteit te evalueren?
- Op welke manier faciliteert uw manager kennisdeling tussen disciplines binnen het team?
  - o Hoe kan hij/zij dit verbeteren?

### Vragen over de verschillen tussen de rol van lijnmanagers in algemene teams en multidisciplinaire teams:

- Op basis van uw ervaring, op welke manieren ziet u de verantwoordelijkheden van de lijnmanager verschillen in het multidisciplinaire team in vergelijking met een algemeen team?
- Kunt u specifieke voorbeelden geven?

### Afsluitende vraag:

- Dit zijn de vragen, bedankt voor het beantwoorden.
- Zijn er aspecten of onderwerpen die niet zijn besproken in dit interview die u met mij zou willen delen?