Self-managing team effectiveness within the technical service sector: the influence of team structure, leadership and group processes

Master thesis

Business Administration

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Date	19th of August, 2019

Abstract

The aim of this exploratory study was to investigate the effectiveness of self-managing teams within the technical service sector. Although substantial research has been conducted about what is needed for the effectiveness of self-managing teams, surprisingly little research has been conducted about the effectiveness of self-managing teams within this sector and in particular self-managing teams with team member diversity concerning knowledge and skills and a high degree of interdependency. Most studies were conducted in the health-care sector, banking sector, manufacturing sector, and service companies in insurance and telecommunications. This study investigated three important conditions for effectiveness of self-managing teams: team structure, leadership and group processes. This study was an exploratory, embedded single-case study which investigated one company, and three subsidiaries of it. It used semi-structured interviews as the main data collection method. In total, 12 interviews have been conducted with team members of self-managing teams. Within the interviews the critical incident technique has been used, and two daily processes were discussed: the quotation and the assignment process. Results showed that self-managing teams in this sector with a team composition that has team members with diversity in knowledge and skills and a high degree of interdependency, have a lot in common with self-managing teams in other sectors. Nevertheless, this study did reveal some interesting findings. Results show that self-managing teams in the technical service sector indeed are diverse in highly-specialized knowledge and skills, while also being interdependent upon one another in order to successfully serve the customer. This diversity and interdependence led to two different situations: team members shifting between teams and regular collaboration with third parties. Also, the type of contract with the customer and its complexity appeared to influence the team structure of these self-managing teams. Based on these findings, practical recommendations and recommendations for future research have been established.

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1 Introduction

1.1 Situation and complication

Similar to the 1990's, over the last couple of years there has once again been a revival of interest in self-managing teams and their effectiveness. This is not surprising since much evidence shows that flattened structures and transference of power from upper management to team-based autonomous structures, better known as self-managing teams, can contribute to organizational prosperity or success (Bernstein, Bunch, Canner & Lee, 2016). Organizational success is strongly related to effectiveness, and effectiveness generally is about performance. Team performance refers to the extent to which team members produce outputs that respect the standards set by the organization (Hackman, 1987; see also paragraph 2.2). Self-managing teams have been described as "one of the most far-reaching innovations of work design" (Johnson, Hollenbeck, DeRue, Barnes & Jundt, 2013, pp. 1). Such teams can contribute to organizational success by autonomously performing their tasks: they can rapidly modify their tasks and strategies for adapting to environmental changes and counteracting performance issues (Morgeson, 2005; Johnson et al., 2013). In the context of self-managing teams, autonomy also points towards an alternative for traditional leadership: power within truly self-managing teams is distributed among team members, through shared leadership where all members hold collective responsibility for project outcomes (Hackman, 2002). Moreover, advocators of self-managing teams argue that they are "close to the action", and that they should have more information about the cause of problems the teams are facing and will therefore make adequate changes to solve these problems (Johnson et al., 2013). Research also suggests that introducing the concept of self-managing teams within an organization, should lead to enhanced decision-making and performance through harnessing specialized knowledge and skills from all team members (Cooney, 2004). In other words, it could be argued that the effectiveness advantages of self-managing teams lie in their ability to respond quick to changing challenges. However, self-managing teams are not effective by definition: literature shows that certain conditions are needed. In other words, what do self-managing teams need to become effective?

Literature points to three crucial conditions for the effectiveness of self-managing teams: team structure, leadership and group processes (e.g. Cohen et al., 1996; Spreitzer, Cohen & Ledford, 1999; Marks, Mathieu & Zaccaro, 2001). Within these condition categories, different factors can be distinguished such as a clear and engaging direction, a real team task, rewards for team excellence, organizational support, responsibility, team goals and team norms (Stewart & Manz, 1995; Wageman, 1997; Druskat & Wheeler, 2003; Morgeson, 2005; see also chapter 2 'Theoretical framework'). Although substantial research has been conducted about what is needed for the effectiveness of self-managing teams, surprisingly little research has been conducted about the effectiveness of self-managing teams within the technical work field.

Most of these studies were carried out in the health-care sector (e.g. Weerheim et al., 2018), banking sector (e.g Ollilainen & Rothschild, 2001), manufacturing sector (e.g. Druskat & Wheeler, 2003, Morgeson, 2005) and service companies in insurance and telecommunications (e.g. Spreitzer, Cohen & Ledford, 1999; Ollilainen & Rothschild, 2001). No papers could be found that are specifically directed to the effectiveness conditions of self-managing teams providing services within the technical services sector and in particular self-managing teams with team member diversity concerning technical knowledge and skills and a high degree of interdependency. For example, when comparing the type of work in installation technology with work in homecare, it becomes evident that work in installation technology requires a wide range of specialized knowledge across different knowledge domains, which is distributed amongst different members of a self-managing team. In installation technology, the members of a self-managing team may possess specialized knowledge about electrotechnical

engineering and installation, building automation, mechanical engineering, cooling technology, fire safety or automatic control engineering to name a few (UWV, 2018). In self-managing teams providing homecare, the knowledge required by their members may be specialized, but is often possessed by all working members of the team. The work of one nurse can generally be substituted by the work of another nurse. Additionally, within for example the installation technology, team members might have to shift between different self-managing teams as they possess highly-specialized knowledge, and are therefore filling qualitative gaps that might be present within other teams. In other words, not all self-managing teams might possess all the required knowledge and skills to successfully serve their customers. Within for example homecare, team members might also have to shift between self-managing teams, but this could be more often because of quantitative or personnel shortages and not because of shortcomings in knowledge or skills. The notion of interdependence is therefore important here. As self-managing teams within the installation technology have a high degree of team member diversity concerning knowledge and skills, it is likely that there is a high degree of interdependence within the team, more so than in for example self-managing teams in homecare, as the diversity in knowledge and skills is generally lower. This may affect the effectiveness of such teams, as this might make team processes or coordination within those teams more complicated.

The aforementioned shows that research on the effectiveness of self-managing teams with team member diversity concerning knowledge and skills – and the subsequent interdependence - in the technical service sector is rather rare. In order to successfully analyze and grasp the entire context of the effectiveness of self-managing teams with knowledge and skills diversity and the subsequent interdependence in the technical service sector, this study will investigate three constructs that have been earlier referred to as crucial conditions for self-managing team effectiveness in general: team structure, leadership and group processes. These conditions encompass critical success factors for team effectiveness. The sketched shortcomings of previous research leads to the following research question:

"*Which dimensions of team structure, leadership and group processes play a role in the effectiveness of self-managing teams in the technical service sector – in particular self-managing teams with team member diversity concerning technical knowledge and skills, and interdependency?*"

However, given the current limited knowledge, for getting insight into the effectiveness of self-managing teams in the technical service sector and in particular of self-managing teams with team member diversity concerning technical knowledge and skills – and the subsequent interdependence -, an empirical exploration is necessary. It was decided to do so by adopting a case study research strategy (Yin, 2003): within one company three self-managing teams within three subsidiaries were subject to an empirical investigation using semi-structured interviews. The first and the second sub-question focus on the research company and will be presented at the end of the case-study description.

1.2 Case-study description

A qualitative explorative case-study has been carried out. The particular case that will be examined and used as a representative of a technical company in this study, is Unica. Unica is an appropriate setting to address the research question at hand, since the company provides its customers integral, all-round technological solutions in the field of safety, comfort & health, IT and energy & sustainability. This is reflected within the members of their self-managing teams, as they are diverse in technical knowledge and skills, and may therefore be dependent upon one another to successfully serve their customers. Unica is an independent provider of technical services in the Netherlands and currently employs 2200 people. The corporate structure of

Unica changed remarkably since its initial start as an installation company. Since 2017, Triton (an investment company) is in management control and the direction of Unica shifted towards a focus on growth and efficiency since this takeover. The goal of Triton is substantial growth with Unica in the upcoming years. Triton attempts to achieve this goal in several ways through e.g. takeovers of smaller companies and maximizing customer- and employee satisfaction. For the most part, Unica consists of two major branches: installation work and more smaller companies specialized in fire safety, security, building automation and energy solutions. Installation work consists of Unica Building Projects (UBP) and Unica Building Services (UBS). UBP is project-based work, where for instance an entire new hospital is built and where Unica provides integral installation work. This is in contrast to UBS, as this is contract-based work and is about maintenance of their services. UBS operates in 14 different subsidiaries spread around the Netherlands.

Since contract-based work entails more frequent visits to the specific customer, the managing director of UBS introduced the concept of 'klantteams' or self-managing teams. Through self-managing teams Unica looks to further improve revenue, effectiveness of services, customer satisfaction and employee satisfaction. These self-managing teams are introduced in every subsidiary of UBS. All the UBS subsidiaries consist of one site manager, one manager operations, secretary and multiple self-managing teams. All of the self-managing teams have their own set of customers and work through their own contracts. Every team has different contracts as they vary in size and amount. For instance, one team holds only one contract, where they provide their services to a hospital and other teams have more than 50 contracts, where they provide smaller service work.

From the beginning of the MSc thesis research trajectory it was clear that Unica wanted to learn more about the effectiveness of their self-managing teams. However, this is a very broad subject and for scope limiting reasons, as well as for meeting the interests of the company, an initial consultation with three company stakeholders took place. In two different interviews with the plant manager and contract manager of a subsidiary of Unica, it became evident that it was unclear how the self-managing teams exactly operate and perform and whether the self-managing teams yield the intended outcomes. The plant manager of one subsidiary showed considerable interest in the way teams communicate and how group processes play out and develop over time, where the contract manager argued that there are improvements to be made regarding management's leadership as well as leadership within teams themselves. Moreover, in a conversation the external advisor argued that there are uncertainties about team structure (e.g. roles within teams) and how this affects team performance, since there were differences in team performance across all teams. It remains unclear how different teams and their structures can be organized and what the role of ownership within teams is in determining performance. Thus, the managers and external advisor pointed towards the three condition categories of self-managing teams that have been mentioned earlier and are derived from literature: team structure, leadership and group processes. Additionally, the interviewees mentioned differences in the extent of implementation of self-managing teams across all of Unica's subsidiaries. Given the aforementioned, the first and second sub-questions can be formulated as follows:

Sub-question 1: *"How are the self-managing teams within Unica currently being structured, lead and how do group processes take place?"*

Sub-question 2: *"What can be done to further improve the effectiveness of the self-managing teams within Unica regarding team structure, leadership and group processes?"*

The next paragraph will show that answering the Unica specific questions will also contribute to filling the earlier mentioned knowledge gaps in the wider field of self-managing teams effectiveness in the technical service sector and in particular self-managing teams with team member diversity concerning technical knowledge and skills and interdependency.

1.3 Academic and practical relevance

This study chose to study self-managing teams within a technical services company and their effectiveness, while most studies are about self-managing teams within e.g. the healthcare or banking sector. Weerheim et al. (2018) researched self-managing teams within the health-care sector and argued that their results could be applicable to other sectors and self-managing teams, if the team members perform a practical job, had a comparable size and provide a service. However, the applicability and generalizability to other sectors, such as service teams within technical companies, is not researched and substantiated. As already discussed, the highly-specialized knowledge and skills diversity among team members that is in the installation technology, may cause alterations in team structure, leadership and group processes within the teams and could therefore influence team effectiveness. Results of other studies regarding self-managing teams may therefore not be applicable to teams operating in the technical service sector and such knowledge and skills diverse teams. Research is lacking when it comes to differences in self-managing teams in different work environments compared to the technical work field. Although it is argued that current literature would suffice for making speculations on how to further improve team structure, leadership and group processes, these speculations could be doubtful since these do not take into account the highly-specialized and diverse work and the effects this could potentially have on the teams. This current study is therefore looking to unfold the different features of self-managing teams within a technical company and looks how to further improve them. This exploratory study is therefore looking to fill the current gap in academic knowledge regarding this issue. This will provide a basis for further future research.

Furthermore, the gained knowledge can be immediately be put to practical use to further improve the effectiveness of self-managing teams. A closer look into the different features - especially team structure, leadership and group processes - of self-managing teams and perceptions of different team-members, will create an understanding of the different features and how these affect team effectiveness or performances. Since these features will be studied not only theoretically, but also in the real world through an empirical case-study, the results are directly applicable to Unica and beyond: to comparable companies with a comparable self-managing team diversity. As such, the research provides a basis on which companies could potentially further improve the organization of their teams with regard to team structure, leadership and group processes.

In the next chapter 'Theoretical framework' the key concepts with regard to the research question will be introduced and explained. Then in the 'methodology' the type of research that has been conducted, the way of data-collection and data analysis will be explained. Afterwards, within the 'results' section, the results will be presented. And finally, within the 'discussion' section any results will be discussed and interpreted alongside the original research question.

2 Theoretical framework

In this section, key concepts with regard to the research question and sub-questions are addressed. At the outset, the concepts and dimensions with regard to the notion of self-managing teams will be described.

2.1 Characteristics of self-managing teams

The introduction of self-managing teams is nothing new, as it has become standard practice within organizations nowadays. Self-managing teams are mostly implemented to improve the quality, productivity and the quality of work life (QWL) (Cohen & Ledford, 1994). They aim to deliver superior performance benefits when compared to the more traditional hierarchical team structures (Stewart & Barrick, 2000). Various definitions of self-managing teams have been put forward, where Hackman (1987) described them as non-hierarchical groups that execute specific tasks, while being responsible for their own performance and monitoring. Cohen and Ledford (1994) describe them as *groups of interdependent individuals that can self-regulate their behavior on relatively whole tasks.* Self-managing teams typically consist of members that have a variety of skills relevant to the group task, where the team as a whole receives feedback on its own performance. The definition of Cohen and Ledford (1994) will be used as a definition for self-managing teams in this study.

There is however a distinction to be made between working groups and teams. A working group's performance is what members perform individually, while a team's performance includes both individual results as well as a collective work-product. The latter represents the actual joint contribution of the team members altogether. Teams create discrete work-products through contributions of each of their members, which results in a team being more than the sum of its parts (Katzenbach & Smith, 1993). Teams in that regard therefore differ from working groups since they require individual and mutual accountability.

Moreover, this mutual accountability is further enhanced within self-managing teams, because they are different compared to the traditional management structures. In traditional management structures it is the manager who performs tasks such as planning, organizing, staffing and monitoring and where the teams perform core production activities (Weerheim, van Rossum & ten Have, 2018). Whereas in non-hierarchical structures – and thus self-managing teams – the role of a manager is different and changes towards a coaching style of management. It is the self-managing teams that are responsible for both management and production. Teams therefore have operational tasks as well as tasks related to leadership. Self-managing teams are therefore increasingly autonomous and are responsible for a range of tasks e.g. work schedules, within-team job tasks, solving interpersonal and quality problems and conduct team meetings (Manz & Sims, 1993; Stewart & Manz, 1995, Laloux, 2014). In some occasions the role and responsibilities of a manager are dropped or sometimes entirely eliminated (Laloux, 2014; Weerheim et al., 2018).

Since self-managing teams and their effectiveness are widely researched and the concept is introduced within organizations worldwide, a lot of different small varieties between self-managing teams and their implementation within organizations exist. However, most of the self-managing teams could be characterized as described by Hollenbeck, Beersma and Schouten (2012) in their proposed conceptual system. In this system they describe teams on continuum of three variables: temporal stability, skill differentiation and authority differentiation. Self-managing teams would score in the middle on the temporal stability continuum, indicating that they often exist for a certain period, and are not used for a one-time project alone. They score in the middle on the skill differentiation continuum, indicating that there is a difference in specialized knowledge across the team, which makes team members rely on each other and not very easily substitutable. Finally, self-managing teams score low on the authority differentiation continuum, indicating that decision making is a collective effort and that it resides with the

team's members themselves (Hollenbeck et al., 2012). The most outstanding feature of self-managing teams compared to regular teams would therefore be scoring low on authority differentiation resulting in collective or shared decision making within the teams themselves.

2.2 Self-managing team effectiveness

2.2.1 Self-managing team effectiveness

Teams in the general sense, could be characterized as moving through a three-stage system where they utilize resources (input), maintain internal processes (throughput) and produce specific products (output) (Mickan & Rodger, 2000). It is the outcome that is often used to judge the team's effectiveness. Specifically, self-managing teams' effectiveness have been described in various ways in the literature. In his study Wageman (2001) argued that self-managing team effectiveness consists of three components: task performance, group process and individual satisfaction. Task performance refers to the degree to which the team's product or service meets the standards of those that require it, group process refers to the degree to which members interact with each other and which allows them to work increasingly well overall, and individual satisfaction is the degree to which the group experience is more satisfying than frustrating to the team members (Wageman, 2001). However, according to Mathieu et al. (2008), the dimension "team performance" is the most prevalent criteria used in research and in organizations to assess team effectiveness. Team performance refers to the extent to which team members produce outputs that respect the standards set by the organization (Hackman, 1987). These standards are often established as quality and quantity of work, production costs budget or delivery time (Kline & Sulsky, 2009). A high level of team performance should indicate that a team accomplishes set tasks and contributes to organizational success (Rousseau & Aubé, 2010). This study will also define self-managing team effectiveness as the extent to which team members produce outputs that respect the standards set by the organization, since according to the literature, team performance is a valuable criteria used to assess team effectiveness (Hackman, 1987; Rousseau & Aubé, 2010).

2.2.2 Antecedents of self-managing team effectiveness

There is a vast amount of literature concerning team effectiveness and a wide range of characteristics have been proposed. Hackman (2002) identified five characteristics for effective team performance. First of all, a clear direction and a goal is required so that teams can focus its efforts while simultaneously allowing for evaluation of performance. Second, teams need good leadership to manage their internal and external relations, and which orients teams towards their common goals. Third, teams need tasks that facilitate teamwork, such as complex and challenging tasks that require an integrated effort of its team members. Fourth, teams need appropriate resources, like material, human and financial resources. Finally, the organizational environment should be supportive of allocating sufficient power to the teams to allow them to make their own decisions and implement those (Hackman, 2002; Gilley, Morris, Waite, Coates & Veliquette, 2010).

Similar and additional characteristics that influence effective team performance have been identified by Mickan and Rodger (2000) who studied general teams. They divided these characteristics in three levels: organizational function, team function and individual function. The organizational function refers to structural characteristics of teamwork, namely a clear purpose, appropriate culture, specified task, distinct roles, suitable leadership, relevant members and adequate resources. The characteristics already described by Hackman (2002) could all be characterized as belonging to this organizational function. Furthermore, Mickan and Rodger (2000) add team function and individual function to their list of antecedents for effective team performance. The team function entails aspects of interaction and patterns of

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organizing the transformation of input into output, like coordination, communication, cohesion, decision making, conflict management, social relationships and performance feedback. This function might be especially important within the non-hierarchical structures like self-managing teams, as the responsibilities and authorizations reside at a lower level and are a collective effort. Finally, the individual function refers to experience and skills within a team. Participation in a team requires at a minimum self-knowledge, trust, commitment and flexibility (Mickan & Rodger, 2000). An overview of these characteristics can be found in table 1.

Table 1
Antecedents for effective team performance (Mickan & Rodger, 2000)

Organizational function	Team function	Individual function
Clear purpose	Self-knowledge	Coordination
Appropriate culture	Trust	Communication
Specified tasks	Commitment	Cohesion
Distinct roles	Flexibility	Decision making
Suitable leadership		Conflict management
Relevant members		Social relationships
Adequate resources		Performance feedback

Literature proposes different views on the effectiveness self-managing teams compared to traditionally managed teams (Weerheim, et al., 2018). On an organizational level, self-managing teams can decrease costs and make them more flexible, which is deemed important in a world that is highly changing (Power and Waddel, 2004; Weerheim et al., 2018). However, the role of leadership is very important in this regard. Management and team leaders should be sufficiently skilled to lead their teams and all necessary roles within the teams should be fulfilled. The leadership styles and patterns employed by management should furthermore fit the team's developmental stage, since this may differ amongst teams (Gilley et al., 2010). On a team-level, self-managing teams have underlying factors that cause them to be more effective compared to traditional work teams resulting in increased performance, better quality of work-life and higher levels of job satisfaction (Cohen & Ledford, 1994; Weerheim et al., 2018). And on an individual level it allowed team members to more successfully learn from each other's skills (Weerheim et al., 2018).

Furthermore, commitment and flexibility are also important aspects of teams. Through commitment, teams can become a powerful unit of collective performance and through flexibility teams are allowed to develop their own specific goals, which results in a purpose (Katzenbach & Smith, 1993; Mickan & Rodger, 2000). The construction of team specific goals is important because teams define a set of work-products both different from organizational and individual objectives, it facilitates communication and constructive conflict, it facilitates the attainability of specific goals and it helps maintain focus while being compelling and allowing a team to achieve small wins (Katzenbach & Smith, 1993). The effectiveness of self-managing teams is also related to a successful implementation, since introducing self-managing teams within an organization is often experienced as a difficult process. Applying changes to the current management structure is often described as "*not a quick fix*" (Attaran & Nguyen, 1999; Weerheim et al., 2018).

Bondarouk et al. (2018) also argued that the implementation of self-managing teams is not a straightforward process as it consists of various phases. In their book they propose a four-phase implementation process for self-managing teams, distinguishing between the phases Initiation, Adoption and Adaptation, Use, and Incorporation of SMTs in the organization. This

is not regarded as a linear process but rather a process that should be seen as dynamic, where the different SMTs can start at each of the phases and may move along the different levels based on their needs (Bondarouk et al., 2018).

2.3 Industrial and technical sector
Most of the research regarding self-managing teams and their effectiveness has been conducted in the health-care sector. In general, organizations operating in the industrial markets - and in particular organizations providing technical services - have not been studied thoroughly regarding self-managing teams and their effectiveness. This is remarkable since a lot of organizations in this sector have already or are starting to introduce the concept of self-managing teams.

The technical sector in the Netherlands currently consist of 1.264.000 working people (CBS, 2019). The sector consists of jobs related to for example research, technology, construction and industry, process operators and installation technology. Most of the companies in this sector have to deal with staff shortages and open vacancies. Work in this sector can be considered as 'heavy work', where employees often have lower levels of education, started working early and have a shorter life expectation. Because of physical pressures in these jobs, it is possible that people avoid these particular jobs, which further increases the staff shortages, which brings along unique challenges. In 2018 almost 90% of the technicians are male and 80% of the technicians are working full-time (UWV, 2018).

It is important to study the concept of self-managing teams and their effectiveness in these industrial markets since there is a difference between organizations and people operating in for example the health-care sector and the industrial sector. Organizations in the health-care sectors, face entirely different challenges compared to organizations in the industry. Within the industry the competition is becoming more intense and fierce (Matthyssens & Vandenbempt, 1998). Industrial customers are becoming more professional and are globalizing their approaches, and due to globalization of competition and deregulation, rapid technological changes are afoot (Matthyssens & Vandenbempt, 1998). Industrial organizations are confronted with the need to respond to time-based competition, price pressures and faster commodization (Matthyssens & Vandenbempt, 1998). Providing services are therefore crucial to cope with the increasing competition and environmental challenges.

As already discussed in the introduction, technical work can be characterized as highly specialized and highly interdependent. This is reflected within self-managing teams within this sector, as there is team member diversity concerning technical knowledge and skills. Within for example the installation technology, members may be specialized in electrotechnical engineering and installation, building automation, mechanical engineering, cooling technology, fire safety or automatic control engineering (UWV, 2018). It is therefore very unlikely that a single person harnesses all this specialized knowledge, which often results in multiple members in a team or company that specialize in their "own" domain. But since customers generally request a multitude of these specialized knowledge domains, it causes a high degree of interdependence within the self-managing teams and its members in order to successfully serve their customer. Additionally, team members could therefore shift between self-managing teams because of shortcomings in knowledge (or qualitative gaps), while in other sectors - like the health-care sector - this might be more often because of shortcomings in personnel (quantitative gaps). Of course, within the technical service sector, shifts because of personnel shortages may also occur.

2.4 The main conditions for self-managing team effectiveness: Team structure, leadership and group processes

The change in authority or responsibilities that accompanies the implementation of self-managing teams may turn out to be troublesome in practice and is influenced by a wide range of aspects (Wageman, 1997). Organizations often observe slow or non-existing progress in self-managing team's efforts to take their responsibility for tasks that previously belonged to managers or hierarchical leaders. As already mentioned, the individual function appears to be an important antecedent for self-managing team effectiveness (Mickan & Rodger, 2000). This section will not describe the individual function as a dimension on its own, as this individual function and its components correspond with the group processes described by Marks, Matthieu and Zaccaro (2011) further on in this section. Nevertheless, the dimensions team structure, leadership and group processes will be described as these three subjects cluster the different important aspects of self-managing teams and their effectiveness in the most thorough manner.

2.4.1 Team structure

It could be argued that sociotechnical systems (STS) theory and design form the foundation by which self-managing teams are constructed. Sociotechnical systems view production systems as consisting of both technological and social parts, while simultaneously including the task environment (Cummings, 1978). Technological parts consist of equipment and methods of operations used to transform materials into products or services and where social parts consist of the work structure that relates people towards the technology and to each other (Cummings, 1978; Clegg, 2000). These systems must also relate effectively to their respective task environment. Self-managing teams are an attempt to successfully design and therefore relate the social and technological parts with each other, while simultaneously considering the task environment (Cummings, 1978; Laloux, 2014).

STS theory suggests that there are three main conditions to facilitate the self-managing teams: task differentiation, boundary control and task control (Cummings, 1978; Clegg, 2000). First, task differentiation refers to the extent to which a group's task is a self-completing whole. If a team's task is more autonomous, then the task boundary will be more differentiated from other organizational units. This task discontinuity facilitates technically required cooperation through bounding interdependent tasks into a whole, while increasing the likelihood that technical variances will be contained within that self-managing team's boundaries, remedying exportation of tasks across teams (Cummings, 1978; Kuipers, van Amelsvoort & Kramer, 2010). Laloux (2014) found that "parallel teams" is the structure he encountered the most in his research and argues that it is highly suitable when work can be broken down in ways that teams have a high degree of autonomy and ideally performs all tasks from start to finish. Second, boundary control refers to the extent in which employees can influence transactions within their task environment. Finally, task control refers to the extent to which employees can regulate their behavior in the process of converting raw materials into products (Cummings, 1978). These three conditions directly relate to a team's capacity to manage themselves.

More recent work of Wageman (2001) suggests that one of the ways to ensure effectiveness of self-managing teams is to establish features within those teams that foster self-management and performance effectiveness (Wageman, 2001). Early work of Cohen et al. (1996) argue that a group should have sufficient expertise, an adequate group size and stability within the group. Through group expertise a team creates a right mix of people with task-relevant knowledge and skills. An adequate group size fosters the appropriate number of members to perform well on the task at hand, as well as consisting of the smallest amount of people needed. This is because larger teams require more coordination and could result in process losses (Cohen et al., 1996). Finally, Cohen et al. (1996) argue that the continuity of group membership is important, as considerable time is lost orienting new members to

requirements within a team and the way that specific group works. The loss in time may influence team effectiveness.

Furthermore, the design features presented by Cohen et al. (1996) are also present in the four general conditions that Wageman (2001) proposed. When these four general conditions for team design are met, self-managing team effectiveness is fostered. These conditions are also partially based on earlier literature and on the already mentioned work of Hackman (1987; 2002). The four conditions are:

(1) A real team. Real teams are defined for present purposes, bounded by social systems with clear membership and that exist relatively stable over time. This allows members to behave as a collective (Wageman, 2001). This is a very important - and often overlooked - criterion, but it serves as the foundation for all the rest.

(2) A clear direction. A clear direction refers to the degree in which the purposes of the specific team are stated clearly and the focus on the outcome that is expected instead of the details of the means that are used to achieve it (Cohen et al., 1996; Wageman, 2001).

(3) Enabling team structure. This includes five important design features (Wageman, 2001). First, appropriate team size. The size of the team should not be larger than the minimally required amount of people to fulfill the job (Druskat, 1995). Second, optimal skill diversity. There should be substantial heterogeneity of task-relevant skills among members (Wageman, 2001). Third, task interdependence. Members of the team should be dependent upon one another to accomplish the collective task (Wageman, 1995). Fourth, challenging task goals and performance targets and finally articulated strategy norms. These norms legitimize and support strategizing and planning by the team (Cohen and Ledford, 1994; Wageman, 2001).

(4) Supportive organizational context. When in place, a supportive organizational context provides several benefits, namely: (a) a reward system that recognizes team performance, (b) an information system that provides the team members with information to effectively plan their collective work, (c) an educational system to provide training or technical consultation for aspects of work that they are not competent to handle themselves and (d) the required material to successfully carry out their tasks. This supportive organizational context is also an aspect that Cohen et al. (1996) found very important as they argued that in order for SMTs to be effective, several elements within an organization should be moved down to lower levels. They mention five design elements, namely: power, information, resources, training and rewards. This is in accordance with sociotechnical systems theory and Wageman's proposed supportive organizational context, as they also propose that the organization should sufficiently support and offer teams resources and power to fulfill day-to-day work.

In their research they found that team design is often largely in hand of the team's immediate managers. These managers were able to redesign rewards, alter the tasks, change the direction and provide resources to the teams (Wageman, 2001). The better the design conditions, the more the teams become self-managing and the better their team performance was. However, the choices to alter design conditions, may be influenced by a team's previous performance. Teams that are designed sufficiently are more likely to be given further authority over their work, more resources and more challenging goals (Ancona & Caldwell, 1992). Teams that receive fewer support conditions tend to not use any authorizations they have, and their performance is also worsened. This may cause team leaders or management to allocate less resources to these teams, while this may crucial in remedying their performance problems (Wageman, 2001).

2.4.2 Leadership

Traditional leadership or hierarchical leader behavior is often identified as a primary reason as to why self-managing teams fail to develop and produce expected outcomes such as increased productivity, quality and QWL (Stewart & Manz, 1995). Since implementation of self-

managing teams shifts the role of management and team leaders, they often face difficulties. Team leaders now have to balance between leader guidance and employee participation (Stewart & Manz, 1995). Stewart & Manz (1995) describe this dilemma as *"how does one lead others who are supposed to lead themselves?"* (p. 750). Difficulties regarding this dilemma often result in negative supervisor reactions like resistance to change, role conflict, unwillingness to let go of power, fear of appearing incompetent and fear of job termination (Stewart & Manz, 1995). There often is a legitimate lack of control over team actions and decisions, and the large number of teams that a leader is responsible for, makes the role of leader very complex and demanding. There is a distinction to be made between two different kinds of leadership: management- and team leadership.

Management leadership
Management or external leadership plays an important role in effectiveness of a self-managing team. First, self-managing teams rarely have full decision-making authority, which leaves the external leader to make key decisions, e.g. hiring, dealing with customers, and purchasing new equipment (Yukl, 2002; Morgeson, 2005). Second, external leaders are ideally suited to perform activities such as encouraging a team or dealing with unexpected problems (Morgeson, 2005). Finally, external leaders are often found in team-based environments and they can have a positive impact on the team functioning. Nonetheless, most traditionally held responsibilities by top board or management falls away, which changes the role management must adopt (Laloux, 2014).

Stoker (2008) argues that theories describing effective leadership for self-managing teams often focus on two distinct styles: directive- and coaching leadership. Directive leadership refers to situations where the leader defines, directs and structures the roles and activities of others towards attainment of the team's goals. The leader tells employees what to do and how to do it. Whereas behavior related to a coaching style is often defined as a day-to-day, hands-on process of helping employees to recognize opportunities to improve performance and capabilities (Wageman, 2001; Stoker, 2008). It is about providing guidance, encouragement and support to the self-managing teams (Laloux, 2014). Their study suggests that both leadership styles may be effective and important for self-managing teams, since teams with short tenures may benefit from directive leadership, and where more established teams may benefit from coaching leadership.

Shared leadership
The flatter organizational structure that is accompanied with the introduction of self-managing teams resulted in shared leadership in teams. In this study shared leadership will be defined as: *"an emergent team property that results from the distribution of leadership influence across multiple team members"* (Carson, Tesluk & Marrone, 2007, p. 1218). Through shared leadership patterns of reciprocal influence are created, which further develop and reinforce relationships between team members (Carson et al., 2007). Team empowerment was found to facilitate the development of shared leadership, by motivating team members to exert influence. However, a team can experience high levels of empowerment, while still having an influential external leader, resulting in little to no shared leadership. Nonetheless, research has shown that shared leadership yields outcomes like successful team performance, team effectiveness, new venture performance and sales performance (Barnett & Weidenfeller, 2016). More studies found that shared leadership predicted team performance after controlling for vertical leadership (Wang et al., 2014; Nicolaides et al., 2014). Shared leadership has therefore proven to be effective.

When introducing shared leadership within a team, a set of two activities were found to be important (Katz & Kahn, 1978). First, team members must offer leadership and must seek

to influence motivation, direction and the support of the team. Second, the entire team must be willing to rely on the leadership provided by multiple team members. Team members must believe that offering influence and the acceptance of it are constructive actions. In order to effectively develop shared leadership, there must therefore be an internal team environment supportive of the shared leadership and supportive coaching provided by the external leader. An effective internal team environment consists of a shared purpose, social support and voice. It is these three dimensions that mutually reinforce each other, e.g. when a member is able to speak up (voice), then they are more likely to exert leadership in their team.

Barnett and Weidenfeller (2016) propose that the vertical counterpart – or management leadership – plays a key role in in positioning members to share their leadership. They propose that the use of transformational leadership behavior and empowering leadership styles can facilitate the emergence of shared leadership. In contrast to Stoker's (2008) reasoning that a directive leadership style may be effective, they found that shared aversive and directive leadership was negatively related to team effectiveness and that these leadership styles should be avoided when shared leadership is the primary objective (Boies, Lvina & Martens, 2010; Barnett & Weidenfeller, 2016).

2.4.3 Group processes

In groups or teams, different processes can influence effectiveness or performance. Various definitions of group processes are proposed in the literature, but the one used in this study is: "*members' interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals*" (Marks, Mathieu & Zaccaro, 2001, p. 357). Through team processes, team members work interdependently to utilize resources (e.g. skills, financial means) to produce meaningful outputs or outcomes. Teams use different forms of team processes to achieve this. In their paper Marks et al. (2001) make a distinction between group processes and what they call 'emergent states'. This is important since this can be considered an important distinction. Previous work of Cohen et al. (1996) already proposed different important group "processes" that can influence team performance. In their paper they argue that there are several group characteristics that can contribute to team effectiveness, namely group beliefs (group norms and group self-efficacy) and group processes (group coordination and group innovation processes).

Contrary to their description of these phenomena as group "processes", Marks et al. (2001) described these mentioned processes as 'emergent states'. Emergent states describe cognitive, motivational, and affective states of teams and are defined as "*constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes and outcomes*" (Marks et al., 2001, p. 357). They are not processes of themselves, as they do not describe the nature of member interaction.

Moreover, Marks et al. (2001) propose a model of team processes, where team performance is best viewed as a series of related input-process-output episodes. Different processes are present in different stages of task accomplishment. Teams differ in their focus, which results in action and transition phases. Action phases are "*periods of time when teams are engaged in acts that contribute directly to goal accomplishment*" and these actions may vary widely dependent on the team type and profession (Marks et al., 2001, p. 360). Transition phases are "*periods of time when teams focus primarily on evaluation and/or planning activities to guide their accomplishment of a team goal or objective*" and are times when teams take inventory of their performance and plan ahead for the future (Marks et al., 2001, p. 360).

Both the transition and action phases revolve around different types of group processes (Marks et al., 2001). The different group processes proposed are: mission analysis, goal specification, strategy formulation and planning, monitoring progress towards goals, systems

monitoring, team monitoring and backup, coordination, conflict management, motivating and confidence building and affect management. The different processes that are present during the different phases are depicted in figure 1.
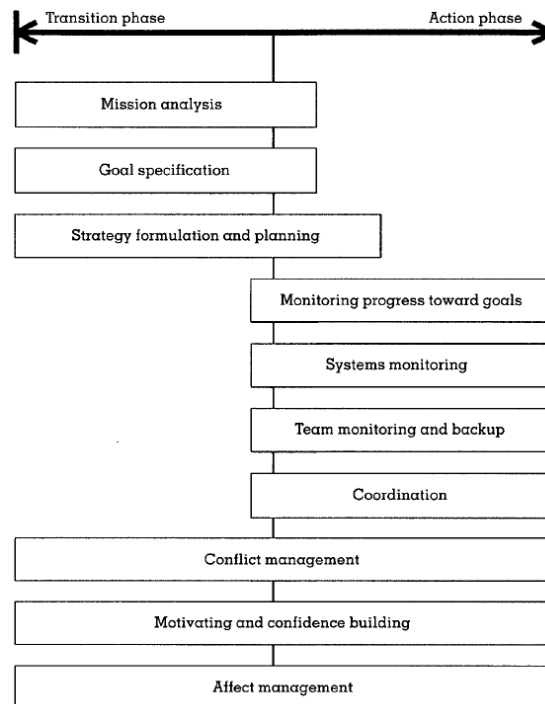

Figure 1: *Processes in transition and action phases. Note*. Reprinted from Marks, M. A., Mathieu, J.E. & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes, *Academy of Management Review, 26*(3), p. 364.

During the transition phase, mission analysis, goal specification and strategy formulation and planning are important processes (Marks et al., 2001). First, mission analysis can be described as interpreting and evaluating the team's mission, including specifying main tasks and environmental conditions and resources that are available. Second, goal specification refers to identifying and prioritizing goals and sub-goals to accomplish the goal at hand. Third, strategy formulation and planning refer to developing alternative courses of action to accomplish the mission. This last process could also occur partially during the action phase, since strategic changes to the plan at hand may be required.

The action phase entails different processes, namely: monitoring progress toward goals, systems monitoring, team monitoring and backup and coordination (Marks et al., 2001). First, monitoring progress towards goals refer to the tracking of tasks and progress towards the set goals, interpreting what still needs to be done and transferring this to all team members. Second, systems monitoring refers to the tracking of resources (e.g. personnel and equipment) and environmental conditions (e.g. news events, weather patterns). Third, team monitoring and backup refers to the assisting team members to perform their tasks through verbal feedback, behavioral assistance and completing another members' task. Finally, coordination activities refer to the process of optimizing the order of activities and timing of interdependent actions.

Moreover, there are different group processes that teams use to manage the interpersonal relationships within the teams. These processes occur both in the action and transition phases and are often the foundation for the other already mentioned group processes (Marks et al., 2001). These processes are conflict management, motivating/confidence building and affect management. Conflict management can be distinguished into two types: preemptive and reactive conflict management. The first refers to establishing conditions to prevent, control and guide team conflict before it even occurs, while the latter involves working through e.g.

interpersonal disagreements (Marks et al., 2001). Motivating/confidence building refers to generating and preserving the sense of motivation and collective confidence regarding the accomplishment of the task at hand. And finally, affect management refers to the regulation of member emotions, such as social cohesion, excitement and frustration (Marks et al., 2001).

Finally, the notion of team psychological safety appears to be a crucial factor for effective teams (Edmondson, 1999). Team psychological safety is defined as "*a shared belief that the team is safe for interpersonal risk taking*" (Edmondson, 1999, p. 354). This belief is mainly taken for granted and is not given direct attention to by the team or its members. Team psychological safety goes beyond interpersonal trust as it argues that the team climate is characterized by interpersonal trust and mutual respect, and where the members feel comfortable being themselves (Edmondson, 1999). Team psychological safety is beneficial to teams since it facilitates learning behavior as it alleviates excessive concern about others' reactions to actions that have the potential for embarrassment, which is often the case with learning behaviors (Edmondson, 1999). Team psychological safety is therefore considered as an important factor in self-managing teams and the group processes that are related.

2.5 Conceptual model

In figure 2 all dimensions regarding team structure, group processes, leadership and self-managing team effectiveness and have been depicted. The theoretical framework showed that three condition categories for self-managing team effectiveness should be taken into account: team structure, leadership and group processes. According to Wageman (2001), real team, clear direction, enabling team structure and a supportive organizational context are important factors within the condition team structure, which is why they will be included in the conceptual model. Marks, Mathieu and Zaccaro (2001) presented different group processes, which affected the self-managing teams. No attention has been paid to the processes mission analysis, goal specification and strategy formulation in the transition phase, as these are out of bounds for the self-managing teams within Unica. This study focused on the group processes directly relevant to the teams at hand. This study will therefore focus on the following processes: monitoring progress, systems monitoring, team monitoring and backup, coordination, conflict management, motivating and confidence building and affect management. The dimension team psychological safety is also added as a variable since research shows that it is an important factor for interpersonal risk taking, which may be beneficial to the team's effectiveness as it allows members to feel comfortable being themselves, while alleviating concerns about other's reactions (Edmondson, 1999), which is important since self-managing teams often require clear and straightforward communication between its members. Finally, leadership will be studied through examining both management- and shared leadership as these are important factors in determining self-managing team effectiveness (Stoker, 2008). It was mentioned before that not much research has been done about self-managing teams within the technical service sector characterized by team member diversity in knowledge and skills and a high degree of interdependence. But, as the conditions for self-managing team effectiveness have been derived from research in different contexts, it might be that the impact of these general conditions differ within this sector as the teams are diverse in knowledge and skills and may be highly dependent upon one another. This may therefore make group processes like coordination and general monitoring more complicated compared to more traditional self-managing teams, which could therefore affect their effectiveness. In other words, team member diversity concerning knowledge and skills and a high degree of interdependence, might moderate the relationship between the proposed conditions and self-managing team effectiveness.
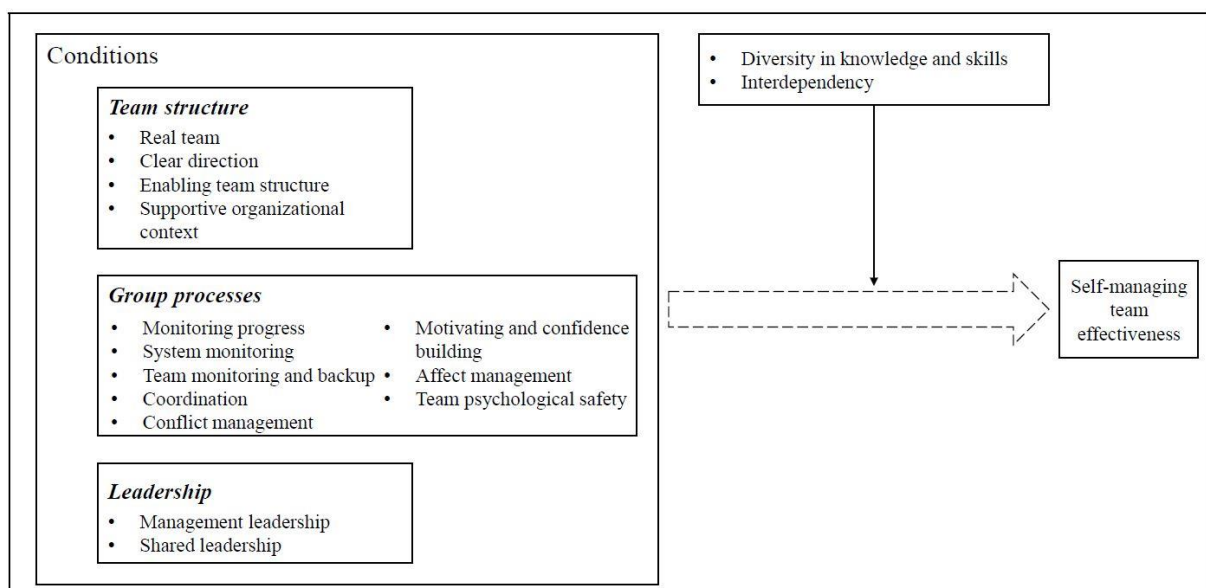

Figure 2: Proposed model of relationships between group team structure, leadership and group processes on the effectiveness of self-managing team with diversity in knowledge and skills and interdependence.

3 Methodology

As previously explained the goal of this research is to investigate how the self-managing teams within Unica are currently being structured, lead and how group processes take place. It will also look for ways to further improve the effectiveness of self-managing teams regarding team structure, leadership and group processes within Unica. The context of the study, research questions and academic & practical contributions can be found in chapter 1 'Introduction'.

3.1 Research method

This research is an embedded single case-study. This is because within the single company – or Unica in this case - three subunits or subsidiaries have been investigated (Yin, 2003).

For this exploratory case-study, semi-structured interviews were used as the main data collection method. Additionally, document analysis of financial reports was also used as a research method to obtain insights into the objective financial performance. According to Yin (2003), case study research allows for exploration and understanding of complex issues. It is considered a robust research method, especially when a holistic and in-depth investigation is required. Case studies have a number of advantages compared to other research methods. First, the examination of data is conducted within the actual or regular situation, and where the subject is observed within their environment (Yin, 2003). Second, case studies allow for both quantitative and qualitative analysis of data. Third, through case studies detailed qualitative accounts can be obtained, which could also help to explain the complexities of real-life situations, which may be harder to capture through experimental or survey research (Zainal, 2007). In contrast, literature also points to criticisms of case-study research. Yin (2003) argued for three types of arguments against case study research. First case studies are prone to lacking rigour, where Yin (2003) argues that the researcher can be sloppy and allow for biased views to direct the findings and conclusions. Second, case studies provide minimal basis for scientific generalization, as research is often conducted with a small number of subjects. And finally, case studies are often characterized as being too difficult or too long to conduct, as they produce a massive amount of data (Yin, 2003). Nevertheless, within this research an embedded single case study is deemed a good research method. After all, this study attempted to explore and obtain insights into different perspectives within a technical company on team structure, leadership and group processes. Through using the embedded single case study as a research strategy, the possibility to obtain in-depth data on different perspectives of crucial organizational actors was made possible. In order to minimize errors and biases within this study, and therefore increase the reliability, this study attempted to make different steps about data collection as operational as possible while providing the codebook and interview scheme that were used (further on in this section and in the appendix). With regards to external validity, critics often state that single cases offer a poor basis for generalizing. This study does therefore not attempt to generalize to other cases, as no set of cases is likely to deal satisfactorily with the external validity complaint, but attempts to generalize findings toward "theory", also known as analytical generalization (Yin, 2003).

Within the interviews that were conducted in this study, the critical incident technique (CIT) was used. The CIT is a method that relies on a set of procedures to collect, analyze and classify observations of human behavior (Gremler, 2004). By using this CIT, respondents are simply asked to recall some specific event, where they can use their own terms and language to describe them during the interviews (Stauss & Weinlich, 1997). Respondents therefore have the opportunity to give a detailed description of their own experiences with regards to these events (Stauss & Weinlich, 1997). Literature points to several advantages of the CIT. First, collected data is from the respondent's perspective and it is described in their own words (Edvardsson, 1992). Through the use of the CIT, respondents are allowed to have a range of responses within the overall research framework (Gabbott & Hogg, 1996). In other words, the

context is developed entirely from the respondent's perspective. Second, the CIT is inductive in nature, where it is useful when the subject at hand is rarely researched and documented, when it is used as an exploratory method to increase knowledge or when a thorough understanding is needed (Bitner, Booms & Tetreault, 1989; Grove and Fisk, 1997). Other advantages of using the CIT, are related to the fact that CIT can be used to obtain accurate and in-depth record of events, it can provide a rich set of data, and it is particularly well suited for assessing perceptions of respondents from different cultures. Literature also points to several disadvantages of the CIT method. It has been criticized on issues of reliability and validity, as reported stories can be misinterpreted or misunderstood (Edvardsson, 1992; Gabbot & Hogg, 1996). Also, since CIT is a naturally retrospective research method, it has been critized as being flawed by recall bias, requiring accurate and truthful reporting of incidents, and it may lead to reinterpretations of the incident on the respondents' side (Johnston, 1995; Michel, 2001).

Nevertheless, it is a research technique often used in service research and it has the objective *to gain understanding of the incident from the perspective of the individual, taking into account cognitive, affective and behavioral elements* (Gremler, 2004, p. 66). The reason this technique was used is because through the CIT it is possible to gain insights into real-life cases and processes, while simultaneously getting an insight into the team structure, leadership and group processes within these daily cases. During the interviews in this study, respondents have been asked to recall two specific processes they encountered on a day-to-day basis, where they are allowed to use their own terms and language to describe those situations. During these interviews additional questions have been asked, in order to obtain holistic answers regarding the current team structure, leadership and group processes. The two particular day-to-day processes that were discussed in the interviews were the quotation process and the assignment process of new projects. An external advisor of Unica provided an overview with all steps of these two daily cases. These two processes and the interview scheme can also be found in the interview scheme in Appendix C 'Interview scheme and informed consent'.

3.2 Participant approach and selection

Participants have been selected from three different subsidiaries of Unica. Selected participants have been approached by phone or through communication via e-mails with the secretary with the invitation to participate in this research. The research context and aim of this study have been explained, where after their rights as a participant were described. Afterwards, when the respondents agreed to all prerequisites, an informed consent was signed. This informed consent can also be found in Appendix C 'Interview scheme and informed consent'. Three subsidiaries have been investigated to account for potential differences between subsidiaries. It was chosen to investigate multiple self-managing teams and different types of respondents with regard to their role in the team, as in an introduction interview it became clear that there was variation in performance within the subsidiary itself and across subsidiaries. Within the subsidiaries the plant manager, manager operations and two self-managing teams – consisting of one contract manager, one process engineer and one service mechanic – have been contacted to join this study. These participants were selected because of their involvement in the self-managing teams within Unica and because of their experience working in these teams. To gain a thorough understanding of the self-managing teams within Unica and its subsidiaries, these different organizational actors from different levels within the organization have therefore been selected. They have hands-on experience in the quotation and assignment processes and in working with self-managing teams with team member diversity and interdependence within this sector. Also, they have insight into how the self-managing teams within Unica are being structured, lead and how group processes take place within their own teams. In order to substantiate the effectiveness of these teams, management levels have been included as they have insight into objective performance parameters of teams. Nevertheless, the input from non-management

levels on self-managing team effectiveness is also important, as this might lead to valuable insights into perspectives of all relevant team members. Overall, these participants were suitable in order to obtain relevant insights into team structure, leadership, group processes and self-managing team effectiveness.

This selection procedure resulted in a total of twelve interviews. From subsidiary A, interviews were conducted with six respondents. The roles of these 6 respondents were one plant director, one manager operations, one contract manager, one process engineer and two service mechanics. From subsidiary B, interviews were conducted with 4 respondents. The roles of these four respondents were: one plant director, one process engineer, one contract manager and one lead engineer. Finally, from subsidiary C interviews were conducted with two respondents. Due to personnel, time and work pressures it was not possible to have additional interviews with contract managers, lead engineers, and service mechanics within this subsidiary. The roles of these two respondents were plant director and manager operations. On average, the interviews lasted 50 minutes.

3.3 Data collection instruments and analysis

The interviews and the two daily processes for the CIT have been structured around the three main topics team structure, leadership and group processes. The goal of the interviews was to collect data on these subjects, while leaving enough room for elaboration on the participant's vision on the subjects. To guard the structure of the interviews, an interview scheme was used with open-ended questions, where through probing a further understanding of the different subjects was gained. The operationalization of the proposed antecedents team structure, leadership and group processes and their dimensions have been described in Appendix A 'Operationalization of variables'.

For every interview, the audio has been recorded and transcribed verbatim shortly after the interviews. The transcripts of these interviews were sent to each respective respondent for verification. Through qualitative content analysis different meanings and interpretations of coded text have been accumulated. The content has been coded with the software AtlasTI and every relevant quote from the interview has been linked to a code, where through inductive and deductive analysis, themes and subthemes have been identified, until no new codes were found (Baarda, 2012). The unit of analysis were the individuals from different teams as well as the teams themselves. The dimensions team structure, leadership and group processes have been coded deductively as well as inductively to identify to what extent the self-managing teams compare to the different design features and whether new features arose from the data who appeared to fall out of the aforementioned three conditions. The self-managing team effectiveness has been coded inductively, in order to identify different perceptions on performance. All used and generated codes can be found in table 8 in the code table in Appendix B 'Codebook'. Afterwards, all transcripts have been read again to have made sure no important information was missing.

4 Results

The following chapter describes the findings regarding team structure, leadership and group processes that were found in the different subsidiaries of Unica. The findings will be discussed per subsidiary. Per subsidiary, the findings related to team structure, leadership and group processes will first be presented, where after any other results unrelated to the conditions for self-managing team effectiveness will be presented that were not originally included in the conceptual model. Coding tables can be found in Appendix B 'Codebook'. Within this section the terms self-managing team, klantteams and team are used interchangeably. Also, the quotes within this section who belong to a certain respondent are indicated with a D and a number, and will be introduced within every subchapter.

4.1 Subsidiary A

Table 2
Respondent's role within subsidiary A

Number	Role
D1	Contract manager
D2	Manager operations
D3	Service mechanic
D4	Service mechanic
D5	Plant director
D6	Process engineer and lead engineer

4.1.1 Team structure

Enabling team structure
The self-managing teams within subsidiary A typically consisted of a contract manager, one or two process engineers, a lead engineer, and service mechanics. The contract manager was commercially responsible, the process engineer did most of the work planning and ordering of materials, the lead engineer was operationally responsible and directed the different mechanics on location, and service mechanics did most of the operational work. Findings showed that the current team structure lead to the different members having to rely on each other for successfully carrying out their work. Task interdependence was indeed an often-occurring theme. The contract manager argued: "*The lead engineer is the link between the office and the technics and is operationally responsible ... he is a true source of information for me and he must take precaution in making sure that the entire team is a well-oiled machine*" (D1).

However, some variation was found within this "typical" team structure. Findings showed that the team structure was very dependent upon the type of work the klantteams were fulfilling. In some occasions a project leader from modifications was also part of the klantteam, because of previous relationships that project leader had with that specific customer (D1). This contract manager also argued that employees from associate companies could be part of the klantteam dependent upon the type of work. He argued: "*You can make this circle as broad or as small as you want, but it is completely dependent upon the type of work*" (D1). The plant manager of subsidiary A argued that the employment of a lead engineer was not a feasible option for all types of work. She argued: "*For smaller contracts around 10000 euros, it is not possible to deliver an entire klantteam, so the contract manager is responsible there, with a process engineer. A lead engineer is for the bigger contracts, not for the contracts around 10000 euro.*" (D5). The type of work therefore seems to have a big influence on the structure of a team.

Furthermore, one service mechanic argued that he lacked challenging tasks. He argued: *"We were promised an 'x' amount of malfunction hours per year, but we do not get those at all. That is a real shame for us. The only malfunction tasks we get are sewer-related and that is not why we went to school to become a service mechanic"* (D4). A lack of challenging tasks was also mentioned by the manager operations and he argued he wanted to tackle this problem.

Real team

Findings showed that the self-managing teams within subsidiary A had a *clear goal.* All members of the team knew what their duties with regards to their role and saw what function the team itself was serving. Most team members acknowledged that the team was set up for mainly providing services related to malfunction and maintenance. Where respondents argued: *"We only provide services"* (D4) and *"We come for malfunction and maintenance"* (D3).

One service mechanic argued that he possessed specific knowledge about fire-safety systems, which led to him being member of more than one klantteam since multiple contracts and teams required his specific knowledge.

Clear direction

Within subsidiary A all team members had a clear purpose. Every team member was aware about the role to fulfill within the team. The contract manager was commercially responsible for four klantteams and had the task of directing these different teams under his supervision. The lead engineer was responsible for everything related to the customer on a operational level. He argued: *"I'm responsible for the operational business, which includes everything that happens outside including repairs, malfunctions and serving as the point of contact for our customer" (*D6). Generally, service mechanics were dealing with operational tasks on a day-to-day basis, where one argued: *"I do everything related to climate control, ranging between boilers to electricity outages".*

Supportive organizational context

In general, all respondents in subsidiary A were positive about the degree of support they received from Unica. Information systems were in place to support the different employees in their day-to-day tasks. Additionally, respondents argued that they had sufficient resources for successfully handling their tasks. One service mechanic argued: *"I think that it is organized pretty well, it's not like everything has to go really fast ... it's not like we are just making up something ... we are asked how much time we need to replace a certain thing and we get that time. Generally, that is well organized"* (D3). Another service mechanic argued: *"We certainly have the time, but the resources, well we also have sufficient resources, although we might need to obtain certain tools in another way, not everyone has specific equipment"* (D4).

Respondents also agreed there were plenty of options regarding training and development. The plant manager argued that the opportunities for training and development are very broad and that many employees are currently following a training. The manager operations argued: *"I think that the opportunities for training and development are excellent. Everyone has space to develop themselves, through following training programs and educations. There definitely is a broad budget for that."* (D2). Another service mechanic argued: *"I get the feeling that as long as the training or education is work-related, you can follow anything, and that is a real positive thing I think"* (D4). Respondents in subsidiary A were therefore satisfied with the opportunities for training and development.

Moreover, rewards were also an occurring theme. Findings showed that subsidiary A generally had subsidiary-wide rewards and personal rewards. Subsidiary-wide rewards consisted of profit distribution and recreational activities provided to everyone. There appeared to be no team-based rewards. The plant manager of subsidiary A wanted to avoid this as much

as possible and argued: "*I think that is a difficult subject. I try to reward the entire subsidiary, because otherwise some people will be rewarded more than others. If a team has a very difficult customer and really try their best, but the results just do not hold up, you will reward the one more than the other*" (D5). The plant manager did however provide personal rewards. For example, when service mechanics worked overnight to finish a certain job, they received personal rewards in the form of personal thank you, a card and drinks. In contrast, the lead engineer argued that he saw or noticed no rewards whatsoever.

Moreover, it was generally found that subsidiary A provided their klantteams with a lot of responsibilities and the corporate structure could therefore be described as a flat corporate structure and most respondents agreed. One contract manager argued: "*In principle, teams are 100% self-sufficient. They do not have an own ledger account, but are free to do what they want and can, if it is within the boundaries of Unica. But a lot of freedom is provided to the teams* (D1). This freedom mainly resulted in the teams determining their own course of action and making their own 'soft' planning. One service mechanic argued: *"Like those fire-safety systems, I just have a planning for that month about what needs to happen. But I can determine myself where I start ... I get a lot of say in that which is nice"* (D3).

4.1.2 Leadership

Management leadership
The findings showed that the coaching leadership style was most characteristic of management within subsidiary A. Management argued that they attempted to be a discussion partner for the different teams and their members. Management argued that the decision-making is in control of the teams, but management attempts to trigger certain team members to think thoroughly or a step ahead. The plant manager argued: "*I think that teams should resolve their own problems*" (D5). It had occurred that the different teams had a problem with an associate company and where management only came into the picture when the situation escalated. Management therefore appeared to function as a backup option in case of emergencies. The manager operations argued: "*I offer invited and uninvited advice, so if I see that something can be done better, I will offer my help, but my help is mostly on request. I leave a lot of responsibilities to my team.*" (D2). This is indicative of a coaching leadership style.

This coaching leadership style is also perceived by the different team members. The contract manager argued: "*Management is a final step for me, so when there is panic in the teams or someone is about to collapse, only then I will contact management. They do not have a lot to do with us, so that is good ... we have a lot of freedom*" (D1). Another lead engineer argued: *"I only see management in a klantteam meeting and then they listen and may put forward some advice, in the form of maybe this may be a good thing to do. So that goes well, they do not really interfere a lot"*. These findings therefore clearly present a coaching leadership style from management within subsidiary A. However, one mechanic argued that he never saw anything of management and argued "*I never notice them*" (D3).

Shared leadership
The findings showed that the decision-making authority within the teams themselves, was mostly the responsibility of the contract manager. Although the contract manager was the main person with final responsibility, team members often argued that there is much space for discussion between all team members about what option would be the most feasible for that specific situation. One service mechanic argued: "*In the end the contract manager has full decision-making authority. But there is a lot of discussion between all members, and everyone can have their say in it. And the best plan of action is based on that discussion, and it will also be executed in that manner*" (D3). The lead engineer responded: "*In the end it is the contract*

manager who decides. He decides if things go through or not, but these decisions are jointly established, so we all discuss and have a say" (D6). The decision-making authority within the teams in subsidiary A lies with the contract manager, but decisions are established based upon input from all team members. Generally, all respondents were satisfied with this course of action.

4.1.3 Group processes

Monitoring progress
The findings did not yield much results regarding *monitoring progress*. Monitoring progress was mostly done through mutual informing. The contract manager argued that the lead engineer was very important to him. He argued: "*With the bigger klantteams I'm only there one day per week, and that is never enough to obtain all information necessary. So when you have a good lead engineer, then you are not so busy with that, as he keeps you up to date with all business"* (D1).

Systems monitoring
Findings showed that the tracking of team resources and environmental conditions mostly occurred through personal informing as well as through using the information systems that were in place. The contract manager argued: "*The lead engineer is the link between the office and technics ... he is on the spot and communicates to me like 'hey I need five extra technicians on that spot' or 'that guy is not performing very well' ... he is a true source of information for me".* Information systems were also used to track resources and environmental conditions. The plant manager argued: '*Through Microsoft we have teams and you can invite other teams to a certain task, so if you do anything for a particular customer then you can enter it, and then the entire klantteam is able to see that' ... 'Later on we will also get checklists in which certain team members can see the tasks that they have to attend to'.* (D6). Within subsidiary A the tracking of team resources is therefore mostly done from person to person and through the information systems Unica provides.

Team monitoring and backup behavior
Findings showed that team members were supportive of each other and that problems within the team generally were being resolved within that team itself. Teams appear to be regulating themselves. The contract manager argued: *"They adjust each other as well, so when someone is not satisfied within the team, then they will first discuss this within the team and take a look at it"* (D1). The plant manager argued: "*They help each other out, they see that certain things have to be done, and they will assist each other"* (D5). A service mechanic responded: "*Everyone is ready and willing to support each other".* All team members perceived their colleagues as being very supportive and willing to help each other.

　　The role of lead engineer especially seemed to play a very important role in supporting the contract manager. The contract manager argued: "*The lead engineer is a very experienced technician who also knows a lot about internal processes and can always be seen as the right hand of the contract manager"* (D1).

Coordination
Generally, respondents argued that there are some improvements to be made with regards to coordination. These improvements mainly lie within communication, planning in advance and poor information distribution. Especially communication appeared to be a struggle between the process engineer and service mechanics. One example that was given was about poor communication of the planning department towards the customer. It was argued: "*The*

mechanics came to execute something but planning entirely forgot to mention to our customer that the water had to be cut off, which was not possible anymore on that day itself. So, then the service mechanics are on the spot with nothing to do" (D2). Additionally, the work for that day was planned already and new work had to be found for these service mechanics that particular day. This caused a lot of distress with the mechanics and process engineer. This also appeared to work the other way around, where service mechanics were communicating poorly. The plant manager argued: *"Communication could be better ... the mechanics have to communicate information to the process engineer when they are done with something ... so that the process engineer is informed about how far along a certain project is and what the status is ... are we still within our forecasted hours"* (D5). She also argued: *"But the process engineers have to be more active as well, get off their chairs. Too much is being done from behind the desk"* (D5). Communication between planning and operations therefore appeared to be tedious on occasion. Another point that was brought up was that work-related materials could be planned in advance, so that the mechanics have the necessary equipment when needed.

Conflict management
Findings showed that there were plenty of conditions to prevent, control or guide team conflict within subsidiary A. Respondents argued that the team atmosphere was good, there was trust among team members, that team members respected each other, conflict management was self-regulating within the teams, management served as a backup option, and that team members had time for each other. All team members argued that the atmosphere was really good. One process engineer argued: *"The team atmosphere is good. We can find each other, also outside of the meetings, I only have to call, and it will be arranged. That goes really well, cannot say otherwise"* (D6). Another mechanic said: *"It is good. I am the oldest guy, the real Abraham, but we go along all very well, so the working atmosphere is really comfortable"* (D4). It appears that whenever there is a conflict this will be brought up and talked about. The contract manager argued: *"Conflicts will always occur ... but this will be talked about within the team and in worst case scenarios it will come to me or management"* (D1). Respondents felt that conflicts were handled well in general and that there was sufficient mutual trust among team members. The contract manager argued: *"I have two very good lead engineers, in who I have blind confidence, which I find very important"* (D1).

However, the plant manager argued that certain team members did not express their thoughts enough. She argued: *"Someone thinks something about another colleague but does not express that. Then it escalates and we call them together and it will all be good, but that does not have to happen. They have to mutually fix these things"* (D5).

Motivating and confidence building
Within subsidiary A it was found that there was a certain degree of motivating and confidence building. One service mechanic argued that he was very satisfied with the compliments he received (D4). He found that this motivated him and argued that it was a real positive thing. It was also argued by both the service mechanic and manager operations that there was sufficient time for each other and that there was mutual support (D2; D4).

Affect management
The findings showed that there was no considerable amount of affect management within subsidiary A. One service mechanic found that he got compliments on a regular basis which he was really satisfied with. He argued: *"Compliments are being given often, and that is nice I have to say. I was not used to that. Approach each other in a positive manner"* (D4). He went on to argue: *"I find that really nice. If a colleague tells you he thinks you did something very excellent, it gives you a change of perspective. I have to say that is very positive here".* (D4).

The service mechanic was therefore really satisfied with the compliments he received for his work. However, no other respondents brought this up.

In line with this, the manager operations argued that more attention should be paid to complimenting each other. He argued: *"I think that could be better. I still see that most of our attention goes towards things that do not go so well. Which causes us to forget things that do go well and makes us forget to pay attention to those good things. Celebrate your successes"* (D2).

Team psychological safety
Within subsidiary A all respondents argued that there is space for interpersonal risk taking within the teams. The most prevalent themes were the ability to bring up new ideas within the team and the approachableness of all colleagues and the entire subsidiary in general. Generally, respondents argued that they feel free to bring up new ideas within the team. The manager operations argued that there are different layers to which persons bring up the the different ideas they have. "*Mechanics tell our lead engineer and he brings it forward to me ... I see different gradations. But I think I created an open structure within our team where everyone is free to say what he thinks*" (D2). This was also acknowledged by a service mechanic who argued: "*Yes we are free to bring up anything to each other*" (D4).

Another important theme appeared to be that everyone in the team was very approachable. One argued: "*I can't remember that anyone held back anything what they wanted to say. I would say that everyone is very approachable, the entire subsidiary. Everyone has time for each other*" (D1). A service mechanic argued: "*Everyone gets along really well, all colleagues, and if someone has a problem or something, we just approach each other and talk about it*" (D3). Overall, the respondents argued that there was a high degree of team psychological safety within subsidiary A.

4.1.4 Self-managing team effectiveness

General performance self-managing teams
Overall, the different respondents argued that their self-managing team and other self-managing teams within subsidiary A were performing well. The plant manager argued that she found the klantteams mainly effective, this could be improved, but due to personnel shortages the overall effectiveness was impeded. A service mechanic argued that he thought that the teams worked well in general – "*It just works well in my opinion*" (D3). Another lead engineer argued: "*I think it is a real positive thing within a company. It is the way to do it if I should say so*" (D6). Generally, all team members were happy with how the self-managing teams were performing in general.

However, several points for improvement were also brought forward. First, a contract manager argued that there could be more attention towards coaching of the teams. The plant manager argued that there is also a danger of klantteams and argued: *"I currently see that a bigger team is keeping their own people within their team, which means that when they have less work they will still keep them in their team, because if they temporarily give them to another team they feel they lost their people. That is a true danger of klantteams"* (D5). Clear membership within a klantteam therefore appears to be a danger for the general performance of the self-managing teams and Unica in general. Moreover, the manager operations would like to see that the klantteams themselves are more proactive in striving for personal development through following training and educations. Moreover, one service mechanic was only just employed and still had to figure out if the klantteam he was a part of was functioning well in general. Finally, it was brought up by the manager operations that there should be a bigger focus on outcome – "*A point worth noting is the outcome of our carried-out work. We see that in*

operations things can be organized better so that the expected outcome is achieved as well ... that could be better. A focus on outcome in operations" (D2). It therefore appeared that teams were performing well in general, but that a focus on profitability could be further developed.

Performance in the quotation process
The self-managing teams were generally found to be performing good in the quotation process. Respondents felt they were performing well and argued: *"I think we are fairly effective, but that's because of our great lead engineer"* (D2) and *"I think that is going well ... well the execution, calculation is in order, and I think the quotations are fairly clear. So, I think that is going well"* (D6).

However, multiple points of attention were found. One service mechanic argued that the process engineer had limited insight into his work. He said that with the bigger contracts the quotations were entirely made at the office – *"and then they do not really look on site to what is actually happening"* (D3). This causes the service mechanic to be confronted with unexpected results when he is on the job, to which he argued *"maybe the process engineer can visit the site to see what is happening"* (D3). The plant manager argued that teams could be more effective in the quotation process as well. This mainly lies in the fact that some quotations lay around too long, which is a point of improvement according to her.

Another important theme was that the klantteams should focus on asking in-depth questions regarding requests a customer makes. The contract manager for example argued: *"If a quotation does not become a order, the calculation costs are for ourselves. So, ask more in-depth if this is what the customer really wants"* (D1). The manager operations also argued that the team should take on a more active role in communication towards a customer, especially since customers nowadays have ambitions regarding sustainability. *"As an example, a few weeks back we had to replace a gas-fired boiler for another gas-fired boiler, because they found our sustainable option too expensive. It is then up to us to inform them wisely, because if you wish to become sustainable as an organization you have to replace this boiler again in two years, which will cost them more money in the end"* (D2). The speed in which quotations were being presented to the customers could also be improved according to the respondents – *"I think the speed in which they are being processed could be better"* (D2) and *"The timeframe ... I don't know if this is the regular procedure and that it is just not possible to make it go faster"* (D4). This respondent (D4) also argued that he thinks the entire quotation process is cumbersome.

Performance in the assignment process
The findings showed that only one mechanic and the plant manager found the order process to be effective. The mechanic argued that the order process generally went smoothly and that the communication was mainly good. The plant manager argued that everything in general was being carried out well, although it may be somewhat hectic and may require some puzzling, but in the end, everything was mainly carried out as planned.

There were also several points for improvement found in the assignment process. These mainly related to communication, costs of failure, invoicing, planning, delivering, and the entire process being cumbersome. With regards to communication the plant manager said: *"Sometimes there is someone without the required material, or without sufficient personnel. I think that can be organized better"* (D5). Another lead engineer argued: *"The communication and transfer between us and third parties could be better. If they make a modification, the technical drawings are not correct anymore as there is a new installation or whatever. It is those kinds of things that are often looked over"* (D6). Communication therefore appears to be an important theme in the assignment process, which was also the cause for costs of failure. Moreover, invoicing could also be improved. The plant manager argued that this process could

go a lot faster. She argued "*They are very busy in operations and then all of a sudden a thought pops into their head, oh we still have to invoice*" (D5).

4.1.5 Additional findings

Value of klantteams
Subsidiary A generally found that the klantteams provided them with additional benefits compared to the old team structure. These benefits were mainly associated with improved communication, one contact point for the customer and customer satisfaction. The contract manager argued: "*That is the goal of the klantteams, previous years we had 1001 points of contact for our customer, and that is dramatic regarding the communication. The customer wants 1 Unica*" (D1). With the current team structure of klantteams, they saw that the customer truly valued these klantteams as it was clear to them which person to contact in case they wanted to be informed about something or had a talk with.

Developments in the work field
Findings showed that there are considerable developments taking place within the technical services sector. This was due to demands of customers as well as Unica itself. It became clear that subsidiary A wanted their contract managers to be busy commercially, while leaving operational tasks to the rest of their teams. This caused a shift in roles in the entire team, where contract managers had to leave operations, while process engineers and lead engineers had to pick up more administrative tasks which previously belonged to the contract manager. It was found that contract managers had difficulties letting go of these operational tasks. "*Before you know it, the contract manager is busy on an operational level instead of a tactical level. You really have to keep him out of that*" (D5). In general, all functions in the self-managing teams have changed it appears. The manager operations argued: "*A more active role needs to be taken on ... I see that they are beginning to further understand this role, but improvements could still be made*" (D2).

Working with third parties
Findings showed that the teams generally worked with third parties on a regular basis. However, there were mixed opinions about working with third party companies. Some respondents argued that they had a positive experience in working with third parties, and that the reason they worked with them was mostly because they provide specialized services. One service mechanic argued: "*That works well, most of the time everything is arranged on time*" (D3). Other respondents characterized their working relationship with third parties as more troublesome. This was because these third parties often took over tasks, which were initially promised to the klantteam. This caused some distress with the service mechanics. One argued: "*That organization has their own technical services, and they resolve a lot of problems on their own. So only the less fun tasks are left to our team ... we were supposed to be very busy with that, but that is not the case up until now.*" (D4). Moreover, communication with third parties was found to be varying per situation as it was difficult with some parties while being smoother with others.

4.2 Subsidiary B

Table 3
Respondents details subsidiary B

Number	Role
Subsidiary A	
D7	Lead engineer
D8	Contract manager
D9	Plant director
D10	Process engineer

4.2.1 Team structure

Enabling team structure
Findings showed that there are three different klantteams within subsidiary B. The conducted interviews in this study were all with team members of one klantteam. Generally, their klantteam was made up of one contract manager, two process, lead engineers and service mechanics. Within this klantteam the contract manager was financially and commercially responsible, the process engineers were responsible for the scheduling of maintenance for the entire year and where lead engineers and service mechanics were operationally responsible. Task interdependence appeared to be an important theme within this team structure. One contract manager argued that team members working in the office cannot make up what someone in the execution needs – "*maybe in general, but not very specific stuff*" (D8). He also went on to argue that he was not fully aware of the work that was executed by lead engineers and service mechanics on a daily basis – "*and if we serve this customer together, then we can provide effective solutions*" (D8). This exemplifies task interdependence that is currently present through the team structure of self-managing teams.

It also appeared that besides the typical team members of a klantteam, third parties were also included on occasion as members in the klantteam within subsidiary B. It was argued: "*A contract manager from Fire Safety is also part of my klantteam ... we try to include them in what we are doing*" (D8) or "*Sometimes we include contract managers from Fire Safety or from acquisition*" (D7). Indeed, it does appear that the team structure of a klantteam is dependent upon the type of work. For bigger contracts it was feasible to have the same lead engineer or mechanic on site, while for smaller contracts it differed. Important here was also the type of customer. Certain customers lend themselves to have a lead engineer on the spot who has the power to for example treat a customer request, while other customers did not like this and wanted only to speak to the contract manager. Additionally, one service mechanic in this team was also part of other klantteams because of his specialized knowledge. He argued: "*Like today, I do work for another customer as well. I do very specific things who other mechanics cannot do, so I am taken away for a day*" (D7).

Real team
Although the klantteams have several key members with a clear membership in the team, there are also 'outsiders' who enter and leave the klantteam occasionally. This is in line with the previous findings that third parties were also included on occasion. Third parties in this case also refers to associate companies of Unica (e.g. Unica Fire-Safety). The plant manager of subsidiary B argued that the customer sees 'one' Unica and that this should be reflected on the work floor – "*We must incorporate those other parties into our team, but then we get a response like "we work for another Unica company", but that should not matter, you have to join in on this process for our customer*" (D9). This process therefore varies substantially, where third parties 'enter' and 'leave' the klantteam constantly. Clear membership is therefore ambiguous

within the klantteams. Nevertheless, the klantteams had a clear goal and brought up that their team was setup for providing services regarding maintenance and malfunctions.

Clear direction
Findings showed that the team members had good knowledge about the purpose of their function. The contract manager saw his role as the connection between the customer and Unica and being financially responsible, the process engineers schedules all services related to maintenance and malfunction for the entire year, while the lead engineer was operationally responsible and took on some responsibilities originally allocated to the process engineer. The respondents argued that this was quite unique as the lead engineer was supporting the process engineer through ordering materials and making a pre-quotation. Altogether, the members knew what their purpose was and had a clear direction.

Supportive organizational context
Several perspectives on the organizational context arose from the findings. First, it appeared that there were information systems in place to support its employees. Second, it appeared that everyone was really satisfied with the possibilities to follow training or pursue a new education. A process engineer argued: "*What I really find enjoyable, is that you have the ability to progress your career within Unica, and that is what really appealed me to work here*" (D10). Interestingly, the plant manager argued: "*I think that the possibilities are plentiful. But I notice that this is not reflected in the employee satisfaction survey*" (D9). He went on to argue that this may be because employees did not think it through very well, since they often wanted to follow an education all of a sudden while there was no budget left for such a training in that particular year. He then told them: "*We told them if you want to follow such as thing, communicate this to us earlier ... so that I can free up budget for this*" (D9). However, none of the other respondents characterized the possibilities for training and development as limited. Third, personal rewards where also in place through the form of gratifications. If employees performed above average, they were eligible to receive a monetary reward. Employees also received profit distribution at the end of the year. Fourth, there were also subsidiary wide rewards in the form of recreational activities. Finally, only half of the respondents argued that they had sufficient means and time to successfully carry out their job.

On the other hand, teamwide rewards were not granted within subsidiary B. A contract manager argued that he wanted to arrange something nice to do for his team, but this was not approved of by Unica. He argued: "*I can understand that, because the closer the teams become, the worse the communication between separate teams becomes. So that is a bit of a double-edged sword*" (D8). This was also argued by the process engineer: "*We talked about that, it was a point of discussion in our last meeting. Personally, I do not see it happening*" (D10). Additionally, it was found that the current information systems in place were sometimes troublesome to work with.

The findings also showed that there were personnel shortages, time pressure and work pressure. Some quotations were left to sit for too long because of '*capacity problems and work pressure*' (D8). The process engineer argued: "*It happens on occasion that I have to work at home, no way to avoid that. But that is only occasionally and not structurally fortunately*" (D10). But he went on to argue that this did not bother him at all and that he experienced no stress. The lead engineer argued: "*Yes, I could use more time. I think it is an issue of the world, especially in the installation branch*" (D7). The lead engineer went on to argue that time is always a constraint nowadays, because of the economic crisis of a few years ago. Certain contracts were accepted a little tight timewise, which causes time constraints nowadays. Overall, the respondents argued that there are certain time and work pressures they have to deal with on a day-to-day basis.

Nevertheless, within subsidiary B there was a lot of independence within the klantteams. Findings showed that within this subsidiary a lot of responsibilities resided with operations, which led to relieve on planning and management levels. Generally, this independence was appreciated by the different team members. However, the contract manager argued that the klantteams were independent to such a degree, that connection with other teams was missing. He also argued: "*I really enjoy it, although I have learned from the past that people could miss some direction ... the line is really thin between experiencing freedom and feeling alone*" (D8). This subsidiary especially let a lot of responsibilities with their lead engineer which led to him making his own 'hard' planning, which was heavily favored but led to interference with the central planning from time to time.

4.2.2 Leadership

Management leadership
Findings show that the leadership style of management can be characterized as a coaching leadership style. The lead engineer argued that they are independent, and that whenever he has a problem, he approaches the contract manager who has decision-making authority and where management does not have to be consulted for general day-to-day activities. He argued: "*But whenever the contract manager is not here and there is a problem, I just communicate this to our plant manager ... I can call him or walk in for anything and I will receive a serious answer*" (D7). The process engineer also experienced this type of leadership. He had almost nothing to do with management, except for the larger contacts. He argued: "*In the background they direct us to follow certain rules of course, so in that sense they lead us, but that is mostly about following rules*" (D10). He furthermore argued that the team was left with a lot of freedom. The plant manager also confirmed this coaching style of leadership. "*I would like to believe that I give them the room to do things ... I think that is necessary to gain the most out of these klantteams ... because for example if I give someone a car, with the permission to drive it yourself, but I will still control you from the outside out ... That does not work. He has to drive himself, experience it himself, I will just be on the backseat of the car driving along*" (D9).

Another interesting point that was brought up by the plant manager was that he wanted to be seen as a part of the klantteam. He went through serious efforts to involve himself with members of the different klantteams but was met with resistance from the teams he felt like. He argued: "*When I was at a klantteam meeting ... they think 'oh that is our boss, let's not say anything stupid right now because what would he think otherwise*" (D9). He was advised by fellow colleagues to not join those meetings anymore, because '*it did something with the people*' (D9). He felt that this was still because of the old culture that employees associated with the previous plant manager. This was in line with findings from other interviews, since the plant manager was mentioned to be a part of the klantteams. Nonetheless, the management leadership was characterized by respondents as approachable, in cases of emergency, while at the same time experiencing a lot of freedom.

Shared leadership
Findings showed that there was a general consensus that the contract manager has full decision-making authority in the team, however his decisions were mainly based upon the input from members of the entire klantteam. The process engineer responded: "*Referring to the roles within our team ... it is very clear to us what our contract manager is, but during conversations or during the entire year it is just the case that we are all equal and I think that is a really strong point of our team*" (D10). It was generally important that the quotations were signed by the contract manager, but discussion and input were valued beforehand.

The plant manager argued that the shared leadership within the teams could be improved. He argued that contract managers often were too busy with the operation and said that these contract managers should enable his own team members' abilities to take on these operational tasks and take on more responsibilities.

4.2.3 Group processes

Monitoring progress
Most respondents argued that the monitoring of progress went well. Monitoring the progress on task and mission accomplishment was mostly done through information systems as well as personal informing. The contract manager argued: "*When quotation becomes assignment, then the status will be changed in our system so that everyone is aware something has become an assignment*" (D8). He also said that: "*I also have monthly meetings with my process engineers, where we discuss work-related business. I think that is important that they know something about forecasts, so that they know what they are working on and for*" (D8). The information systems and personal meetings therefore facilitated the monitoring of progress.

Systems monitoring
Systems monitoring occurred mainly through the use of information systems within the company.

Team monitoring and backup behavior
Respondents were generally happy with the amount of team monitoring and backup behavior. One lead engineer argued: "*I had a malfunction last Tuesday night, and then I call my colleague from our team about the specific situation, and he responded: 'Where are you? It's only 10pm, I will come visit you really quick. So, everyone is always ready to help each other out'* (D7). Moreover, within subsidiary B the lead engineer appeared to be a substantial source of support for the process engineers, since these lead engineers executed tasks which initially belonged to the process engineers.

Coordination
The coordination process tends to go well according to multiple respondents. On a weekly to monthly basis klantteam meetings are planned to ensure that every member of the klantteam knows the status of the particular customer as well as any activities that have to be carried out in the upcoming week to weeks – "*in that way we keep each other focused*" (D10). Respondents argued that this went well since they got their own responsibilities and therefore kept each other focused on the outcome as well.

Conflict management
All respondents were very positive about the degree of conflict management, and no points of improvement were brought up by them. There was consensus over the fact that there was a good team atmosphere, conflicts are immediately being talked about, there is time and mutual trust and respect for each other. The team atmosphere was characterized as "*Good, really nice. It is really good ... everyone is willing to help each other, and everyone respects each other*" (D8). Another argued: "*I'm in a really nice team in my opinion*" (D7).

Team members thought that the team handled conflicts in a good manner. One argued: "*It can be quite fierce from time to time, but then we all know where we are and where our boundaries lie ... I think conflicts are handled well*" (D7). It appeared that whenever there was a conflict, that they would be resolved as soon as possible through immediately talking about it

within the team – "*I do not even see it as a conflict, if there is something going on we just speak to each other about it*" (D10).

Motivation and confidence building
Findings showed that team members were generally positive about the degree of motivating and confidence building. As already mentioned, the team atmosphere was characterized as 'very good'. Furthermore, respondents argued that their team members compliment each other. One example is that whenever a customer was really happy with the provided services, the compliments would be passed on to the relevant person. Another said: "*Yes we often give compliments to each other, that goes well*" (D10).

It was also argued that the entire team was like-minded, which was valued by team members – "*We do not have layers in our team, but just one flat line. No one feels that he is greater than someone else ... I think that is the true power of our team*" (D10). Another point was that the team members had time for each other.

One point of attention was also brought up. One lead engineer argued that he would often hear when things went wrong, and that less attention was paid to things that went well – "*That could be said more often*" (D7) he argued. He did however argue that such things just happen and that it is not something that was being done consciously by management.

Affect management
Within subsidiary B, affect management was not discussed thoroughly. However, the contract manager argued that team members would approach each other in a positive way, which he found nice. Additionally, the lead engineer brought up that he found that there were limited compliments from management as already brought up under motivation and confidence building.

Team psychological safety
Findings showed that respondents experience a high degree of team psychological safety. As already mentioned previously the team atmosphere was experienced as good. Generally, the team members felt free to bring up new challenging ideas – "*Ranging from apprentice to contract manager, everyone feels free to bring up something. In that regard we do not hesitate at all*" (D7). Approachableness also appeared to be an important theme in this regard. "*We are very open towards each other, can say anything and are able to reach each other*" (D10). Team members generally also felt that there was the possibility to make mistakes. The plant manager also highly valued this and found it an important subject. He argued: "*For example, lead engineers really have to experience that making mistakes is allowed ... you are allowed to undertake new initiatives, and whenever they are wrong let us learn from them as a whole and let us not get angry about it*" (D9). Finally, it was found that team members had time for each other. Overall, respondents argued for a high degree of team psychological safety.

4.2.4 Self-managing team effectiveness

General performance self-managing teams
Findings showed various results with regard to the general performance of the self-managing teams. The plant manager saw that two of the three klantteams were performing well. One klantteams was underperforming, but this was due to personnel shifts he argued. "*I would give it a bare sufficient, but that is because of the one that is underperforming, otherwise I would say that they are performing well*".

However, several critical points were brought up about the klantteams. First, the contract manager argued that it is harder to find a connection with your colleagues outside of your

klantteam. He thought that this was because every klantteam is serving his own customer, which may create several sub-units within the subsidiary. He argued: "*We all have the task to involve everyone, because in the end it is not about your or my team, but it is all about what is in the best interest for Unica*" (D8). He thought that this was dangerous about klantteams and could be improved upon.

Performance of self-managing teams could also be further improved upon according to the contract manager when more responsibilities are being left to operations. "*I think that if you let them order their own day-to-day materials you prevent a lot of working stress ... there may be more tasks that a service mechanic may be able to pick up I think ... like planning or communicating to the customer*" (D8).

Moreover, as already mentioned the plant manager also saw value in the fact that he should be seen as a member of the klantteam. The plant manager argued that you have to match the decision-making unit of Unica with that of the customer. He argued that key employees from both sides, with similar authorities, should talk to each other. An example he gave was: "*We're often in conversation with facility managers, or technical services, but when we get a request of 500.000 euro's, then we must ask ourselves who knows and has the authorities over that. In that case that is me*" (D9). He goes on to argue that if klantteams see that their customer wants to undertake a new project, which is often worth more money, that the klantteam should inform him so that he could partake in this process. This would make the entire process more effective he argued, but it would then be necessary that the klantteams saw the plant manager as part of the team.

Performance in the quotation process
The quotation process was generally found to be effective. The rate of success for this particular klantteam was around 95% according to the contract manager. He argued that his team was performing fine in this process. "*It may sometimes take a bit longer than expected, but that is the only thing I could come up with that could be improved upon*" (D8). The process engineer argued: "*Whenever they inform me about materials, I can blindly trust them that those materials are correct ... and whenever something may not be correct, we fix it together*" (D10).

Several points of improvement were also brought up. These related to directly working on the quotation and speed, asking more in-depth questions on the request of the customer, the matching of the decision-making unit and there being a substantial amount of hierarchical layers to finish the quotation.

Performance in the assignment process
The findings showed that the current teams were effectively performing in the assignment process. The process engineer found this extremely well and argued: "*Yes, that is just perfect, above perfect even*" (D10). Others found some points of improvement for the assignment process, which was mainly related to the planning of material and personnel and there being unnecessary layers in this process. There appeared to be some miscommunication between central planning and the planning of the lead engineer. He argued: "*I get to schedule everything for myself with regards to the municipality ... but then our central process engineer schedules me for that day while I have already planned tasks myself ... that clashes sometimes*" (D7). He went on to argue that if the central process engineer wanted to schedule him, that she should first call him personally or look into his agenda. In line with this, the contract manager was not fond of the central planning either. "*Now we have true klantteams, and I do not see the added value of a central planning, because I think you are a team on your own, so you should organize your own work, and now the central planning is just another extra layer*" (D8). He argued that when teams schedule their own work that they are quicker to react and that they feel more responsible, which should result in more productivity according to the contract manager.

4.2.5 Additional findings

Value of klantteams
Within subsidiary B the findings showed that through the introduction of klantteams, several benefits arose. These were mainly related to customer and employee satisfaction, improved communication, one point of contact for the customer, efficiency, team-feeling and a good fit with the current corporate structure. It was argued: "*Now you get a lot more feeling with everyone in the team*" (D7) or "*We see improved collaboration and improved knowledge about our customer ... I also see that employees think their jobs improved because they received more responsibilities*" (D9).

It was also argued that through klantteams the customer satisfaction was improved. One argued: "*You get a connection with your customer ... you have the same service mechanic for the same customer ... so he feels connected and there is a certain relationship between him and the customer, which is always nicer*" (D8). Another said: "*You have a lot more knowledge about the specific location and get to really build a relationship with the customer*" (D10).

Developments in the work field
Findings once again showed that there are considerable developments occurring within the work field. Team members have to adapt to their new role as the responsibilities are being transferred downward. The contract manager should mainly be concerned with commercial business, while the rest of the team focuses on the operational side. This led to a lot of changes regarding tasks related to a specific function. More is expected from service mechanics, where the contract manager argued: "*Much more is expected of our mechanics, we have to know in advance when we think something is going to break, because then our customer can respond to this within their budget*" (D7). In reality this appears to be somewhat disorganized. Concluding, much more is expected of service mechanics, which was a true difference compared to ten years ago it was argued.

Working with third parties
Findings showed that working with third parties was troublesome within this subsidiary. Associate companies of Unica or third parties generally had less customer empathy and worse communication. It appeared that there was a whole lot less of customer empathy with associate companies of Unica as well as third parties in general – "*They do not have any customer empathy whatsoever*" (D7). The lead engineer went through various efforts to get these 'outside' mechanics to have more feeling with the customer, which worked in some occasions. He argued that the problem mostly lied with the planning of those associate companies … "*They have no idea whatsoever*". This led to distress with the lead engineer which causes him to constantly fix certain problems caused by these third parties. It generally appeared that the communication with associate companies of Unica was troublesome. They would often not follow up on promises which created a substantial amount of extra work for the lead engineer in this case. He found this very frustrating as it was 'expected' of him to outsource this type of work to the associate companies within Unica, and not another third-party company which according to him did do their job like expected.

4.3 Subsidiary C

Table 4

Respondents details subsidiary C

Number	Role
Subsidiary A	
D11	Manager Operations
D12	Plant director

Since only two interviews have been conducted within subsidiary C, the findings related to self-managing teams, team structure, leadership and group processes are incomplete. Results are mostly lacking related to group processes since the two interviews have been conducted with the plant director and manager operations. These two respondents, although being part of the self-managing teams according to their model, could be considered to not be involved on a day-to-day operating basis.

4.3.1 Team structure

Enabling team structure

The self-managing teams within subsidiary C mainly consist of one contract manager, three process engineers and rotating lead engineers and service mechanics. The contract manager was responsible for his team and his clients and was expected to let go of any operational business. However, the manager operations argued that this appeared to be difficult since he found that the contract manager was often dealing with operational tasks. He argued that the operational tasks should be left with the process engineers, lead engineers and service mechanics. It was even argued that in the future a potential 'inside' contract manager should be employed to handle tasks within the team while an 'outside' contract manager should be dealing with commercial business. Nevertheless, this was not the case at this exact moment, and it was often found that certain operational decisions had to be made by the contract manager, and not by the rest of the team to which it initially belonged.

Moreover, it was argued that the main team members possessed sufficient expertise to successfully carry out their jobs. Both respondents argued that there are new developments occurring within the work field, where the process engineers had to take on a more administrative and operational role so that the contract manager could be busy with commerce. It was argued that most of the team members possessed the required skills to sustain these developments, but that some colleagues, mostly the process engineers, had to develop themselves to successfully meet their new job requirements. It was also found that there was a high degree of task interdependence within the teams in this subsidiary.

The findings showed that the team structure was dependent upon the type of contract of the klantteams. Self-managing teams were often involved with project leaders of another Unica department, who often led the teams entirely and was the first point of contact for the customer. The manager operations explained that there are a lot of shifts in customer behavior, which led to changes in the structure of the klantteams. For bigger clients it was customary to have one project leader as the main point of contact, which could have multiple contract managers and thus klantteams to put on that specific case. This was mostly done since it often varied how much work was currently available per customer, where the one year they were extremely busy and the other there was almost nothing to do. The plant director did in reality not see the third parties as part of the klantteam itself, but they were involved in meetings on a regular basis. Furthermore, it was also argued by the plant director that the service mechanics had to be kept interchangeably deployable across teams because of specific knowledge they possessed.

Real team
Results show that clear membership within the klantteams could be described as vague. It was found that service mechanics were often part of more than one klantteam as they possessed specific knowledge as already mentioned. This led to them being deployed in multiple teams whenever their skills were needed and could therefore lead to no clear membership of one team.

Clear direction
The current study did not yield any findings related to *clear direction* within subsidiary C.

Supportive organizational context
Findings showed that the organizational context could be deemed as supportive within subsidiary C. The plant director argued that there were sufficient resources and time for the klantteams to successfully carry out their work. It was also argued that the possibilities for training and development were excellent within subsidiary C. The manager operations argued: "*You can follow any training you want, as long as it is within our goal structure ... there is no brake on that kind of stuff*" (D11).

Findings showed that there currently were no rewards based on team-performance, but that this is a topic that is being looked at within subsidiary C. It was argued that in the future the contract manager may be eligible to receive extra monetary rewards based on superior performance. The plant director argued: "*We have no team-based rewards, but we do have recreational activities with the entire subsidiary ... to prevent creating separate teams*" (D12). Finally, the manager operations argued that their enterprise resource planning system (ERP) could be troublesome from time to time as it lacked user-friendliness. This led them to using seven to eight programs, which their clients also had to use. However, the subsidiary was undertaking steps in obtaining a new ERP system to solve those difficulties.

Moreover, it was argued by both respondents that there are a lot of responsibilities being left to the klantteams. The manager operations appeared to be extremely fond of the idea of ownership residing at a low level within the organization. He argued that this was the culture of Unica and that it had several benefits. He argued that through low ownership, teams feel responsible for their own customer – "*Whenever there is a problem, he should be ready to answer and solve things ... otherwise you would get situations of uncertainty where everyone puts things on each other*" (D11). Through giving teams responsibilities for their own customer, they would act as the sole contact point for this customer and solve problems they might have. If they would not feel responsible for their customer, they might go around and argue "*he should have done that*" (D11). Besides this he argued that people were struggling with this freedom and argued: "*They have to get used to these responsibilities ... we tell a mechanic go to a customer and they find it very scary ... "that is the job of the process engineer right?" ... Let the mechanics think for themselves, they are the mechanic right*" (D11). He thought that it was unnecessary to involve process engineers in making "smaller quotations", as he thought that the mechanics knew how much time is needed to replace something and what materials would be needed. But this often led to distress and resistance with the mechanics.

4.3.2 Leadership

Management leadership
Findings showed that the leadership style most characteristic of management, was the coaching leadership style. Both respondents argued that management would only interfere when necessary by giving feedback and assisting where necessary. It was argued that the klantteams had enough freedom to carry out their day-to-day tasks and 'lead' themselves. The manager operations argued: "*If it cannot be fixed by themselves, then we would come in as a sort of*

mediator" (D11). The plant director also argued for a coaching leadership style and argued that he would let the teams plenty of freedom to determine their own direction while offering assistance and stimulating new ideas within them.

Shared leadership
Shared leadership was not discussed to a full extent since only the manager operations and plant director were interviewed, and no insightful findings were found regarding the processes around shared leadership. Nevertheless, both respondents argued that there is plenty of discussion within teams and that they have the authorization to change things in for example the planning whenever necessary. Interestingly, management argued that they noticed a certain degree of uncertainty within their klantteams to make decisions. The manager operations argued: "*Is he able to make a decision himself or does he need approval of everyone first as he is scared to make mistakes?*" (D11). He went on to argue that he felt that uncertainty could be an important theme in those teams, and thought it could be improved on – "*I think they need too much approval from the MT, and then we as the MT have to decide and ask them six to seven questions while they could easily have solved this themselves*" (D11). This could potentially have something to do with the old culture that prevailed within Unica, since it used to be more directive where the plant director decided what happened he argued. The current culture within Unica changed according to him, but there are still employees who liked or were used to the old style of leadership – "*Some people like to be taken by the hand*" (D11).

4.3.3 Group processes

Monitoring progress
The current findings did not yield any results regarding *monitoring progress* within subsidiary C.

Systems monitoring
The current findings did not yield any results regarding *systems monitoring* within subsidiary C.

Team monitoring and backup behavior
Findings showed that the plant director of subsidiary C found that the members of klantteams were able to indicate to one another if things were going well or effectively. He did however miss some critical thought in them. "*I think that the people are not critical enough … that could be better*" (D12).

Coordination
The plant director argued that he thought that the information distribution from process engineers towards the service mechanics could be improved upon. "*The information distribution could improve so that the service mechanic just knows what to expect, what is being done about maintenance, what materials is required and what happened in the past for example*" (D12). This led to some trouble on the side of the service mechanics he argued.

Conflict management
Findings showed that the two respondents were generally satisfied with the way that conflicts were being managed within the teams. The plant director thought the team atmosphere was good and thought that this was because of the concept self-managing teams itself. "*It is a pro that you do not have the feeling you are just a number within such a large company, since you*

work in these klantteams" (D12). This current team atmosphere was therefore found to be a positive thing regarding conflicts he argued.

Nevertheless, the manager operations thought that some service mechanics often were offended too quickly. He argued that this could have to do with the old culture that resided within the company. "*We are constantly busy telling them that mistakes are allowed ... we do not want a blame culture ... we talk to people, but they still feel that they are being blamed for something"* (D11). He went on to argue that this might have something to do with the old culture, since previously they would be blamed for certain things – "*I think it is a culture issue"* (D11). Moreover, both respondents argued that when conflicts within the teams get out of hand they would be involved and would take on a role as mediator.

Motivating and confidence building
The current findings did not yield any results regarding *motivating and confidence building* within subsidiary C.

Affect management
The current findings did not yield any results regarding *affect management* within subsidiary C.

Team psychological safety
The findings showed that both respondents generally thought there was a certain degree of team psychological safety within the teams. The team atmosphere was thought to be good according to the plant director. He also thought that team members were free enough and experienced sufficient safety within the team to bring up any new ideas they might have had. As already mentioned, the manager operations argued that he tried promoting that mistakes are allowed, but that this was not always experienced by the service mechanics. Nevertheless, the possibility to make mistakes was there he argued.

4.3.4 Self-managing team effectiveness

General performance self-managing teams
The results showed that the manager operations was satisfied with the general performance of the klantteams. He thought that the klantteams were performing well on operational level, but that certain improvements could be made commercially – "*I find that really difficult ... I think you have to make the transition towards an operational contract manager "inside" the team and one commercially responsible "outside" the team"* (D11). Moreover, he argued that through the klantteams Unica was close to their customer, very customer-focused and that they would "hug" a lot with their customers, while also operating on a local level, which resulted in loyal customers. Customer satisfaction was therefore a positive aspect of klantteams.

However, the manager operations went on to argue that he thought the general effectiveness could be improved. This mainly resided with the notion of responsibility according to him. Currently whenever materials had to be ordered, service mechanics on the spot would take a picture of required materials and send this to the process engineers. The manager operations argued: "*That is just ridiculous ... if that mechanic has a decent app on his phone and can put the required materials in a shopping cart and enters it on a project number ... it would be much better"* (D11). He therefore was very fond of the idea that ownership resided on lower levels in the organization and thought that this would improve their general effectiveness as well.

Finally, the plant director argued that through the introduction of klantteams, the atmosphere between the different teams had been lowered and thought it created a feeling of

distinct groups. He argued: "*A klantteam is responsible for his customer and will not think of another customer as his own, which results in them not interfering or assisting each other*" (D12).

Performance in the quotation process
The plant director argued that he found the klantteams to be performing well in the quotation process – "*I think the teams are performing well ... they are sufficiently autonomous ... I only think that laying off responsibilities within the team could be improved upon*" (D12).

Performance in the assignment process
The current findings did not yield any results regarding *performance in the assignment process* within subsidiary C.

4.3.5 Additional findings

Value of klantteams
The value of klantteams within subsidiary C was found to be related towards improved communication within teams, customer satisfaction, and a team-feeling. The plant director argued: "*The atmosphere and communication within the teams is good in my opinion, however the communication between the teams has worsened*" (D12). Through the introduction of klantteams the communication within the teams has been good, but as already mentioned the communication between teams has been reduced since klantteams mostly felt responsible for their own customers and would therefore not assist others to successfully serve their customers.

Developments in the work field
Findings once again showed that there are developments taking place within the sector Unica is operating in. As previously mentioned, subsidiary C wanted their contract mangers to be mainly dealing with commerce, while the operational tasks were left to the process engineers, lead engineers and service mechanics. This caused a shift in roles for the entire team, which led to some resistance with all members. The plant director argued: "*this is difficult ... I see that the contract managers think that their process engineers would not do the job as good as they will*" (D12). He went on to argue that it was fine whenever certain work was of lesser quality when performed by a process engineer – "*I think that will go fine either way*" (D12). The developments of each of the team roles therefore appeared to be an important recurring theme.

Working with third parties
The plant director argued that the klantteams had to deal with third parties on a daily basis, both associate companies and true third parties. He argued that he would like to keep as much work within the teams since taking on more tasks and responsibilities should maintain the diversity in one's work and would offer more challenging jobs for the mechanics. But whenever this was not efficient to do, it would be outsourced immediately. Subsidiary C therefore mostly outsourced work which was highly skill-specific and was not present in the klantteams. However, no true experiences of working with third parties were discussed in the interviews.

4.4 Summary of the findings

Table 5
Summary of the findings

	Subsidiary A	Subsidiary B	Subsidiary C
Team structure			
Real team	Very clear team goal, not dependent upon 'outside' parties and some members were part of multiple klantteams	Clear team goal, very dependent upon 'outside' parties and some member were part of multiple klantteams	Team goal not discussed, not dependent upon 'outside' parties, and employees part of multiple klantteams
Clear direction	Clear purpose per team member, no limitations in insight in results and strategic goals.	Clear purpose per team member, but limited insight in results and lack of a strategic goal.	-
Enabling team structure	High degree of task interdependence, no information about sufficient expertise. Structure highly dependent upon contract size, but not on third parties and highly specific knowledge. Some employees lacked challenging tasks.	High degree of task interdependence, no information about sufficient expertise. Structure highly dependent upon contract size, third parties and on highly specific knowledge. No mention of lacking challenging tasks.	Task interdependence and sufficient skills with team members but dependent upon contract size and highly specific knowledge, but not on third parties. No mention of lacking challenging tasks.
Supportive organizational context	Good possibilities for training and development and information systems in place. Sufficient resources and time. Personal rewards, subsidiary-wide rewards but no team rewards. Did not experience tedious information systems, personnel shortages, and time and work pressure. Generally a lot of autonomy within the klantteams. Own planning, good execution of own tasks and low ownership. Have to adopt to boundaries set by management.	Good possibilities for training and development and information systems in place. Sufficient resources and time. Personal and subsidiary-wide rewards, but no team-wide rewards. Experienced tedious information systems, personnel shortages, and time and work pressure. Generally a lot of autonomy within the klantteams. Own planning, good execution of own tasks and low ownership. Have to adopt to boundaries set by management.	Possibilities for training and development and information systems in place. Sufficient resources and time. Personal rewards, but no mention of team-wide and subsidiary-wide rewards. Experienced tedious information systems but no time and work pressure and no personnel shortages. Generally independent klantteams with autonomy. Low ownership, no other mentions of autonomy.
Group processes			
Monitoring progress	Through mutual informing, no mention of information systems	Through mutual informing and information system	-

System monitoring	Through personal informing and information system	Through the information system, no mention of personal informing	-
Team monitoring and backup	Mutual support, lead engineer important in supporting contract manager	Mutual support and lead engineer important in supporting contract manager	No mention of mutual support or the role of lead engineer, but there was limited critical reflection in the teams
Coordination	Generally average coordination, low ownership. Poor communication, poor pre-planning and poor information distribution	Generally good coordination, low ownership. No mention of poor communication, poor pre-planning and poor information distribution	No mention of coordination. Poor information distribution but no mention of poor communication and pre-planning
Conflict management	Positive team atmosphere, self-regulating, time for each other, talking about conflicts and mutual trust and respect, and involvement of management. Occasionally not expressing thoughts, and type of customer influences conflict management.	Positive team atmosphere, self-regulating, time for each other, talking about conflicts, and mutual trust and respect, no mention of involvement of management. No mention of any negative aspects of conflict management.	Management mentions a good team atmosphere. Some team members were offended quickly, but no mention of not expressing thoughts or type of customer influencing conflict management.
Motivating and confidence building	Compliments and time for each other and no mention of like-mindedness. Experienced lack of attention for success within the team.	Compliments and time for each other and like-mindedness. No lack of attention for success but limited compliments from management.	-
Affect Management	Approach each other positively, but limited attention for success.	Approach each other positively, but limited compliments from management	-
Team Psychological Safety	Good team atmosphere, approachableness, open to new ideas, possibility to make mistakes and time for each other.	Good team atmosphere, approachableness, open to new ideas, possibility to make mistakes and time for each other.	Good team atmosphere, possibility for new ideas and possibility to make mistakes. No mention of approachableness and time for each other.
Leadership			
Management leadership	Coaching leadership style	Coaching leadership style	Coaching leadership style

Shared leadership	Contract manager ultimately responsible but sufficient room for input from the entire team	Contract manager ultimately responsible but a great deal of room for input from the entire team	Mutual responsibility but uncertainty prevails within teams

Self-managing team effectiveness

General performance	Positive about general performance, good customer satisfaction, good employee satisfaction. But improvements regarding coaching, laying off responsibilities to lower levels, connection between klantteams, outcome and unclear performance.	Positive about general performance, but no mention of good customer satisfaction or employee satisfaction. But improvements regarding connection between klantteams, laying off more responsibilities, and the fact that the plant director should be seen as part of the klantteam.	Positive about general performance and good customer satisfaction as well as good operational performance. No mention of employee satisfaction. But improvements regarding connection between klantteams, laying off more responsibilities to lower levels, and outcome.
Performance in the quotation process	Positive about general performance in quotation process, but improvements to be made about limited insight of the process engineer, immediately handling new quotations, further questioning the request of the customer, speed and the multiple people that have to approve of it.	Positive about general performance in quotation process, but improvements to be made about immediately handling new quotations, further questioning the request of the customer, the matching of the decision making unit, the speed and the multiple people that have to approve of it.	Positive about the general performance in the quotation process. No improvements were mentioned.
Performance in the assignment process	Somewhat positive about the general performance in the assignment process and partially about the communication. Improvements could be made on communication, costs of failure, invoicing, scheduling of people and materials, final delivery of the services, only starting when the order is in, and a lot people that interfere in the process.	Somewhat positive about the general performance in the assignment process. Improvements that could be made on the scheduling of people and materials and a lot of people that interfere in the process. No other points of improvement were mentioned.	-

Additional findings

Independence

Value of klantteams	Improved communication, one point of contact and improved customer satisfaction.	Substantially improved communication, improved employee satisfaction, improved customer satisfaction, efficiency, one point of contact and good fit with the corporate structure.	Improved communication, customer satisfaction and a team-feeling.
Developments in technical service sector	Increasingly commercial role of contract manager, tasks of service mechanics to higher level, and a general increase in required skills across all team roles	Increasingly commercial role of contract manager, increasingly proactive role towards customer, tasks of service mechanics to higher level, and a general increase in required skills across all team roles	Increasingly commercial role of contract manager, increasing administrative tasks with process engineer, increasingly proactive role towards customer, and a general increase in required skills across all team roles.
Working with third parties	Generally positive about working with third parties. Third parties were often involved because of highly-specific work. Improvements could be made regarding communication and tasks that are being taken over all of a sudden.	Very negative experience about working with third parties. Third parties were often involved because of highly-specific work. Negative experience because of no customer empathy, poor communication and tasks that are being taken over all of a sudden.	No experience was discussed, but third parties would be involved because of highly-specific work.

Next, an overview will be given of how the three subsidiaries rank on the main variables in this study and on the objective performance parameters.

Table 6

Further summary of the findings and performance indicators per subsidiary

	Subsidiary A	Subsidiary B	Subsidiary C
Team structure			
Real team	++	+/-	+/-
Clear direction	++	+/-	
Enabling team structure	+	+/-	+/-
Supportive organizational context	++	+	+
Group processes			
Monitoring progress	+	+	
System monitoring	+	+	
Team monitoring and backup	+/-	+/-	-
Coordination	+/-	++	+/-
Conflict management	+	++	+/-
Motivating and confidence building	+	+	
Affect Management	+	+	
Team Psychological Safety	++	++	+
Leadership			
Management leadership	++	++	++
Shared leadership	+	+	+/-
Self-managing team effectiveness			
General performance	+/-	+/-	+
Performance in the quotation process	+/-	+/-	++
Performance in the assignment process	-	+/-	
Additional findings			
Value of klantteams	+	++	+
Developments in technical service sector			
Working with third parties	+	--	+/-
Results			
Actual performance 2018	+	+	++
Inflow	++	+	+/-
Outflow	++	+	+/-
Productivity	+/-	+/-	+/-
Unproductivity	+/-	+	+/-
Absenteeism	+/-	+/-	+/-

Note. Meaning of abbreviations: Very good (++), good (+), average (+/-), bad (-) and very bad (--)

Table 6 represents an overview of the subsidiaries and how they 'rank' on the particular antecedents or subjects. Within this table it becomes clear that there is variation in rankings, and thus in how the different subsidiaries and their klantteams perform. For the row 'Developments in technical service sector' it was not possible to give a ranking, since these covered general subjects that were mentioned in the interviews. Next, all main subjects will be discussed to see how the different subsidiaries are performing with regard to each subject.

First, with regards to team structure it becomes evident that subsidiary A is performing the best out of all the subsidiaries. The klantteam appeared to have had a very clear team goal and every team member knew what purpose they were expected to fulfill. Some members were part of multiple klantteams, but the team structure was not dependent upon 'outside' parties. There was a high degree of task interdependence and the team structure appeared to not be reliant on highly specific knowledge and third parties. The type of work was however an important factor in influencing the team structure, since different contract types and sizes required different team structures and skills. Within subsidiary A, the organizational context was also considered very good, since team members experienced good possibilities for training and development, had sufficient time and resources, received personal and subsidiary-wide rewards, did not experience the information systems to be tedious, had no problems with time or work pressure, and experienced sufficient autonomy. It could therefore be argued that subsidiary A is performing the best with regards to team structure, since very little limitations or difficulties were found, the only one being that some employees lacked challenging tasks. Subsidiary B and C did not perform 'bad' either, but faced different challenges. Subsidiary B faced challenges related to limited insight in results and a lack of a strategic goal. Also, the structure was dependent on contract size, third parties and on highly specific knowledge as well as some employees who experienced time and work pressure, tedious information systems and personnel shortages. Within subsidiary C it also became evident that certain team members where part of more than one klantteam due to their highly specialized skill set. Nevertheless, subsidiary A appears to be performing the best with regards to team structure.

Second, findings related to leadership were very similar across the subsidiaries. The leadership style that was most characteristic of management, was the coaching leadership style. Management within all three subsidiaries appeared to provide feedback, ask questions and stimulated employees to think for themselves. Management within all subsidiaries would have an open door and were characterized as being approachable. However, some variation was found within shared leadership across subsidiaries. Within subsidiary A and B shared leadership was characterized by the contract manager having full decision-making authority in all teams. However, the contract manager would base his decisions on input from all team members in his klantteams. This was especially the case within subsidiary B it appeared. All team members felt equal and had the idea they had a true influence on the decisions that were being made. No one felt superior to another, which was a true strength of their team it was argued. Both subsidiary A and B were performing well with regards to shared leadership. Within subsidiary C the shared leadership was also characterized as the contract manager with full decision-making authority and mutual consultation, but a certain degree of uncertainty prevailed within the teams. This led them to base their decisions on input from management, through consulting them on a regular basis. This uncertainty was not found within the other two subsidiaries. Nevertheless, both subsidiary A and B were performing very well, and where the impression was created that every member within subsidiary B was generally very happy with how things were going.

Third, it could be argued that subsidiary B is performing the best with regards to group processes. The team atmosphere within subsidiary B appeared to be very good. Team members were very satisfied with their team as they argued that everyone was approachable, there was time for each other, team members were very like-minded and there was mutual trust and respect. This was acknowledged and stressed by all team members. This was also considered

to be the reason why there were almost no conflicts within the team, and when there were, they would be discussed immediately and be resolved. It could also be argued that there was a high degree of team psychological safety, as members felt free to bring up new ideas, confront each other and talk things out. Within subsidiary B, the members appeared to coordinate their work in a good manner, which may have been due to the low ownership within the teams it was argued. The lead engineer had sufficient power to undertake actions and was considered to be a skilled employee in general. The importance of the role of lead engineer appeared to be crucial for good group processes to occur within subsidiary A as well. The only interesting point that was brought up was the limited compliments from management about successes. Nevertheless, subsidiary A did also perform good on group processes, but faced some challenges subsidiary B did not. Within subsidiary A the coordination was considered 'average', as occasionally there was poor communication, poor pre-planning and poor information distribution. It was brought up that some team members did not express their thoughts from time to time. This is in contrast with the presumed high degree of team psychological safety. Additionally, some members experienced a lack of attention for success within the team. Finally, the findings regarding group processes are incomplete for subsidiary C, which may have been due to the fact that the respondents within this subsidiary both resided in management levels. Some interesting points were found however. These mostly related to limited critical reflection within the teams, a sometimes poor information distribution and some team members being 'offended' too quickly according to management. Nevertheless, it could be argued that subsidiary B performs the best with regards to group processes.

With regards to self-managing team effectiveness, it could be argued that subsidiary C is performing the best, even though specific results about the assignment process are lacking. Management was generally satisfied with how the klantteams were currently performing. The teams yielded good customer satisfaction as well as good operational performance. Management was also satisfied with how the teams performed in the quotation process and found no points for improvement. Some points of improvement that were brought up, were related to a lack of connection between klantteams, laying off even more responsibilities to lower levels in the organization and a mediocre outcome. Subsidiary B was performing on average compared to the other subsidiaries. Respondents were generally positive about the performance, but improvements could be made with regard to connection between klantteams, laying off more responsibilities to lower levels, and the fact that the plant director should be seen as a team member of the klantteam. Also, quotations could be handled earlier and in a quicker manner, while requests of customers should be questioned more in depth by the entire team in order to really grasp what the customer actually wants. A point for attention was also that some respondents found that there were a lot of hierarchical levels that had to interfere with both the quotation and assignment process before it was possible to proceed with the respective request. Subsidiary A appeared to be performing the worst with regards to self-managing team effectiveness. Respondents were generally positive about their performance, but a lot of points for improvements were found. These related to coaching, laying of responsibilities to lower levels, connection between teams, focus on outcome and unclear performance. Within the quotation process, these related to limited insight of the process engineer, lack of immediately handling new quotations, not further questioning the incoming requests, speed and multiple hierarchical levels that have to approve. Finally, within the assignment process, points for improvement were related to communications, costs of failure, invoicing, scheduling of people and materials, final delivery of the services, only starting when the order is in and a lot of hierarchical levels that have to approve. Nevertheless, it remains complex to argue which firm is actually performing the best since the aforementioned statements are subjective and every subsidiary faces challenges unique to their specific situation. This is why it may also be important to look at some objective performance indicators within all three subsidiaries.

Due to confidentiality it is not possible to discuss the actual performance numbers, this is why an impression will be given of how the different firms are performing. When looking at the performance parameters, it becomes evident that subsidiary C has performed the best over 2018. Their profits are almost four times as big as compared to subsidiary A and B and where they performed substantially better than the initial prognosis for that year. Subsidiary A and B performed worse than the initial prognosis for that year, where subsidiary B almost reached their prognosis and subsidiary A did not come close to their initial prognosis. Comparing inflow, subsidiary C appears to have the lowest numbers, subsidiary B has double that and subsidiary C has almost 6 times the amount of inflow compared to A. Subsidiary C also has the lowest numbers of outflow, subsidiary B has 4 times that amount and subsidiary C has 10 times that amount. This clearly shows that the in- and outflow within subsidiary C is the lowest, while comparatively it is very high within subsidiary A. The productivity is lower than initially budgeted for all firms. The percentage absenteeism is about the same for all three subsidiaries and is close to 25% higher than the sector-wide absenteeism rate in the Netherlands (CBS, 2019). In conclusion, comparing the performance indicators it could be argued that subsidiary C is performing the best – similar to self-managing team effectiveness – across all three subsidiaries.

Finally, when comparing the additional findings, some similar but also varying results were found. An important recurring theme in all interviews, was that the different team roles within a klantteam changed or are changing. The contract manager is expected to take on a commercial role and lay off the operational tasks to the process engineers, lead engineers and service mechanics. This therefore led to more administrative tasks being taken over by the process engineer, and where the lead engineers and service mechanics had to take on tasks that previously belonged to the process engineer. This entire shift in job tasks, was met with some resistance on the work floor. Findings showed that the contract managers often had it difficult with handing over their operational tasks, because of uncertainty that their job would be done less well as it would have been done by themselves. Additionally, across all subsidiaries the added value of klantteams was also found to be similar: one point of contact, improved communication, improved customer satisfaction and a team-feeling.

Interesting, is the fact that the different self-managing teams had to deal with third parties on a day-to-day basis. Findings showed different experiences in working with working with these third parties. The collaboration with third parties was most negatively described within subsidiary B. They generally were very negative as they argued that the third parties had no customer empathy and were very poor in communication. Whenever the third party was an associate company of Unica, this was even worse, as the customer would still see 'one' Unica. The good efforts of the klantteam would therefore be constrained through efforts of these associates in their perspective. Within subsidiary A, some respondents experienced that third parties took over tasks that originally belonged to them which led them to only carry out tasks they did not like. Nevertheless, working with third parties was generally done when tasks were too specific for the klantteam or when they did not fit the tasks related to their own job. Subsidiary A generally had a positive experience in working with third parties, and only points for improvement were related to communication and tasks that were taken over all of a sudden. Within subsidiary C not many additional findings were found.

Overall, with regards to the different aspects of this study, there certainly are differences across subsidiaries. Interesting is that every subsidiary appears to performing better than the others on one particular aspect. Subsidiary A was performing the best with regards to team structure, subsidiary B with regards to group processes and subsidiary C with regards to actual effectiveness and thus performance. Leadership appeared to be similar across subsidiaries. It is therefore very hard and complex to argue which the best performing subsidiary is in regard to all proposed antecedents and additional findings, but according to the proposed definition of

self-managing team effectiveness as performance parameters set by management, subsidiary C would be performing the best.

5 Discussion

5.1 Research question and sub-questions
The main aim of this research was to determine if the three condition categories (team structure, leadership and group processes) and the factors within that have been examined in other contexts (different industries, teams with more homogenic knowledge and skills, and less interdependency) can also be identified within the technical service sector and among teams with diversity in knowledge and skills and interdependency. Within this section, first an answer will be given to the two sub-questions that were formulated, then – derived from the results of the two sub-questions - the main research question will be answered.

5.1.1 First sub-question (is-situation)
The first sub question sought to answer how the self-managing teams at Unica were currently being structured, lead and how different group processes took place. This study showed that there were variations in how these variables manifested themselves across subsidiaries.

Team structure
First, results show that the klantteams typically consisted of a 'core team' with contract managers, process engineers, lead engineers and service mechanics. Around this core team, findings show a more flexible layer in which third parties are included dependent on the contract with the customer. For some larger contracts third parties were included, while for others, mainly smaller contracts, the 'core team' could handle the customer demand. Nevertheless, whenever the team was serving a customer that required a broader range of work, associate companies (e.g. Unica Building Projects) or other companies would be included within the self-managing teams, which led to members entering and leaving the 'core team'. Galbraith (1974) argued that interdependencies between different members of different teams increase the necessity of coordination, information exchange, knowledge sharing and solving of emerging conflicts. Also, it could be argued that the 'continuity of group membership' is affected by this. According to Cohen et al. (1996) the continuity of group membership is important, as considerable time is lost orienting new members to requirements within a team, and to the way that specific group works, which may affect the self-managing team effectiveness.

 Second, findings showed that the current team structure allowed for a high degree of task interdependence as team members relied on each other in successfully carrying out their work. However, it could be argued that the work of the teams is low on task differentiation, in other words the task itself is not an autonomous forming self-completing whole (Cummings, 1978; Kuipers, van Amelsvoort & Kramer, 2010). This may therefore constrain team effectiveness as through an autonomous group task, the task boundary becomes more differentiated from other organizational units, which facilitates technically required cooperation as it bounds interdependent tasks into a common unit (Cummings, 1978). The aforementioned may also be the reason why tasks are being exported across teams or to third parties. However, one could argue that it is impossible to harness all required knowledge and skills within a self-managing team in the technical services sector, as the skills required vary widely and are all highly specialized by nature. This is in line with the model of Atkinson (1984) who also established that there is a 'core group' with permanent members and functional flexibility, while there is a 'layer' around this core group which has numerical flexibility so that the headcount can be easily increased and decreased in line with external expectancies.

 Third, the organizational context was generally deemed supportive within all subsidiaries. The options for training and development were good, information systems were available, personal and subsidiary-wide rewards were granted and teams had much autonomy. Although these were positive factors, the information systems were often described as 'tedious',

and some interviewees argued they experienced personnel shortages and time and work pressures.

Leadership
The current management and shared leadership within Unica were interpreted similar across subsidiaries. Management leadership was most often characterized as a coaching leadership style. Respondents – both hierarchical leaders and team members without hierarchical leader tasks – argued that management within all three subsidiaries provided feedback, asked questions, stimulated employees to think for themselves, had an open door and were described as approachable in general and was found to be effective. Stoker (2008) indeed argues that the coaching leadership style, alongside the directive leadership style, is an effective leadership style for self-managing teams. However, interesting are remarks made by the plant directors of subsidiary A and B. Both directors argued that they should be seen as a part of the klantteams and that team members should treat them as such. But the plant director of subsidiary B did not find this to be easy, as he was met with resistance and experienced that the members of the teams, for example, him attending some meetings as would impact the team members negatively. It would do 'something' with the team members. To my knowledge, this subject has not been discussed or investigated within the literature.

Shared leadership also appeared to be present across the subsidiaries. Findings of this study point to resistance towards the transference of power. Within the self-managing teams the findings show that the contract managers were expected to let go of any operational tasks, and leave them to the process engineers, lead engineers and service mechanics, while fully directing their attention towards commercial tasks. This transference of power was met with resistance by the contract managers. In their opinion, tasks would not be done as good when done by their subordinates. This directly relates to difficulties related to leadership within self-managing teams in literature, as it is stated that formal leaders often experience difficulties change, unwillingness to let go of power, fear of appearing incompetent and fear of job termination (Stewart & Manz, 1995).

Also, within this company, the shared leadership in the teams appeared to deviate from design features from literature, but was found to be effective nonetheless. It could be argued that there was no formal shared leadership but rather a more informal style, as the contract manager still had full decision-making authority and could therefore be seen as a 'hierarchical leader', however team members felt that they could influence all decisions and that their input was taken seriously and highly valued. Literature indeed shows that teams can experience high levels of empowerment, while still having an influential external leader, resulting in little to no shared leadership (Carson et al., 2007). This was different in this case as the influential leader resided within the team.

Group processes
There appeared to be some variation in group processes across the three different subsidiaries. Monitoring progress and systems monitoring generally occurred through personal informing and through information systems. There was also enough support across teams, and where especially the lead engineer played a crucial role in supporting the contract managers and process engineer, as he could be seen as the linking pin between the office and the operations.

Moreover, results showed that sometimes challenges became apparent with regards to communication, pre-planning and information distribution. Multiple times coordination was characterized as 'poor' and interviewees pointed to poor communication between the process engineers and the lead engineers or service mechanics. Nevertheless, the conditions for preventive and reactive conflict management was good within all subsidiaries. A good team atmosphere, time for each other and mutual trust were identified as preventive conditions, while

reactive conditions often manifested itself in talking about problems and involving management whenever something could or would escalate. Motivation and confidence building seemed to profit from compliments and a general like-mindedness within the team. However, respondents argued that more attention could be paid towards successes and more compliments. Team members generally approached each other positively. The conditions for team psychological safety were also good, since there was a good team atmosphere, approachableness, possibility to make mistakes and room for new ideas across the subsidiaries.

The current results show that the team structure differs from standard literature about self-managing teams, as the team structure is affected by third parties. Also, deviating from "typical" self-managing team structure and features, it can be argued that the teams at Unica and comparable companies and teams do not have a task that is a self-completing whole. With regards to leadership and group processes, no differences have been found in comparison with the literature.

5.1.2 Second sub-question (should-be situation)

The second sub-question sought to answer how the effectiveness of the self-managing teams within Unica regarding team structure, leadership and group processes could be improved. The data revealed that there were several ways to further improve the effectiveness of the self-managing teams.

Team structure and effectiveness
This study pointed to several points for improvement for the team structure within Unica. *First,* it was mentioned by one manager operations that teams could benefit from more authority and responsibilities. As the teams currently already had a lot of responsibilities residing at lower levels within the organization, which led to enhanced performance, it was argued that even more responsibilities could be transferred downward such as planning and ordering of materials. However, it was not certain that all employees would agree with more ownership, as they thought these tasks did not belong to their job but to for example to the process engineer. According to literature, increasing lower level autonomy is not negative by definition, but requires additional team monitoring to counteract process losses and coordination errors (Langfred, 2004). Also, it was argued that certain team members lacked challenging tasks, insight into results and lacked a strategic goal. It was argued by the process engineer that through a strategic goal, employees were able to think more concretely about the team and its future, which would positively affect the performance.

Leadership and effectiveness
It was argued that the effectiveness of teams could be improved when managers were considered as team members. According to this line of reasoning, team members might better adapt to requests beyond their task responsibilities, by involving management. The plant manager of subsidiary B related such a way of working to a reduction of time waste caused by unnecessary meetings. However, management was never mentioned as an actual team member. Employees on the operational levels might have "them" versus "us" attitudes. The deeper reason can potentially be found in the old Unica culture: a culture characterized as directive and hierarchical instead of "open door" and approachable.

Group processes and effectiveness
With regard to group processes, several anchors effectiveness improvement were found. On occasion, the coordination within the teams were not up to the standard required, due to poor communication, pre-planning and information distribution. The main reason was a lack of communicative synchronization between operations and the process engineer. Both parties had

limited insight into each other's work, which led to unclarities. Coordination improvement would be possible through proactive communication from process engineer to service mechanics and vice versa. This should lead to improved coordination, and therefore to less failure costs and increased performance. Also, more attention towards complimenting each other, from both management and within the teams itself, could benefit the team's performance. Illies & Judge (2005) for example found that frequent positive feedback, resulted in increased task performance and learning development.

Findings show that the communication – which resulted in bad coordination – 'between' teams was poor. Since the introduction of self-managing teams, respondents got the feeling that there were separate business units. In other words, communication between klantteams was bad. Teams would generally 'keep' people within their own team, in order to successfully serve their own contracts. Whenever another team was in need of additional people, it appeared that it was hard for teams to 'lend out' people to other teams in fear of losing those members for a longer period of time. This would therefore impede their effectiveness. Literature suggests that that inter-team collaboration, may be a mechanism that can be used to further enhance organizational effectiveness and innovation (Cha, Kim, Lee & Bachrach, 2015). Due to this inflexibility, some self-managing teams may have been performing well, but at the cost of performance of another team, therefore damaging the performance of Unica Building Services in general. The inter-team connection therefore appeared to be important for effectiveness.

Additional factors: conditions for effectiveness unrelated to team structure, leadership or group processes
It was argued by one contract manager that the general performance of teams could be improved through additional external coaching. Regarding the quotation process, several point for improvement were found: immediately handling new quotations, further questioning the request of the customer, speed and generally lowering interference of other stakeholders. Regarding the assignment process, point for improvement related to: costs of failure, invoicing, scheduling, final delivery of services, only starting when the order is in and the interference of other stakeholders. Improvement of the aforementioned points could all benefit the overall effectiveness of the teams.

5.1.3 Research question
This study sought to answer the research question as follows:

"*Which dimensions of team structure, leadership and group processes play a role in the effectiveness of self-managing teams in the technical service sector – in particular self-managing teams with team member diversity concerning technical knowledge and skills, and team member interdependence?*"

This was done by conducting a study within one company and three teams in three different subsidiaries. Thus, the empirical observations were limited. Is it then possible to draw broader conclusions, or in other words, to answer the wider, more general research question? According to Yin (2003), this is permitted as he writes the following: "*Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a sample, and in doing a case study, your goal will be to expand and generalize theories and not to enumerate frequencies*" (Yin, 2003, pp. 10). Therefore, the current findings can in this sense be used to answer the general research question.

By having answered the two sub-questions, several relevant themes emerged for teams within the technical service sector, or more specifically, teams with team member diversity

concerning knowledge and skills and with a high degree of interdependence. This study found – as initially proposed - that technical service work is characterized by highly-specialized and diverse knowledge and skills, and that there is a high degree of interdependence within and across teams. This team member diversity and interdependence led to *two* different situations, which influenced the proposed conditions that presumably affect self-managing team effectiveness in this study: (1) team members shifting between teams in order to fill qualitative gaps and (2) regular collaboration with third parties. Furthermore, the contract size also appeared to influence the team structure.

First, team member diversity and interdependence appeared to affect the team structure and group processes. Within the technical service sector, customers may demand services which require diverse and highly specialized knowledge. This study indeed found that no self-managing team within the case subsidiaries generally harnessed all these required knowledge and skills within the standard or core members of their team. This caused team members to *shift* between teams in order to fill qualitative gaps (i.e. a lack of knowledge and skills). Consequently, a change in team structure unveiled itself. Compared to the more traditional self-managing teams, it could be argued that the teams with a high diversity and interdependence have no real team with 'clear membership' as team members are obliged to switch between teams in order to successfully serve their customer. This study did not find that this affected the team performance in a negative manner however.

Additionally, this change in team structure may also further impede group processes like the coordination *between* teams. This study did find that since the introduction of self-managing teams, the communication between teams became considerably worse. A possible explanation for this may be that as certain self-managing teams 'possess' individuals with sought after knowledge and skills by other teams (e.g. fire safety), it might cause rivalry or resistance between teams, as teams are keen on serving their own customers and keeping their members within their own team. This may cause frustration within other teams, as their chances to successfully serve their customer (e.g. provide fire safety services), will be more complicated. It could therefore be argued that group processes like *coordination* and *team monitoring and backup behavior* are more complicated processes within teams that are highly diverse in knowledge and skills and are interdependent.

Second – and contingent on the first point - it may be that whenever self-managing teams do not possess all required knowledge and skills within their own team, and not even possess it within their own company or subsidiary, they are obliged to outsource this work to third parties. This study showed that self-managing teams had mixed responses to working with third parties. This collaboration appeared to be stressful because of communication barriers and a lack of customer empathy. Moreover, since customers often have an own technical services department, tasks were taken over which initially belonged to the self-managing team. This therefore appeared to be stressful. It was even more stressful whenever third parties were associate companies, as whenever these parties would deliver work of poor quality, the 'good image' of the self-managing team and the entire company would be diminished and would affect their effectiveness. Third parties therefore appear to influence team structure, as they 'enter' and 'leave' standard self-managing teams dependent upon customer requests, while simultaneously influencing group processes, as they would cause for more complicated coordination through communication barriers and a lack of customer empathy.

The aforementioned is relevant, as through the current team structure, the teams do not have an autonomous and self-completing whole task and therefore require third parties to successfully serve their customer. The team structure therefore appears to be resembling the description of a cross-functional team, rather than a self-managing team. Cross-functional

teams are defined as follows: team members have not worked together before, represent different knowledge domains, are responsible for solving complex problems with novel task demands, and have fluid team boundaries and temporary membership (Dougherty, 2001; Hackman, 2002; Van der Vegt & Bunderson, 2005; Edmondson & Nembhard, 2009). One of the problems that these teams often face is that they have to collaborate in a manner that transforms the different specialized knowledge possessed by the members into an integrative solution (Majchrzak, More & Faraj, 2012). Moreover, specialized knowledge leads to different thoughts and perceptions (Dougherty, 1992), situated representations (Boland & Tenkasi, 1995) and localized practices (Sole & Edmondson, 2002), which in turn create communication barriers and failures of interpretation. These barriers and difficulties often lead to knowledge integration problems, as these teams lack deep ties, shared processes for integrating ideas and previous common experiences in learning from each other (Hansen, 1999; Okhuysen & Eisenhardt, 2002; Tucker et al., 2007). These communication barriers were also found within the teams in this study. The teams within this case-study and the challenges they faced, may therefore better be characterized as cross-functional teams, because of their team structure which has implications discussed later on.

Another finding – unrelated to diversity and interdependence and more so related to the technical service work – is that the team structure appeared to be dependent upon the contract size with the customer. Customers which generally have more complex demands, have contracts of bigger monetary value. The larger and more complex work, often resulted in larger contracts, and therefore allowed for employment of a lead engineer. This was often not a feasible option for smaller contracts. This resulted in alterations in team structure. It led to differences in roles, as service mechanics for bigger contracts have less responsibilities (as there is a lead engineer) and where for smaller contracts they have more responsibilities (as there is no lead engineer). It was however not found that this affected the self-managing team effectiveness in any way.

The aforementioned findings display some main differences between traditional self-managing teams from literature and those which are operating in the technical service sector, have diversity in knowledge and skills and are highly interdependent. This is mainly represented in alterations in team structure and group processes. The team structure and team roles appear to be not so 'rigid or standard' compared to traditional self-managing teams. Concepts like 'clear membership' and 'task interdependence' in traditional self-managing team literature, tend not to translate so well to teams in this setting because of team members shifting between teams and having to collaborate with third parties regularly. The influence of team members shifting between teams and the influence of third parties could therefore be relevant avenues for future research as this study showed that this influenced effectiveness. Also, group processes tended to differ, as there is more complicated coordination because of communication barriers and less customer empathy within and between teams. Findings related to leadership tend to translate well to teams that have team member diversity and interdependence. A coaching leadership style, as proposed in literature, appeared to be effective for self-managing teams in this setting and with these characteristics.

Unrelated to the aforementioned points, the self-managing teams were initially introduced because of reasons related to increased results, customer satisfaction and employee satisfaction. However, interviewees generally argued about performance as meeting the expectations set by management in terms of hard results. Self-managing team effectiveness is indeed most often researched as the performance of teams. However, performance as the main indicator for self-managing team effectiveness is too limited, as it could also be linked to health and well-being

of employees (Beer et al., 1985). Findings show that employees are generally happy and satisfied with the way how teams were set up at the moment regarding team structure, leadership and group processes (with the exception of third parties). It could therefore be argued that the understanding of self-managing team effectiveness needs to be enlarged by incorporating individual and societal well-being as parameters of effectiveness (Beer et al., 1985). This is also acknowledged by Wageman (2001) as she argued that self-managing team effectiveness is not solely task performance, but also group processes (which allow teams to work increasingly well) and individual satisfaction (which makes the group experience more satisfying than frustrating to team members). On the latter two performance indicators, it could be argued that Unica is performing well as team members are generally satisfied with the introduction of self-managing teams and enjoy benefits related to improved communication, team-feeling and more efficiency it was argued. But, within this study self-managing team effectiveness was also solely defined by the performance of teams, and left out group process and individual satisfaction, and therefore resembled most research on self-managing team effectiveness. Perhaps, benefits could arise from a more 'holistic view' towards self-managing team effectiveness. This could especially be important since Unica has a focus on sustainability, and higher individual satisfaction levels are often associated with health benefits (Faragher, Cass & Cooper, 2005), which in turn have long-term benefits and also influence team effectiveness (Steenbergen & Ellemers, 2009).

5.2 Recommendations for practice
Already several points of attention for practice have been described by answering sub-question two. Adding to this, several recommendations for practice have been established

First, findings show that the entire installation technology branch is evolving, resulting in increased difficulty in tasks and general higher expectations of all roles within the klantteams. To accompany these changes, companies should take inventory about the knowledge and skills of their employees and ensure that these fit with external or market developments in the technology. In the case of Unica, it might therefore be good to go into discussion with the klantteams and define a clear strategic goal for the future in order to establish what is needed and expected of the team members. This will ensure team members have a clear goal, how they relate to that goal, and what has to be developed or done in the upcoming years. Training and development is then essential to successfully sustain this transition in roles and tasks.

Second, this research showed that self-managing teams can face communication difficulties with third parties, while simultaneously possessing features that could be associated with cross-functional teams. They might therefore benefit from certain practices that will alleviate or eliminate communication barriers across different parties with different specialized knowledge domains. One of these practices is mentioned by Marchwinski and Mandziuk (2000), who argue that well-structured weekly meetings greatly speed up the work and allow for faster and more varied feedback of ideas. During these meetings it might also be beneficial to encourage two-way interaction, where team members are encouraged to give feedback about information. This can often prompt other ideas by suggesting a fresh direction (Marchwinski & Mandziuk, 2000). As weekly meetings are very time consuming, periodical meetings could be a good option. Nevertheless, whenever conflicts occur within teams, the following is suggested: manage feelings, create a supportive environment, describe the conflict at hand, understand the shared goal of all members and create solutions accordingly (Marchwinski & Mandziuk, 2000).

Moreover, the research showed that the connection between separate teams has become worse since the introduction of self-managing teams, which affected the general performance in a negative manner as the interest of the self-managing team was valued above the interest of the company. It is therefore recommended to focus on diminishing the 'distance' or 'rivalry' between klantteams. Research of Cha, Kim, Lee & Bachrach (2015) found that transformational

leadership is positively related to teamwork quality, which positively relates to inter-team collaboration. It might be beneficial to create a philosophy of collaboration, through seeking collective goals, increasing mutual understanding, emphasizing a common-vision and promoting team morale (Jassawalla & Sashittal, 1998).

With regard to the current team structure, leadership and group processes no serious changes are recommended. Generally, all respondents were satisfied with how teams were being structured, lead and how group processes took place. However, relevant is that the role of lead engineer appeared to be very crucial within all subsidiaries as it was argued that a lead engineer was very helpful in both improving communication between the office and operations, while also diminishing the work load on the process engineer's side whenever they had sufficient ownership. It would therefore be recommended to sustain or further develop this role of lead engineer within more self-managing teams (where possible), and give them sufficient authority and power to arrange certain work activities (e.g. planning & ordering of materials) as it appeared that this would make their job more 'satisfying' while alleviating work load on the process engineers. It was however argued that Unica is already working on this, as they attempted to see how far they can take the role of lead engineer as several beneficial effects were found since they had sufficient authorities.

5.3 Limitations of the current research and recommendations for future research

This study is not without limitations. First, findings within subsidiary C could be described as 'incomplete', as it was only possible to interview two managers, because of the self-managing teams work pressure. Therefore, the experience of team members is lacking. This could therefore lead to a distorted 'image' of this subsidiary and how the team structure, leadership and group processes were present here. Especially information on group processes appeared to be missing, as the two respondents often were not dealing with the day-to-day processes that the self-managing teams had to deal with. Findings could therefore be incomplete for this subsidiary and this especially is a serious shortcoming since it would have interesting to see how this subsidiaries compared to the others, as subsidiary C appeared to be performing the best according to respondents and data, while there were difficulties in interviewing members.

Almost only subjective data was used for this study and this is the second limitation of the study. Only some objective performance parameters were obtained in the form of results, in- and outflow, and (un)productivity and absenteeism. It was not possible to obtain data about performance per self-managing team or data about employee and customer satisfaction.

Third, this study left out mission analysis, goal specification and strategy formulation, which could be considered a limitation. This is especially the case, as this study showed that team members sometimes lacked a strategic goal or insight into results, which are related to the three aforementioned group processes. For future research, it might therefore be of value to also include these processes.

Fourth, this study did not focus on the interplay between the three variables and how this could affect self-managing team effectiveness. During the coding process of this study, it became clear that some statements of interviewees could be coded under more than one variable or condition (e.g. statements under shared leadership could also be coded under team structure or group processes). Therefore, information on the possible interplay between variables is missing. However, the impression was caught that these variables certainly influence one another. It might therefore be interesting for future research to investigate how these three particular variables and factors interplay in influencing effectiveness of self-managing teams in the technical service sector.

This study interpreted self-managing team effectiveness solely in terms of performance. For future research it might be interesting to broaden the definition of self-managing team effectiveness, by also including individual and societal consequences (Beer et al., 1985). After

all, these have proven to be important for organizational success as well. Also, it might be interesting to investigate what the influence is of team (in)stability or (dis)continued group membership as a condition for self-managing team effectiveness. Moreover, as this study found that the team structure of self-managing teams within the technical service sector is dependent upon highly-specialized knowledge, interdependence, size of contract with the customer, team member shifting and third parties, it seems valuable to investigate these factors as conditions for self-managing team effectiveness. Especially for the use of third parties, since literature is critical about the use of 'flexible labor' as it has led to a division between organizational insiders and outsiders (Kalleberg, 2003). Also, since this research showed that management has a certain effect on operations – in other words, "them" versus "us" attitudes – it might be a valuable avenue for future research regarding self-managing team effectiveness.

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Appendix A – Operationalization of variables

Table 7
Operationalization of antecedents for self-managing team effectiveness

Central subject	Dimensions	Operationalization
Team structure		
	Real team	Team set up for present purposes, bounded by social systems with clear membership and that exist relatively stable over time
	Clear direction	Clearly defined purposes within the team and a focus on outcome
	Enabling team structure	Appropriate team size, optimal skill diversity, task interdependence challenging task goals and performance targets and articulated strategy norms
	Supportive organizational context	Reward systems, information systems, educational system and sufficient resources for self-managing teams
Leadership		
	Management leadership	External control over the self-managing teams from e.g. management
	Shared leadership	Emergent team property that results from the distribution of leadership influence across multiple team members
Group processes		
	Monitoring progress	Tracking task and progress towards mission accomplishment
	Systems monitoring	Tracking team resources and environmental conditions
	Team monitoring and backup behavior	Assisting team members to perform their tasks
	Coordination	Orchestrating the sequence and timing of interdependent actions
	Conflict management	Establishing conditions to prevent, control or guide team conflict and working through task and interpersonal disagreements
	Motivation and confidence building	Generating and preserving a sense of collective confidence, motivation, and task-based cohesion
	Affect management	Regulating member emotions during mission accomplishment
	Team Psychological Safety	A shared belief that the team is safe for interpersonal risk taking
Self-managing team effectiveness		
	Self-managing team effectiveness	The extent to which team members produce outputs that respect the standards set by the organization

Appendix B – Codebook

Table 8
Code table

Deductive code	2nd order code	Inductive codes
Team structure	*Real team*	• Dependent upon third parties • Part of multiple klantteams • Clear goal
	Clear direction	• Clear purpose • Limited insight into results • No strategic goal
	Enabling team structure	• Sufficient expertise • Task interdependence • No challenging task goals • Involvement of third parties • Specialized knowledge • Dependent upon work
	Supportive organizational context	• Possibilities training and development • Personal rewards • Teamwide rewards • Subsidiary wide rewards • No rewards • No teamwide rewards • Difficult information systems • Information systems • Sufficient resources and time • Personnel shortages • Time pressure • Work pressure • Within boundaries of Unica • Own planning • Good execution of tasks • Low ownership
Leadership	*Management leadership*	• Approachable • Out of necessity • Coaching • Letting go of responsibilities • Not noticeable
	Shared leadership	• Contract manager responsible • Joint consultation • Uncertainty • Letting go of responsibilities
Group processes	*Monitoring progress*	• Through information systems • Mutual informing
	Systems monitoring	• Through information systems • Personal informing
	Team monitoring and backup behavior	• Lead engineer supports contract manager • Mutual support • Be more critical
	Coordination	• Good coordination • Letting go of responsibilities

		• Poor communication
		• Poor pre-planning
		• Poor information distribution
	Conflict management	• Involving management
		• Good team atmosphere
		• Talking it out
		• Time for each other
		• Mutual trust
		• Mutual respect
		• Self-regulating
		• Not expressing thoughts
		• Quickly offended
		• Type of client
	Motivating and confidence building	• Compliments
		• Aligned thoughts
		• Time for each other
		• Limited compliments management
		• Limited attention for success
	Affect management	• Positively approach each other
		• Limited compliments management
		• Limited attention for success
	Team psychological safety	• Good team atmosphere
		• Bringing up new ideas
		• Approachable
		• Possibility to make mistakes
		• Time for each other
Self-managing team effectiveness	*General performance klantteams*	• Good general performance
		• Good customer satisfaction
		• Good employee satisfaction
		• Good operational performance
		• Lack of coaching
		• Lack of letting go of responsibilities with contract managers
		• No separate business units
		• Lack of initiative with employees for T&D
		• Letting go of responsibilities
		• Unclear performance
		• Poor result
		• Plant director as team member
	Performance in the quotation process	• Good general performance
		• Limited insight process engineer
		• Immediate action
		• Further questioning the clients request
		• Matching of the decision making unit
		• Poor speed
		• Multiple stages
	Performance in the assignment process	• Good communication
		• Good general performance
		• Poor communication
		• Costs of failure
		• Poor invoicing
		• Poor planning people and material
		• Poor final delivery of work

		•	Only start when order is in
		•	Multiple stages
Other	*Value of klantteams*	•	Customer satisfaction
		•	Improved communication
		•	One point of contact
		•	Efficiency
		•	Employee satisfaction
		•	Good fit with the corporate structure
		•	Team feeling
	Developments in the work field	•	Administrative tasks process engineer
		•	Commercial role contract manager
		•	Increasingly proactive role of entire klantteam
		•	Tasks of mechanics to new level
		•	Higher level of all team roles
	Working with third parties	•	Not part of tasks
		•	Positive experience
		•	No customer empathy
		•	Negative experience
		•	Poor communication
		•	Tasks are taken over

Appendix C – Interview scheme and informed consent

Het doel van dit interview is om inzicht te krijgen in de zelfsturende teams en de effectiviteit bij Unica. Ik zou daarom eerst graag wat algemene informatie vragen en wil daarna graag twee dagelijkse voorbeeldsituaties doorlopen. Het is belangrijk om inzicht te krijgen in uw rol/functie in deze situaties en hoe u denkt over bepaalde activiteiten en/of processen. De twee voorbeeldsituaties die ik wil doorlopen met u zijn het offerte proces en het opdracht proces. Alle informatie die u verstrekt in dit interview wordt geanonimiseerd en zal niet te herleiden zijn naar u. Als u het eens bent met wat ik zojuist verteld hebt, kunt u dan dit informed consent lezen en tekenen? Eerst zou ik dus graag wat algemene informatie willen.

1. Wat is uw functie binnen dit bedrijf?
2. Welke taken horen bij deze functie?
3. Hoelang doet u dit werk al?

Cases

Dan zou ik nu graag de twee voorbeeldsituaties door gaan lopen met u. Deze waren dus het offerte- en opdrachtproces. Ik heb van Marcel Brand gehoord dat deze er ongeveer als volgt uitziet.
- Komt dit ongeveer overeen?
- Zijn er nog grote verschillen tussen bijv. kleine en grote projecten of nieuwe en bestaande klanten?

Ik ben in dit interview vooral geïnteresseerd hoe de processen behandeld worden vanuit het perspectief van het klantteam.

Offerteproces
4. Kunt u mij door het offerteproces heenlopen?
5. Hoe komt een opdracht binnen?
6. Wat zijn de rollen van het team in dit proces?
    - Hoe ziet het team eruit?
    - Zijn jullie afhankelijk van elkaar in het team?
7. Welke taken worden vervuld door elke rol?
    - Hoe gaat dat?
    - Wat gaat goed?
    - Wat kan er beter?
8. Zijn er taken waar jullie geen rol in hebben?
    - Wat vind je hiervan?
    - Wat gaat er goed?
    - Wat kan er beter?
9. Zijn er derde partijen aanwezig in het proces?
10. Hebben jullie voldoende middelen om het werk uit te voeren?
11. Hoe zelfstandig zijn jullie als klantteams?
12. Hoe verloopt de besluitvorming in het team?
    - Wie beslist wat?
    - Hoeveel autonomie hebben jullie om keuzes te maken?
13. Wat is de rol van management in dit proces?
    - Hoe gaat dat?

14. Wat vind je van de sfeer in het team?
    o Heb je het idee dat er over problemen gepraat kan worden?
    o Heb je het gevoel dat je een risico mag nemen? Bijv. nieuw idee inbrengen?
    o Kun je terecht bij je teamleden voor hulp bij een probleem?
    o Hoe veilig voelen mensen in het team zich om bijv. nieuwe ideeën in te brengen?
15. Hoe wordt er omgegaan met conflicten in het team?
16. Is er sprake van beloningen bij Unica wanneer jullie bijv. goed werk verrichten?
    o Wat vind je hiervan?
17. Hoe zijn de mogelijkheden voor training en ontwikkeling van teamleden?
18. Wat vindt je van de effectiviteit van het team?
    o Wat gaat goed?
    o Wat kan beter?
    o Hoe effectief zijn jullie?

Opdrachtproces
1. Kunt u mij wat vertellen over hoe het opdrachtproces verloopt?
2. Wat zijn de rollen van het team in dit proces?
    o Hoe ziet het team eruit?
    o Zijn jullie afhankelijk van elkaar in het team?
3. Welke taken worden vervuld door elke rol?
    o Hoe gaat dat?
    o Wat gaat goed?
    o Wat kan er beter?
4. Zijn er taken waar jullie geen rol in hebben?
    o Wat vind je hiervan?
    o Wat gaat er goed?
    o Wat kan er beter?
5. Zijn er derde partijen aanwezig in het proces?
6. Hebben jullie voldoende middelen om het werk uit te voeren?
7. Zijn er nog verschillen tussen de verschillende onderwerpen die we net besproken hebben tussen de twee onderwerpen?
8. Wat vindt je van de effectiviteit van het team in het opdrachtproces?
    o Wat gaat goed?
    o Wat kan beter?
    o Hoe effectief zijn jullie?

Afsluiting
1. Hoe vindt je dat de klantteams in het algemeen functioneren?
2. Zijn er over het algemeen nog dingen die jij denkt dat beter kunnen?
3. Zijn er nog dingen die waar jullie als team nog behoefte aan hebben?
4. Heeft u nog verdere opmerkingen?

Dan wil ik u hartstikke bedanken voor het interview. Als u graag ingelicht wil worden over de resultaten van dit onderzoek dan zou ik graag uw e-mailadres krijgen.

Offerte proces
a. Aanvraag klant
b. Beoordelen aanvraag: aanbieden ja/nee
c. Maken calculatie
d. Maken aanbieding
e. Uitbrengen offerte
f. Onderhandelen.

Opdracht proces
a. Offerte wordt opdracht
b. Accepteren opdracht
c. Werk voorbereiden
d. Inplannen: Mensen en materiaal
e. Voorbereiden uitvoeringswerkzaamheden
f. Uitvoeren
g. Opleveren
h. Factureren
i. OHW gesprek (resultaat, prognose, etc.) met Manager operations

Toestemmingsverklaringformulier (informed consent)

Titel onderzoek: "Self-managing team effectiveness within the technical service sector: the influence of team structure, leadership and group processes".

In te vullen door de deelnemer

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode en doel van het onderzoek. Ik weet dat de gegevens en resultaten van het onderzoek alleen anoniem en vertrouwelijk aan derden bekend gemaakt zullen worden. Mijn vragen zijn naar tevredenheid beantwoord.

Ik begrijp dat film-, foto, en videomateriaal of bewerking daarvan uitsluitend voor analyse en/of wetenschappelijke presentaties zal worden gebruikt.

Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment zonder opgaaf van redenen mijn deelname aan dit onderzoek te beëindigen.

Naam deelnemer: …………………………………………………………………..

Datum: ……………   Handtekening deelnemer: …...………………………………….

In te vullen door de uitvoerende onderzoeker

Ik heb een mondelinge en schriftelijke toelichting gegeven op het onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker: …………………………………….…………..

Datum: ……………   Handtekening onderzoeker: ...………………………………….