

We want to do it our way!

But we can't...

A qualitative gap-analysis which is focused on the Division of Work and the Human Resources of teams for the purpose of effective autonomous teams at Area 1 of the Packaging department of Heineken Den Bosch

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Abstract

The reason for this research was that Heineken wants to implement autonomous teams at its breweries worldwide. Area 1 of the Packaging department of Heineken Den Bosch is assigned as a pilot.

However, Area 1 is facing problems with the effectiveness of the autonomous teams. The problems are expected to be the result of a poorly designed Division of Work and/or a poorly designed Human Resources (HR) of the teams. Therefore, this research was aimed at making recommendations to improve the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch for the purpose of effective autonomous teams, by generating insight in the similarities and differences between the desired and the actual situation concerning effective autonomous teams and its Division of Work and HR.

To reach this goal, a gap-analysis was performed. The desired situation as described in the theory, concerning the effective autonomous teams and its design of the Division of Work and the HR, was compared with the actual situation at the teams at Area 1 of the Packaging department of Heineken Den Bosch, which was researched by conducting semi-structured interviews with operators and managers of Area 1. Effective autonomous teams are determined by researching the regulating capacity, fixed groups and joint responsibility for tasks and the production process. Division of Work of effective autonomous teams is determined by researching the definition of tasks and the interrelation of tasks. HR of effective autonomous teams is determined by researching whether the operators are knowledgeable, skillful and motivated by the design of HR practices of Heineken.

As a result, Area 1 does not have effective autonomous teams. The Division of Work of the teams is well designed. Both dimensions, definition of tasks and interrelation of tasks correspond with the desired situation. This has a positive influence on the regulating capacity of the operators and their joint responsibility for tasks and the production process.

HR of teams is not well designed. The operators at teams of Area 1 do not have sufficient skills, knowledge and motivation to have regulating capacity and to take joint responsibility for tasks and the production structure. This is the result of poorly designed HR practices recruitment & hiring, training, compensation and performance management. The HR practices team leaders and climate & culture are designed in line with the desired situation

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Chapter 1: Introduction

1.1 Heineken case

Recently, Heineken has been aiming to improve its business by becoming a world-class brewery (Appendix 1). This means that an organization has “a vision which is owned by employees and understood by customers” (Carson, 2017). Being a world-class organization helps Heineken to attract the right people for the organization (Appendix 1). Another aspect of a world-class organization is that it can reduce costs by excellent functioning (Carson, 2017). Heineken wants to achieve the goal of being a world-class brewery by implementing permanent autonomous teams in the whole organization. With autonomous teams, costs can be reduced by minimizing supporting departments (Appendix 1). According to the literature, autonomous teams are fixed groups of employees with joint responsibility for the whole production process and for tasks aimed at process control, solving daily problems and improvement of methods, without consulting supervisors or supporting services (Van Amelsvoort & Scholtes, 1994, p. 11). The Heineken brewery in Den Bosch is assigned to set an example for the other breweries. Last year, Heineken Den Bosch started a pilot at its Packaging department which is focused on the formulation and implementation of autonomous teams at production lines. However, Heineken is facing several problems with the autonomous teams.

At first, the autonomous teams do not show any sign of self-reliance (“*zelfredzaamheid*”) which results in the lack of making independent decisions (Appendix 1). This means that supporting departments still have to consult in order to make a decision. Moreover, individuals within the teams do not take the responsibility needed which means that problems are immediately shifted to other team members, without assessing what the individual can do about the problems (Appendix 1). Furthermore, the team members do not approach each other to give feedback. Besides, the team members do not take the initiative to structurally solve problems, but stick with temporary solutions. Due to these problems, Heineken is unable to further minimize the supporting departments because the autonomous teams still rely on them. In order to be able to minimize the supporting departments, effective autonomous teams are needed, but Heineken does not know how to make the autonomous teams effective (Appendix 1).

1.2 Theoretical insight on the case

From a sociotechnical point of view, it is expected that the current conditions are not appropriate for the effectiveness of the autonomous teams. These conditions are part of the infrastructure of the organization. To be more specific, the expectation is that the problems regarding the ineffectiveness of autonomous teams are due to the organizational infrastructure of the teams at Area 1 of the Packaging department of Heineken Den Bosch. According to Achterbergh & Vriens (2019, p. 26-27), an organizational infrastructure entails Human Resources (HR), which refers to knowledgeable, skillful

and motivated people, the Division of Work, which refers to the way the tasks within the organization or teams are defined and related to each other, and technology, which refers to all resources except the human resources. According to the case description, problems like ‘not taking responsibility’ and ‘solve problems structurally’ might respectively be related to the HR and the Division of Work of the teams. The technology does not seem to form a cause for the described problems (Appendix 1). Therefore, keeping in mind the limitations of this research regarding its size and available time, the technology is not taken into account in this research. When the organizational infrastructure is designed in the appropriate way, it can enable autonomous teams to become more effective. An appropriate design of the Division of Work contributes to the effectiveness of autonomous teams (Clark & Wheelwright, 1992). Besides, autonomous teams can become effective when the right HR practices are used (Salas, Kosarzycki, Tannenbaum & Carnegie, 2005). This is because HR practices can form knowledgeable, skillful and motivated people who are suitable to work in autonomous teams. More information can be found in Chapter 2.

1.3 Goal of this research

As described before, there is a relation between the infrastructure of an organization and the effectiveness of autonomous teams. At this moment, Heineken has a lack of insight on how to improve the effectiveness of its autonomous teams. By performing a gap-analysis, the problems in the Division of Work and HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch, which influence the effectiveness of the autonomous teams, can be discovered. As a result, recommendations can be made about how to improve the Division of Work and the HR for the purpose of effective autonomous teams. The corresponding goal of the research is as follows:

‘Making recommendations to improve the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch for the purpose of effective autonomous teams, by generating insight in the similarities and differences between the desired and the actual situation concerning effective autonomous teams and its Division of Work and the HR.’

1.4 Research question

The research question, which suits the goal of the research, is as follows:

“What are the similarities and differences between the desired and the actual situation concerning the effectiveness of autonomous teams and the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch?”

In order to answer the research question, the following sub questions are formulated:

- Sub question 1: What is known in the literature on the desired situation concerning the effectiveness of autonomous teams?
- Sub question 2: What is known in the literature on the desired situation concerning the Division of work and the HR of effective autonomous teams?
- Sub question 3: What is the actual situation of the teams at Area 1 of the Packaging department of Heineken Den Bosch concerning the effectiveness of autonomous teams?
- Sub question 4: What is the actual situation of the teams at Area 1 of the Packaging department of Heineken Den Bosch concerning its Division of Work and HR?
- Sub question 5: What are the similarities and differences between the desired and the actual situation concerning the effectiveness of autonomous teams and the Division of work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch?

With these five sub questions, the gap between the desired situation and the actual situation becomes clear. Moreover, the sub questions ensure that the answer on the research question is well structured. The first and second sub questions describe the desired situation, while the third and fourth sub questions describe the actual situation of the teams at Area 1 of the Packaging department of Heineken Den Bosch. Sub question five compares the answers of the desired sub questions with the answers of the actual sub questions. By comparing these two situations with each other, the research question can be answered and recommendations can be made to the teams of Area 1 of the Packaging department of Heineken Den Bosch.

1.5 Approach

A qualitative diagnostic research will be performed by focusing on one single case, which are the teams of Area 1 of the Packaging department of Heineken Den Bosch. By performing a gap-analysis, problems in the Division of Work and the HR of the teams at Area 1, which influence the ineffective performances of the autonomous teams, can be discovered. This entails that the desired situation of effective autonomous teams and its Division of Work and HR will be described, according to the literature. Thereafter, the actual situation will be described by conducting semi-structured interviews. As a result, the differences and similarities between the two situations can be described. This will eventually result in recommendations for Heineken for the purpose of effective autonomous teams. More information about the approach of the research can be found in Chapter 3.

1.6 Relevance

The social contribution of this research is that this research will result in recommendations for the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch, which enables autonomous teams to be effective. The recommendations can help Heineken, since the autonomous teams will be implemented at each brewery of Heineken worldwide.

Furthermore, this research may help other organisations with production lines which also consider implementing autonomous teams. Those organisations can learn from this research about how to design their Division of Work and HR in order to have effective autonomous teams.

This research contributes to the literature concerning the Division of Work and HR, and to the literature regarding autonomous teams. This research combines both concepts which creates new insight which can be relevant for both subjects in the literature. To be more specific, new insight is generated on the design of the Division of Work and HR in order to generate effective autonomous teams at production lines.

1.7 Outline of this research

In the next chapter the literature about effective autonomous teams, Division of Work and HR will be discussed. This chapter includes the desired situation concerning the effectiveness of autonomous teams, the Division of Work and the HR. The theory of effective autonomous teams will be mainly described by using the theory of Van Amelsvoort & Scholtes (1994). These authors formulated 9 design principles for effective autonomous teams. These principles can be linked to the Division of Work and the HR. HR will be described by using the theory of Achterbergh and Vriens (2019) and Salas, Kosarzycki, Tannenbaum and Carnegie (2005). The design of the Division of Work will be described by using the theory of Achterbergh and Vriens (2019) and the theory of Van Amelsvoort & Scholtes (2004). In Chapter three, the methodology of the research will be outlined. Next, the collected data will be analysed in Chapter four. This chapter describes the actual situation and compares this with the desired situation as described in Chapter 2. Finally, Chapter five consists of the conclusion, recommendations and discussion of this research.

Chapter 2: Theoretical framework

2.1 Introduction

This chapter is structured as follows: first, the concept of autonomous teams is described. Second, the desired design of effective autonomous teams is described via the theory of van Amelsvoort and Scholtes (1994). Furthermore, in section 2.2.4, the structure of an organization and the merry-go-round dilemma is discussed. In section 2.3, a description of an organizational infrastructure is given.

Thereafter, the Division of Work and HR of effective autonomous teams are described. In section 2.4, the relation between Division of Work and HR on effective autonomous teams are described. Finally, the conceptual model for this research is shown.

2.2 Autonomous teams

2.2.1 Perspectives on autonomous teams

Since 1988, the concept of autonomous teams has become more popular in the literature and management methods (Benders & Nijholt, 2005). In the literature, two broad perspectives are given, which have a different view on autonomous teams; an economic perspective and an organizational perspective. From an organizational perspective, autonomous teams are tools to motivate employees (DeVaro, 2006, p. 221). According to this perspective, autonomous teams contribute to the feeling of being in a team with a shared sense of purpose and mission which leads to more job satisfaction (Patanakul et al., 2012). Furthermore, autonomous teams can contribute to a higher level of well-being (Weinstein & Hodgins, 2019, p. 362). Therefore, autonomous teams are important for organisations in order to keep their employees content. From an economic perspective, autonomous teams are referred to as, 'teams with authority' (DeVaro, 2006). The term authority is used because the team has the right to select and decide about their own activities (DeVaro, 2006, p. 221). Moreover, the economic perspective on autonomous teams is strongly aimed at the realization of more efficiency in order to reduce costs (Batt, 2001). This efficiency is visible in the fact that autonomous teams are able to react quickly to certain circumstances (Patanakul, Chen & Lynn, 2012, p. 736). In non-autonomous teams, this advantage is disabled due to strict policies and procedures from central departments.

This research relates more to the economic perspective of autonomous teams, because Heineken wants its autonomous teams to be effective in order to minimize its supporting departments and to reduce costs. With autonomous teams, supporting departments are less necessary and team managers are not needed anymore (Appendix 1).

The choice for autonomous teams is always a trade-off between costs and benefits (DeVaro, 2006, p. 222). A downside of autonomous teams is the decentralization of control, which reduces the power of management. Although on the long term the costs for the management will reduce (Batt, 2001), the

implementation of autonomous teams is costly (Patanakul et al., 2012, p. 734). However, usually the advantages of autonomous teams, like more efficiency, increased labour productivity and quick response time, outweigh the disadvantages (DeVaro, 2006, p. 219).

2.2.2 Definition of autonomous teams

In the literature, there are several concepts related to autonomous teams, like; self-regulating (Van Amelsvoort & Scholtes, 1994), self-managed (DeVaro, 2006) and independent teams (Taggar, Hackew & Saha, 1999). However, according to DeVaro (2006, p. 221), the definitions of these concepts do not differ enormously from autonomous teams. Due to the fact that the differences between the concepts are real slim, and the fact that Heineken uses the term ‘autonomous teams’, this research sticks with this concept.

Although the definitions derive from variations of autonomous teams, like new product development teams and temporary teams, these were useful to understand autonomous teams in a general sense.

Autonomous teams can be defined as a group of employees who perform tasks independently of their management and take over certain duties of their supervisor (Stankiewicz, Lychmus, & Bortnowska, 2019, p. 135). These tasks are among others related to planning, budgeting, resource allocation and the distribution of tasks among the team members. Performing tasks independently means that the members of the team have the latitude to jointly decide how to perform certain tasks without a say of the manager (DeVaro, 2006, p. 221). Due to the fact that autonomous teams operate independently, it is important to share the workload among the team members. This requires coordination of the activities and means more responsibility for the completion of the tasks (Stankiewicz et al., 2019, p. 144; Taggar et al., 1999, p. 900). Moreover, in order to maintain independent, autonomous teams possess a certain amount of regulating capacity (Van Amelsvoort & Scholtes, 1994, p. 11). This means that the team is able to independently cope with unpredictable circumstances (Van Amelsvoort & Scholtes, 1994, p. 23). Kuipers, Van Amelsvoort and Kramer, (2018, p. 311) mention that an autonomous team should consist of more or less 8 to 12 team members.

Van Amelsvoort and Scholtes (1994, p. 11) define autonomous teams as ‘a fixed group of employees with a joint responsibility for the whole production process and for tasks aimed at process control, solving daily problems and improvement of methods, without consulting supervisors or supporting services.’ This definition summarizes the earlier described definitions and will therefore be used as the theoretical definition throughout this research.

Heineken defines autonomous teams as a group of employees (around 10 employees) with a high level of self-reliance (“*zelfredzaamheid*”) and independence who do not need supervision for the execution of their daily operational tasks (Appendix 1). In this definition, the term self-reliance

(“*zelfredzaamheid*”) means the ability of the team to independently execute tasks and to solve encountered problems. With this definition in mind, the theoretical definition is in line with Heinekens definition.

2.2.3 Effective autonomous teams

The theoretical definition of the autonomous team of Van Amelsvoort and Scholtes (1994) consists of three important characteristics to make autonomous teams effective: fixed groups, joint responsibility and self-regulation. Fixed groups mean that team compositions do not change over time (Van Amelsvoort & Scholtes, 1994). Joint responsibility entails that the whole team is held accountable for their performance which means that the collective is more important than the individual (Van Amelsvoort & Scholtes, 1994, p. 11). Therefore, the team shares the consequences of their performance. This is an important factor because a team can achieve more than an individual. For example, by bundling individuals with different skills into one team, the independence of the team increases (Van Amelsvoort & Scholtes, 1994, p. 45).

Self-regulation entails that the team has sufficient capabilities to coordinate and improve the processes and to cope with unpredictable circumstances (Van Amelsvoort & Scholtes, 1994, p. 11). These capabilities will be called regulation capacity. This increases the independence of the group because no more managers or supervisors are needed to solve the encountered problems. This also allows employees to improve processes when these are inefficient (Van Amelsvoort & Scholtes, 1994, p. 50). Regulating capacity can be divided into three levels: operational regulating capacity, regulating by design and strategic regulating capacity. Operational regulating capacity refers to dealing with disturbances which affect the transformation process directly (Achterbergh & Vriens, 2010, p. 13). For example, when a machine at the line breaks down. Regulation by design refers to selecting and implementing measures to ensure the required Division of Work, HR and technology are available for realizing the production process and its operational regulation (Achterbergh & Vriens, 2010, p. 14). Strategic regulating capacity refers to setting goals for the transformation process (Achterbergh & Vriens, 2010, p. 13). The more regulating capacity the teams have, the more the teams can perform autonomously (Van Amelsvoort & Scholtes, 1994, p. 25).

To realize joint responsibility and regulating capacity, the organizational infrastructure needs to be well designed. In section 2.4, nine design principles of Van Amelsvoort & Scholtes (1994) are described, which show the relation between the two characteristics and the organizational infrastructure.

To have successful autonomous teams, the interfaces and dependencies should be minimized for the macro- meso-level of an organization to avoid a ‘merry-go-round dilemma’ for the teams. More can be found in the next section.

2.2.4 Structure of an organization and the merry-go-round dilemma

To better understand the structure of an organization, an organization can be divided using the levels of macro, meso, and micro. The macro-level refers to the coalition of activities within larger entities which are completely responsible for a product or a range of products (Kuipers, Van Amelsvoort and Kramer, 2018, p. 40). Macro entities can, for example, be based on product-market combinations or product characteristics (Kuipers et al., 2018, p. 278). Ideally, macro entities should be created when the levels of variety, unpredictability and size of the organisation are high (Kuipers et al., 2018, p. 276). By doing so, the production processes can operate independently of each other. By default, the teams are more autonomous since they are not affected by the other production processes. Therefore, it becomes possible to implement autonomous teams.

The meso-level refers to the coalition of activities between teams and the synchronization between the teams in the entity (Kuipers, Van Amelsvoort and Kramer, 2018, p. 40). Ideally, the teams have a group size between the six and twelve persons, but it should not exceed 20 persons. When these teams are independent, they can perform preparing and supporting tasks which can result in a higher level of productivity (Kuipers et al., 2018, p. 280). Examples of preparing tasks are among others; production planning, product design and purchases concerning materials (Kuipers et al., 2018, p. 162). Supporting tasks are activities like maintenance, financial administration and HRM. The teams can be related to each other in time or during a process. Since the Packaging department has production lines which perform 24 hours every day, the expectation is that the meso-level is structured by shift work over time model. This means that when a shift is over, a new team continues the work of the previous shift. The ideal situation of this model can be found in the Durham case (Trist & Bamforth, 1951) which demonstrated that teams related to each other over time, are more effective when they are allround, instead of dependent and work specifically, which makes the teams autonomous. In this context, allround means that teams are able to perform the same activities of the previous team, which makes the team autonomous since it can cope with problems which are related to the previous team.

The micro-level refers to the coalition of activities within teams and the connection between interfaces. These activities need to be complete and employees can be held responsible for their activities (Kuipers et al., 2018, p. 309). At the micro-level, the teams should have sufficient regulating capacity to make decisions, to produce complete products and to achieve the goals of the teams (Kuipers et al., 2018, p. 313). Teams which are working at assembly lines are commonly structured according to the *Equality Model* (Gelijkheidsmodel) because it concerns relatively easy tasks. The *Equality Model* entails that every team member is able to perform all activities of the team (Kuipers et al., 2018, p. 322). This model can contribute to the flexibility in the team.

Since Heineken has mentioned to gain more insight in the current situation at the micro-level, and the problems described in section 1.1 are related to the micro-level, this research focuses on the situation

on the micro-level. However, it is necessary to determine whether the relations in the macro- and meso-level do not form a problem at the micro-level. These relations can occur in a merry-go-round dilemma (Lekkerkerk, 2017). This dilemma refers to the frequently made mistake when autonomous teams are developed and implemented. The mistake is that an organization may state that it has autonomous teams, while in reality, the autonomous teams cannot determine their own direction despite their effort to change the direction of the organization (Lekkerkerk, 2017). This description will be seen as the theoretical definition of this research. This dilemma relates to the concept of regulating capacity since the autonomous teams do not have enough regulating capacity to ‘escape’ from the direction of the organization. Moreover, the dilemma demonstrates that without synchronization with other teams or departments, the autonomous team is not able to achieve the desired effect. Ideally, the interfaces and dependencies of the macro- and meso-level should be minimized. Therefore, the macro- and meso-level will be generally examined to determine how these levels are designed at the Packaging department. The outcome of this examination can determine whether there is a merry-go-round dilemma that needs to be solved. This is important because a team can ‘steer’ itself, but due to the presence of too many interfaces, the team will always go the same direction. If the teams at Area 1 of the Packaging department of Heineken Den Bosch are facing a merry-go-round dilemma, some recommendations can be made to solve this dilemma. When this dilemma occurs, it is still useful to measure the micro-level to determine whether the teams can function autonomously when the problems at the macro- and meso-level are solved.

2.3 Organizational infrastructure; Division of Work and Human Resources of effective autonomous teams

2.3.1 Organizational infrastructure

The idea of an organizational infrastructure derives from the macroeconomic growth theory which concerns the economic developments in countries, with a special focus on the drivers for growth (Lev, 2002). This theory considers managerial processes, organizational blueprints and control systems as the drivers for growth. According to Lev (2002, p. 33), these drivers belong to the organizational infrastructure and contribute to, if designed appropriately, the productivity of the organization. Lev’s theory (2002, p. 34) gave a renewed insight in the concept of organizational infrastructures, by mentioning tangible (technology) and intangible (Division of Work and HR) aspects of organizational infrastructure. Moreover, an organizational infrastructure was now seen as an ‘enabler’ for certain processes, instead of an asset of the organization. This means that an infrastructure with the right design can enable an organization to function better.

An organizational infrastructure provides its employees with certain ‘coordinating mechanisms’ which are needed for the processes of communication, learning and action between the employees (Nicholls, 2003, p. 811). Nicholls (2003, p. 882) defines the organizational infrastructure as ‘a set of informal

and formal networks of people that link and coordinate different social movements within organizations.’ Croteau, Solomon, Raymond and Bergeron (2001, p. 1) define an organizational infrastructure as the set of choices of particular configurations in order to realize the organizations chosen market position.

Achterbergh and Vriens (2019, p. 27) provide a broader definition and define the infrastructure as a system which consists of an organizational structure (Division of Work), technology and human resources in order to perform the organizational activities. The organizational structure (Division of Work) refers to how the tasks within the organization (or teams) are defined and related (Achterbergh & Vriens, 2019, p. 27). The technological aspect refers to all but the human resources in organizations, this includes ICT’s as well as tools or furniture (Achterbergh & Vriens, 2019, p. 26). The latter aspect, Human Resources, refers to knowledgeable, skillful and motivated personnel. This aspect is similar with the definition of Nicholls (2003). The Division of Work, HR and technology can be seen as conditions for autonomous teams.

In this research the definition of Achterbergh and Vriens (2019) will be leading. The reason for this choice is because their definition covers most of the other definitions. Furthermore, their definition is the most concrete and most clear. This means that an infrastructure is defined as; a system which consists of technology, human resources (HR) and an organizational structure (Division of Work) in order to enable organizational activities. As mentioned before, the technology is excluded from this research. In the following sections the HR and Division of Work will be further explained.

2.3.2 Division of Work of effective autonomous teams

The Division of Work is defined by Achterbergh and Vriens (2019, p. 27) as how the tasks within an organization are defined and related to each other. This definition applies for organizations as well as for teams. As it becomes clear, the definition consists of two elements; a ‘definition of tasks’ and an ‘interrelation of tasks.’ These tasks describe what an organizational unit (a team or a person) needs to do and can refer to perform certain actions, but also to reach certain targets (Achterbergh & Vriens, 2019, p. 26). In the ideal situation, all the tasks within a team are defined and related with each other in a way that if every team member performs their task adequately, the goals of the team are realized.

Van Amelsvoort and Scholtes (1994, p. 21) mention three criteria which need to be taken into account with the ‘definition of tasks.’ The first criteria is that the task needs to be complete which refers to the ability of the team to complete a whole product. This is important because the management can only give its teams autonomy if it is able to see the performance of the team. The second criteria is delineation which means that the tasks need to be defined in the sense of clear limitations. The third criteria refers to measurability of the tasks. This is for evaluation purposes in order to determine whether the task is fulfilled or not. Therefore, ‘the definition of tasks’ can be defined as; the description

of an activity in terms of completeness, delineation and measurability. If the tasks are complete, delineated and measurable, it becomes possible to determine what kind of regulating capacity needs to be assigned to the tasks.

‘Interrelation of tasks’ is related to the mutual dependency and complementarities of tasks (Van Amelsvoort and Scholtes, 1994, p. 27). Mutual dependency means that tasks rely on other tasks in order to be fulfilled. A certain level of mutual dependency is necessary because it means that team members need each other to fulfil a task, which contributes to the functioning as a team. This makes the tasks complementair to each other, since an individual task may not be worth much without the other tasks. The tasks have to contribute to each other, but not fully dependent on each other, which means that the members of the group can perform their tasks on their own. Mutual dependency and complementarities of tasks is seen as a requirement for autonomous teams (Kuipers, Van Amelsvoort and Kramer, 2018, p. 311).

When these aspects are part of the Division of Work, then it has a positive effect on the effectiveness of autonomous teams, which will be explained in section 2.4.

2.3.3 Human Resources of effective autonomous teams

Organizations more often recognize the value of effective autonomous teams, because it can lead to performance improvement (Salas, Kosarzycki, Tannenbaum & Carnegie, 2005). The HR part of an infrastructure refers to all the employees in the organization. Achterbergh and Vriens (2019, p. 27) define Human Resource (HR) as knowledgeable, skillful and motivated personnel. Ideally, this personnel is able to use the tools and technologies in order to function well (Achterbergh & Vriens, 2019, p. 259). Moreover, according to the authors, in the desired situation the personnel would do several efforts to develop their skills, knowledge and motivation. This is in line with what Heineken perceives as the desired HR, which is to have employees with the right skills and knowledge about the tasks (Appendix 1).

In order to create knowledgeable, skillful and motivated personnel to work in autonomous teams, certain HR practices are needed. Salas et al. (2005) have formulated a set of best HR practices for teams. Although Salas et al. (2005) mention general best HR practices, these HR practices are applicable for autonomous as non-autonomous teams. These HR practices include: recruitment & hiring, training, compensation, performance management, team leaders and climate & culture (Salas et al., 2005, p. 136).

The reason for adding HR practices is because it is difficult to give recommendations about knowledgeable, skillful and motivated personnel. The researcher could have chosen multiple other reasons why employees get knowledge, skills or motivation. However, the HR practices of Salas et al.,

(2005) can be adjusted by the organization/teams and are proven to have an influence on the knowledge, skills and motivation of employees. When it is stated that employees do not have the knowledge, skills or motivation to work in autonomous teams, recommendations on the HR practices can be made to have a useful research for Heineken.

Recruitment and hiring refers to seeking personnel with a collective orientation and to involve team members during the selection process. This is important because an employee who is individualistic does not contribute to the collective goal of the team (Salas et al., 2005, p. 138). Recruiting and hiring is found to have a positive effect on HR since it is seen as a useful method to acquire people with the appropriate characteristics, like skills, knowledge and motivation (Branine, 2008, p. 499). Training refers to enhancing the skills and knowledge of the members of the autonomous team. A practice is, for example, to set up courses which are focussed on individual teamwork-related competences. Besides the enhancement of personal knowledge and skills, training includes the enhancement of the team spirit by doing team building (Salas et al., 2005, p. 137). Compensation refers to rewards for teamwork behaviours and outcomes. These compensations can also be aimed at the individual, for example for performing teamwork-related skills (Salas et al., 2005, p. 140). The study of Johnson and NG (2016) demonstrated that monetary compensations enhance the motivation and commitment of employees. Other recent works support these findings (see for example: Candradewi & Dewi, 2019; Beede & Ogbu, 2017). Performance management refers to the improvement of team performances via the use of feedback tools and input from team members in improving the performances of a team (Salas et al., 2005, p. 137). A common practice in performance management is the use of feedback tools, like 360-degree feedback. Research points out that performance management can increase the skills and knowledge of employees, see for example the study of Sahoo and Mishra (2012, p. 4). Performance management is even seen as a tool to extend a company's knowledge base (Yeoh, Richards & Wang, 2014, p. 106). Since there are no team leaders in the autonomous of Heineken, the responsibility for developing the team lies within every team member. Therefore, every team member is considered to be a team leader. The team members are accountable and responsible for their tasks. Moreover, the team members dare to address the feedback to each other. Team leaders can result in employees with knowledge, skills and motivation, because of the accountability people have (see for example; Lerner & Tetlock, 1999; Druckman, 2012), and by giving good feedback to each other which results in knowledge and skills on how to perform certain tasks (Day, Iles & Griffiths, 2009). Finally, climate & culture refer to a shared idea that teamwork is recognized and valued. An important shared vision within this context is that collaborators are valued more than individuals (Salas et al., 2005, p. 137). Research demonstrates that shared vision contributes to the motivation of employees and can increase the level of knowledge since it gives a direction which helps to determine which types of knowledge is needed (Hoe, 2007, p. 13).

Ideally, the preparing and supporting activities are assigned to the teams, like described in section 2.2.4. This means that in the ideal situation, the HR practices are done by the teams themselves. In this research, the effectiveness of the HR practices on the people, concerning the knowledge, skills and motivation, is taken as a given and will not be researched at the teams of Area 1 of the Packaging department of Heineken Den Bosch, because this relation is not the purpose of this research.

As it becomes clear, in order to amplify the motivation, set of skills or knowledge of the employees, the HR practices need to be adjusted. After all, it is hard to make recommendations about changing the people. This depends on the HR practices, which can be adjusted by the organization/teams. Therefore, the definitions of Achterbergh and Vriens (2019) and Salas et al. (2005) will be combined, which results in the following definition: 'HR are knowledgeable, skillful and motivated personnel who are formed by recruitment & hiring practices, training practices, compensation systems, performance management, team leaders and the climate & culture.' This definition will be used for the remainder of this research. When the HR practices are according to the ideal situation, described above, it results in skillful, motivated and knowledgeable people which has a positive effect on the effectiveness of autonomous teams. This will be explained in section 2.4.

2.4 The relation between Effective Autonomous Teams and its design of HR and Division of Work

In order to describe the relation between autonomous teams and its Division of Work and HR, the design principles of Van Amelsvoort and Scholtes (1994, p. 40) will be used, which make autonomous teams effective. These design principles are still considered as relevant as Kuipers, Van Amelsvoort and Kramer (2018, p. 310-311) point out. Although the most recent version contains 11 principles, the principles correspond with the initial design principles of Van Amelsvoort and Scholtes (1994). Since Kuipers, Van Amelsvoort and Kramer (2018) do not elaborate on the principles, the version of Van Amelsvoort and Scholtes (1994) will be used for the remainder of this research. Each design principle will be explained and related to the Division of Work and HR. In each principle, Van Amelsvoort and Scholtes (1994) mentioned aspects which can be related to the Division of Work and the HR. Therefore, the relation between Division of Work and effective autonomous teams can be made, according to Van Amelsvoort and Scholtes (1994). Moreover, the relation between HR according to Salas et al., (2005) and effective autonomous teams can be made. All the design principles concerning the technology, all resources except HR, will not be discussed, since this is excluded from this research.

Principle 1: the task of the group needs to be complete, delineated, measurable and a result of interrelated activities (Van Amelsvoort & Scholtes, 1994, p. 21)

This principle relates to the way operational processes are structured and related to each other.

As it becomes clear, this principle concerns the definition of tasks because it aims at the

formulation of complete, defined and measurable tasks. According to the theoretical definition of autonomous teams, it concerns performing tasks independently from the management in order to contribute to the overall goal of the team. When these aspects are clearly defined, it becomes possible to perform tasks independently from the management which contributes to the completion of the overall goal of the team. When the tasks are considered as complete, delineated and measurable, it becomes possible to determine what kind of regulating capacity needs to be assigned to the teams and in the task description. This can be operational regulating capacity, regulating by design and strategic regulating capacity. This relates to the theoretical definition of Achterbergh and Vriens (2019) because it concerns the definitions of tasks. Therefore, the Division of Work needs to ensure that the tasks of the group are complete, defined and measurable in order to enable autonomous teams to be effective.

Principle 2: the group needs to have sufficient regulating capacity and authorities to execute the task as independent as possible (Van Amelsvoort & Scholtes, 1994, p. 23)

Regulating capacity refers to the ability of the group to cope with unpredictable circumstances which means that the group needs to be able to plan and improve the production process and solve daily problems. The regulating capacities are related to several aspects of the production process (Van Amelsvoort & Scholtes, 1994, p. 24). Although the regulating capacities also include technological aspects, these will not be taken into account in this research.

The second principle relates to the Division of Work as well as to the HR. Via the Division of Work, the regulating capacity needs to be distributed among the team members. Therefore, what type of regulating capacity needs to be defined in the tasks. This relates to the theoretical definition of Achterbergh and Vriens (2019) because it concerns the definitions of tasks, like described in principle 1.

Furthermore, the team members need to be able to use the regulating capacity, which relates to the HR. The relevant aspects are personnel, education and process control which corresponds with the HR practices of recruitment & hiring, training, performance management and team leaders. Recruitment & hiring refers to the selection of personnel with the required competences, like self-reliance, which enables the team to have sufficient regulating capacity, which enables the teams to cope with unpredictable circumstances. Training relates to education, since training can enhance the knowledge and skills of team members which contributes to the regulating capacity of the autonomous team and the ability to take joint responsibility. Performance management relates to process control because it evaluates, via the input from team members, whether the whole team has the required performances or has to improve the skills and knowledge of the team members (Salas et al., 2005, p. 137). Moreover,

HR needs to have team leaders. Team leaders are responsible for their tasks. Autonomous teams will get regulation capacity if the team leaders can be held accountable for their tasks. Moreover, because of the accountability, the employees will get motivated to take joint responsibility. Via these HR practices, the autonomous teams obtain more knowledge, skills and motivation, which results in being capable to have regulating capacity to cope with unpredictable circumstances. If the team members can regulate the Division of Work, HR and technology, they have regulating capacity by design. If the team members can set goals, they have strategic regulating capacity.

Principle 3: the tasks of the members of the group are somehow mutual dependence in order to be complementary to each other (Van Amelsvoort & Scholtes, 1994, p. 27)

This is important because mutual dependency between the tasks within the group contributes to the functioning as a team because members can help each other. However, this dependency should not be too high to avoid that tasks cannot be performed alone. If all tasks can be fulfilled, it contributes to the complementarity since the tasks together can fulfil the goal of the team. This principle relates to the dimension interrelation of tasks of the Division of Work because it concerns how the tasks in the teams are related to each other (Achterbergh & Vriens, 2019). According to the theoretical definition of effective autonomous teams, teams perform tasks in order to fulfil the goal of the team. The interrelation of tasks enables members to help and support each other in order to fulfil each task. Moreover, the interrelation of tasks contributes to the joint responsibility. Since people depend on each other, they can all be held responsible for the output of the autonomous team, which creates a joint responsibility. Therefore, the Division of Work needs to ensure that the tasks of the autonomous teams are somewhat mutual dependent in order to become more effective.

Principle 4: the size of the group needs to be appropriate in order to have a significant contribution and to be able to make quick decisions (Van Amelsvoort & Scholtes, 1994, p. 28)

The authors mention that the ideal group size is between the eight and twelve persons. The group needs to be small enough to make good decisions and to have an insight in the decision-making process. Furthermore, the groups need to be large enough to execute a complete process, to have a significant contribution and to have sufficient personal skills. This principle relates to the Division of Work because the tasks determine the size of the group (Achterbergh & Vriens, 2019). When a group task is more complex, the authors recommend to use smaller groups (6-8 persons), while less complex tasks can have larger groups (14-18 persons). According to section 2.2.1, autonomous teams should be between ten and fifteen team members. This is similar to Van Amelsvoort and Scholtes (1994) suggestion. However, the

Division of Work determines the complexity of the tasks which influences the size of the group. With this knowledge, the Division of Work can assign the right amount of people to a certain autonomous group in order to perform effectively. Therefore, the Division of Work needs to ensure the right amount of people when it formulates tasks with a certain degree of complexity.

Principle 5: the members of the group can fulfil several tasks within the group and internal status differences cannot disrupt a flexible Division of Work and the internal mobility (Van Amelsvoort & Scholtes, 1994, p. 29)

This is an important principle because when employees are able to fulfil more than one task, it reduces the vulnerability of the group. Moreover, it makes it possible to take over work from group members. Whether a group member is able to fulfil several tasks, depends on how well the tasks are defined. Therefore, it should be defined in the task description that the group members need to be able to fulfil several tasks. If the task is defined completely it contributes to the mutual dependency of the tasks. The team members become able to fulfil more tasks which makes them more independent within the group since the level of dependency decreases while remaining a certain level of dependency. The tasks within the group differ in terms of content and therefore also in terms of status. However, the status differences should be as low as possible to avoid the possibility of team members who act as a 'boss' (Van Amelsvoort & Scholtes, 1994, p. 30). If the status differences are low, it contributes to the joint responsibility of the team. This relates to the theoretical definition of Achterbergh and Vriens (2019) because it concerns the definitions of tasks. Therefore, the Division of Work needs to ensure that the tasks of the group are clearly defined in order to enable autonomous teams to be effective.

Taking over tasks can also be stimulated via a shared vision within autonomous teams which values collaboration (Salas et al., 2005). Via a shared vision, the team members obtain a certain idea of how to execute a task. This also contributes to the motivation of each team member (Hoe, 2007). Since every team member is aware of each task, it becomes possible that team members take over each other's task. The HR practice of recruitment & hiring is necessary to select personnel who are willing to take over tasks of others. This HR practice needs to seek personnel with a collective orientation and a willingness to work closely with others (Salas et al., 2005, p. 138). The willingness of team members contributes to the joint responsibility of tasks which improves the effectiveness of autonomous teams. Therefore, HR needs to focus on climate & culture and recruitment & hiring, since they have an effect on the joint responsibility of tasks which contributes to the effectiveness of autonomous teams.

Principle 6: within the group there needs to be a spokesperson (Van Amelsvoort & Scholtes, 1994, p. 35)

The spokesperson needs to coordinate the tasks within the group, but is not an active member of the group. This means that he only supports the team with the coordination of the tasks, which can be seen as operational regulating capacity. The authors suggest, in order to avoid the situation that the team member becomes too bossy, to rotate the function as a spokesperson. This principle relates to the Division of Work because it refers to the coordination of tasks and how these tasks are related to each other (Achterbergh & Vriens, 2019). According to the theoretical definition of effective autonomous teams, employees have a certain responsibility. The function of spokesperson is a certain responsibility. Therefore, the Division of Work needs to ensure that the employees in autonomous teams have responsibilities to fulfil the task of the team.

Principle 7 and 8 are about having an own space, production tools, information and control systems. These refer to the technology and are therefore not taken into account within this research. As described before (1.1), Heineken provides their autonomous teams with all the tools and resources needed in order to fulfil the task.

Principle 9: the reward system should suit the 'teamwork' (Van Amelsvoort & Scholtes, 1994, p. 38)

The reward system should be designed in order to motivate and challenge the members of the group. This can be an incentive for members to develop themselves which is also beneficial for the organization because it can contribute to the completion of tasks (Van Amelsvoort & Scholtes, 1994, p. 38). Moreover, it can contribute to joint responsibility for tasks since the team as a whole needs to perform well in order to receive a reward. A reward system can be seen as a HR practice in order to train the employees of the organization. This means that the HR practice of compensation should be based on the teamwork behaviours and outcomes (Salas et al., 2005). Therefore this principle relates to the HR because it aims at the capacities of the employees. Therefore, there should be a reward system, in order to make autonomous teams more effective. Table 1 gives an overview of the nine principles and to which organizational infrastructural part they relate.

	Principle 1	Principle 2	Principle 3	Principle 4	Principle 5	Principle 6	Principle 7	Principle 8	Principle 9
Division of Work	x	x	x	x	x	x			
HR		x			x				x
Technology							x	x	

Table 1: Principles and organizational infrastructure

According to the explanations of the principles, it can be stated that Division of Work and HR can be seen as conditions for autonomous teams. When these conditions are designed in the right way, it makes autonomous teams effective. Heineken confirms this, which means that this line of reasoning also applies for Heineken (Appendix 1).

2.5 Conceptual model

The dependent variable of this research is ‘effective autonomous teams.’ As described in the previous section, the theoretical expectation is that autonomous teams at Area 1 of the Packaging department of Den Bosch are influenced by the Division of Work and the HR of the autonomous teams. This means that the Division of Work and the HR are the independent variables. The relations are expected to be positive because, when the HR of effective autonomous teams consist of people who are knowledgeable, skillful and motivated by the HR practices recruitment & hiring, training, compensation, performance management, team leaders and climate & culture, the autonomous teams will be effective. Moreover when the Division of Work of effective autonomous teams consist of a clear definition of tasks and interrelation of tasks, the autonomous teams will be effective. As a result, the teams have joint responsibility for tasks, fixed groups and regulating capacity which makes the autonomous teams effective.

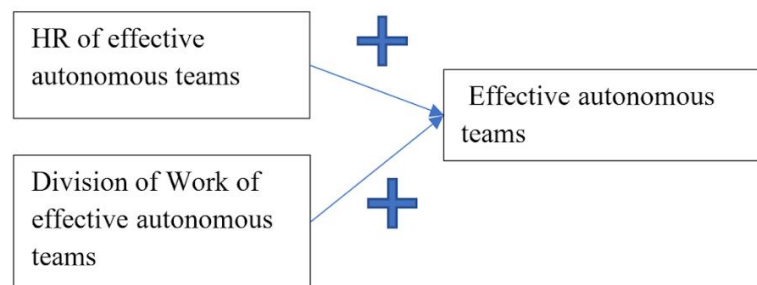


Figure 1: Conceptual model

The conceptual model is shown in figure 1.

Chapter 3: Methodology

3.1 Introduction

This chapter forms the methodology of this research. This means that the research strategy, the case description and the data collection methods will be discussed. Furthermore, the variables will be operationalized. Thereafter, the analysis method will be discussed. Finally, the quality of the research will be examined and the chapter ends with a discussion of the research ethics.

3.2 Research strategy

A qualitative diagnostic research has been done, focused on a single case. The case was the teams of Area 1 at the Packaging department of Heineken Den Bosch. The reason for qualitative research was due to the relatively abstract concepts. A qualitative method provides more room for the researcher, as well as the respondent, to clarify certain questions or answers (Bleijenbergh, 2015, p. 77-78). This enables the respondent to better respond to the question, while it ensures the researcher of the right data. Moreover, by using qualitative research, the *why's* of certain phenomena can be answered more easily than using a quantitative method (Symon & Cassell, 2012). In this research, the main goal was to get clear *why* the autonomous teams were ineffective, by comparing the desired situation with the actual situation. To get the desired situation, a theoretical framework was described in Chapter 2. Thereafter, to research the actual situation, this theoretical framework was operationalized. Because of researching an object by a theoretical framework, this is called a deductive study (Bleijenbergh, 2015). This research asked for a deductive approach since a gap-analysis was performed. In order to perform the gap-analysis, a desired situation is needed. The existing theoretical framework on autonomous teams and organizational infrastructures, provided this desired situation.

As mentioned before, a single case-study at the teams at Area 1 of the Packaging department of Heineken Den Bosch was performed. According to Yin (2013, p. 16), performing a case-study is appropriate when it investigates a phenomenon in depth and within its context. A single case-study is aimed at only one case. In this research the ineffective autonomous teams form the phenomenon, while the teams of Area 1 at the Packaging department of Heineken Den Bosch forms the context.

3.3 Case description

Heineken is a Dutch beer brewery which was founded in 1873 by Gerard Adriaan Heineken (Heineken Nederland, n.d.). In 1933 Heineken entered the international market and sold its beer in America. With the acquisition of among others Amstel, FEMSA and Asia Pacific Breweries, Heineken gained a strong market position. Nowadays, Heineken produces more than beers. Heineken also produces sodas which made the company a significant player in the soda branche.

As described earlier, this research was conducted at the teams of Area 1 of the Packaging department of Heineken Den Bosch. The Heineken brewery in Den Bosch has won the price for Innovation Brewery. Due to this success, Heineken wanted the Packaging department as an example for the other breweries. Eventually, one Area was assigned as a pilot Area. This Area is focused on filling cans with beer and packaging the cans in for example six-packs for national and international customers. This Area consists of 30 operators who are divided among teams, and one Linelead.

3.4 Data collection

To research the autonomous teams and its Division of Work and HR at Area 1 of the Packaging department of Heineken Den Bosch, semi-structured interviews were conducted. By using a semi-structured interview, the questions are formulated already which helps the researcher to ask the same questions to every respondent (Bleijenbergh, 2015). This also gave the researcher the chance to ask follow-up questions to get a clearer view of the phenomena. Six operators from different teams, two Lineleads and two Area Managers were interviewed. With these respondents, the expectation was to get a broad insight of the autonomous teams and its Division of Work and HR. The expectation was that the operators and managers could differ in view. The operators could give an

Interviewee	Job position	Duration of the interview
Interviewee 1 - Ricardo	Linelead	45 minutes
Interviewee 2 - Gerard	Area Manager	44 minutes
Interviewee 3 - Ron	Process Control Operator (PCO)	33 minutes
Interviewee 4 - Rik	Operator	44 minutes
Interviewee 5 - Olaf	Operator	30 minutes
Interviewee 6 - Erik	Operator	44 minutes
Interviewee 7 - Piet	Process Control Operator (PCO)	62 minutes
Interviewee 8 - Joep	Operator	52 minutes
Interviewee 9 - Remco	Area Manager	45 minutes
Interviewee 10 - Stefan	Linelead	42 minutes

Table 1. Interviewees function and duration, fake names

inside perspective of the autonomous teams, while the managers were able to give an outside perspective of the autonomous teams. This outside perspective was also relevant for this research because it could, for example, determine whether the output of the autonomous teams were visible for the management. Furthermore, the expectation was that these managers are also influenced by the implementation of the autonomous teams, because the autonomous teams are now responsible for some regulation activities which used to belong to the managers. The criteria was that only managers and operators who are influenced by the implementation of autonomous teams, will be interviewed. Two Area Managers were interviewed because both Area Managers are involved in the pilot. One Area Manager is from Area 1 and the other Area Manager is from Area 3, who also wants to experiment with autonomous teams in his Area. The interview protocol and interview format can be found in Appendix 3.

During this research, a virus disrupted the social life of The Netherlands. A lot of businesses were closed and visiting companies was not always allowed. Luckily, the researcher managed to have face to face interviews at the brewery or at another place.

3.5 Operationalization

This section gives the operationalizations of all related concepts. The complete explanations and all related items can be found in Appendix 2.

3.5.1 Describing the production structure and possible merry-go-round dilemma

To determine if there is a merry-go-round dilemma, it was necessary to describe the production structure of the Packaging department of Heineken Den Bosch. The production structure was described according to one manager. In this interview, a Linelead was asked how the macro- and meso-level is structured at the Packaging department. In the interviews with the respondents, some questions were asked about the relations and interfaces with other departments or teams on macro- and meso-level. Via this way, it was possible to determine whether there is a merry-go-round dilemma. The operational definition of merry-go-round dilemmas was based on the theoretical definition. Therefore, the operational definition was: the mistake of Heineken to state that it has autonomous teams, while in reality the autonomous teams cannot determine their own direction despite their effort to change the direction of the teams due to dependencies at the macro- and meso-level. The dimensions of merry-go-round dilemma were: ‘(L) dependencies at the meso-level’ and ‘(M) dependencies at the macro-level.’ The indicator of dependencies at the meso-level was (L.1) relation between teams, and the indicator for the dependencies at the macro-level was (M.1) relation with other departments. An example for measuring meso-level: To what extent is your team capable to perform the same activities as the previous shift? This question could help to determine whether the teams are allround and dependent. The questions can be found in Appendix 2. The complete operationalization can be found in figure 2.

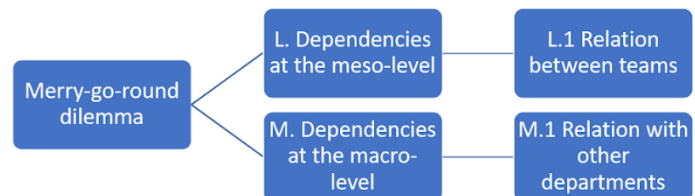


Figure 2: Operationalization of merry-go-round dilemma

3.5.2 Operationalization of effective autonomous teams

The operational definition of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: a fixed group of operators in the teams of Area 1 of the Packaging department of Heineken Den Bosch with a joint responsibility for the whole production process and for tasks aimed at process control, solving daily problems and improvement methods, without supporting services.

The operationalization of effective autonomous teams was based on the theory of Van Amelsvoort and Scholtes (1994).

The indicators of the dimensions were also based on the theory of Van Amelsvoort and Scholtes (1994). Therefore, the indicators for the dimension ‘(A) regulating capacity’ can be divided into; (A.1) ability to plan the production process without supervision, (A.2) ability to improve processes and work methods without supervision and (A.3) ability to solve daily problems without supervision (Van Amelsvoort and Scholtes, 1994). The indicator for the dimension ‘(B) joint responsibility for tasks and the production process’ was based on the theory of Van Amelsvoort and Scholtes (1994, p. 11). Therefore, the indicator for ‘shared responsibility’ was: (B.1) shared consequences. The indicator for ‘(C) fixed group’ was based on common sense: (C.1) circulation of teams. The complete operationalization can be found in figure 3.

An example of an item relating to A.2 was: To what extent has the team the possibility to improve the production process and work methods without asking permission of the supervisors or supporting departments? More explanations and all the related items can be found in Appendix 2.

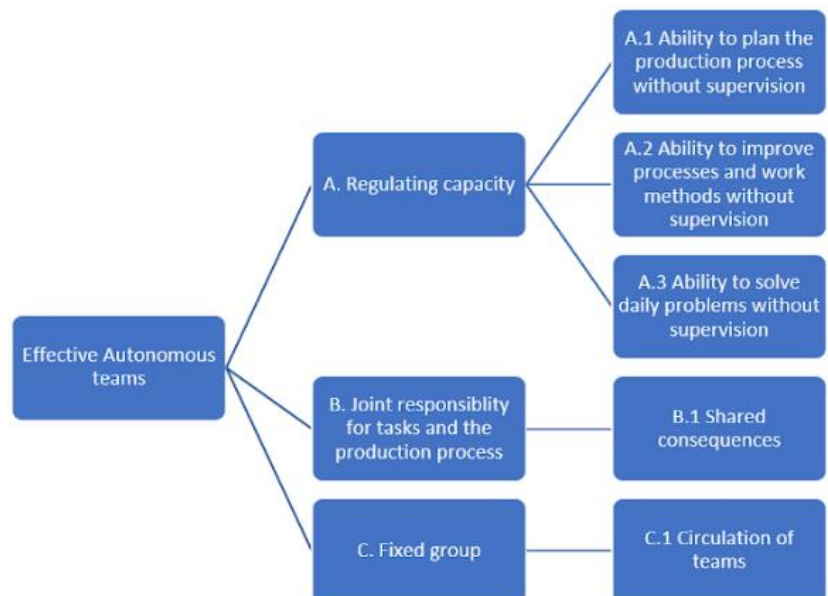


Figure 3: Operationalization effective autonomous teams

3.5.3 Operationalization of Division of Work of effective autonomous teams

The operational definition of Division of Work of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: how the tasks in the autonomous teams at Area 1 of the Packaging department of Heineken Den Bosch are defined and related to each other. The dimensions of the Division of Work of effective autonomous teams is based on the operational definition. Therefore, the dimension of Division of Work are; definition of tasks and interrelation of the tasks. In order to determine the indicators of the dimensions, the explanation of the relation between effective autonomous teams and its Division of Work can be helpful. These

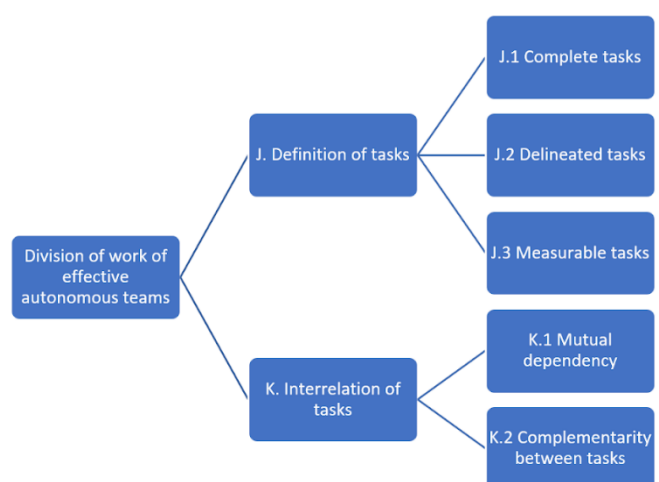


Figure 4: Operationalization of Division of Work of effective autonomous teams

explanation can be found in Appendix 2. The indicators for the dimension ‘(J) definition of tasks’ were based on the first design principle of Van Amelsvoort and Scholtes (1994). Therefore, the indicators are; (J.1) complete tasks, (J.2) delineated tasks and (J.3) measurable tasks. The indicator of the dimension ‘(K) interrelation of tasks’ is based on the third design principle of Van Amelsvoort and Scholtes (1994). Therefore, the indicators of this dimension are (K.1) mutual dependency and (K.2) complementarity between tasks. The complete operationalization can be found in figure 4. An example of an item relating to J.3 was: How can the tasks be evaluated? All related items can be found in Appendix 2.

3.5.4 Operationalization of HR of effective autonomous teams

The operational definition of Division of Work of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: Knowledgeable, skillful and motivated operators in the teams at Area 1 of the Packaging department of Heineken who are formed by recruitment & hiring practices of operators, training practices, compensation systems, performance management, team leaders and the climate & culture. The operationalization of HR is based on the operational definition. Therefore the dimensions of HR are; recruitment & hiring, training, compensation, performance management, team leaders and climate & culture, because the practices can be adjusted to have knowledgeable, skillful and motivated operators.

The indicators of the dimensions were based on the best HR practices for effective autonomous teams by Salas et al. (2005). The indicators for the dimension ‘(D) recruitment & hiring’ were: (D.1) seek personnel with a collective orientation and (D.2) involve team members during the selection process. The indicators for the dimension ‘(E) training’ were: (E.1) identify courses which are focussed on individual teamwork-related competences and (E.2) team training. The indicators for the dimension ‘(F) compensation’ were: (F.1) rewards for teamwork behaviours and outcomes (F.2) and rewards for performing teamwork-related skills. The indicators for the dimension ‘(G) performance management’ were: (G.1) use of feedback tools and (G.2) input in improving performances. The indicators for the dimension ‘(H) team leaders’ were: (H.1) giving feedback to each other and (H.2) accountability. The indicator for the dimension for ‘(I) climate & culture’ was: (I.1) shared vision. If the practices are designed in line with the desired situation, these will result in knowledgeable, skillful and motivated operators

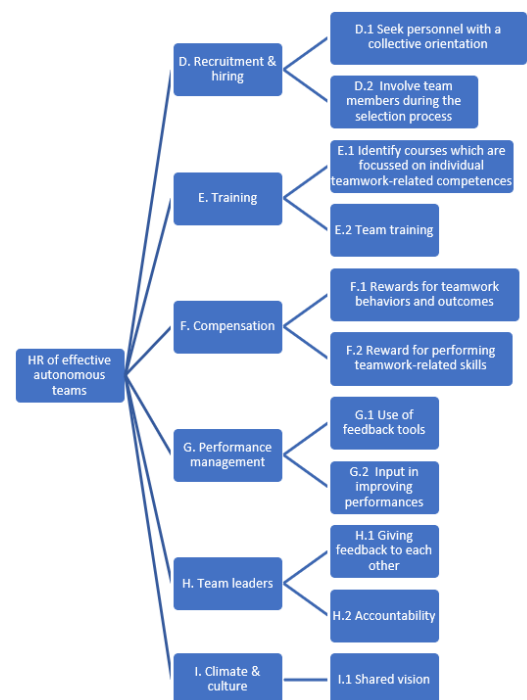


Figure 5: Operationalization of HR of effective autonomous teams

who are suitable to work in autonomous teams. The complete operationalization can be found in figure 5. An example of an item relating to H.1 was: How is feedback given to each other? All related items can be found in Appendix 2.

3.6 Data analysis

After the interviews were transcribed, the interviews were analysed using descriptive-thematic-pattern codes. A code scheme is used to structure the analysed texts in the 'descriptive code' with the corresponding theme. Each theme has a unique code, which can be found in figures 2, 3, 4 and 5, which were used in the transcribed interviews (Braun & Clarke, 2006). The themes can be found in the code scheme in 'thematic codes' in Appendix 4: Code schemes. In the transcribed interviews and documents, the number of the indicator which belongs to the phrase(s), are mentioned. This structured method helped the researcher to get a clear understanding of the differences and similarities between the answers of the respondents about a specific theme (Braun & Clarke, 2006, p. 37). As a result, the actual situation about the structure and merry-go-round dilemma, autonomous teams, its Division of Work and HR, are described in the next chapter which are the answers on sub questions 3 and 4. When sub questions 3 and 4 were answered, a comparison with the desired situation, described in Chapter 2, could be made which gives an answer on the last sub question. Finally, the research question of this research can be answered.

3.7 Quality criteria

Common quality criteria for qualitative research are: internal validity, reliability and usability (Bleijenbergh, 2015, p. 120). Internal validity refers to what extent the study research what it meant to research. Due to the use of semi-structured interviews, which enabled the researcher to ask follow-up questions for clarification purposes, a lot of specific and adequate data can be collected. Specific and adequate data refer to data that contributes to the research question and research goal. Moreover, an informal conversations with a Linelead is also included in the research. With the use of several levelled respondents, this research tried to reach a high level of internal validity.

Reliability refers to the reproducibility of the research. In order to create an acceptable level of reliability, all collected data were attached (if possible) in this research. This means that the coded verbatim transcripts of the interviews, the informal conversation with a Linelead and the coded documents are attached in the Appendices 1 and 5 until 14. Furthermore, the memos made during this research are attached in Appendix 17. This also contributed to the controllability and reproducibility of the research.

Furthermore, in an attempt to increase the usability of the research, Chapter five consists of recommendations for the teams at Area 1 of the Packaging department of Heineken Den Bosch about the Division of Work and the HR of the teams.

3.8 Research ethics

In order to do research in an ethical way, several decisions have been made. In order to protect the identity of the respondents in this research, fake names are used in this research. Also, additional information about the respondent (like age) was not shared or registered. Furthermore, the respondents were debriefed about the aims of the study and the interview. In order to create more transparency, each respondent was clearly told the duration of the interview and the concepts the interview entailed. Moreover, each respondent had the authority to decide to withdraw from this research. This in line with adhering to qualitative research ethics (Guillemin & Gillam, 2004, p. 264). The respondents could mention if they wanted to receive the results of this research. In order to keep the privacy of the respondents, the collected data was stored on my personal laptop, locked with a password. The information collected from respondents was not shared with anyone except the supervisors of this research. When this research was finished, the research was published, excluding the Appendices.

Chapter 4: Results

4.1 Introduction

This chapter starts with describing the structure of the Packaging department of Heineken Den Bosch. Furthermore, a description will be given about whether the teams at Area 1 of the Packaging department of Heineken Den Bosch are facing a merry-go-round dilemma. After that, the results for effective autonomous teams, the Division of Work of the teams and the HR of the teams will be described which are the answers on, respectively, Sub questions 3 and 4. Finally, the answer on Sub question 5 will be given, which is a comparison of the desired and actual situation of effective autonomous teams and its Division of Work and HR.

4.2 Structure of the Packaging department of Heineken Den Bosch and the merry-go-round dilemma

4.2.1 Structure of the Packaging department of Heineken Den Bosch

In short, the production structure of Heineken consists of a brewing department and a Packaging department with a headquarter which supports and manages the two departments (Appendix 5). According to Ricardo, the HR department and the Planning department are divided between the two departments (Appendix 5). Since this research aims at the teams of Area 1 of the Packaging department, only the production structure of the Packaging department will be discussed. The Packaging department consists of 1 Packaging Manager and 1 general Production Coordinator. The Production Coordinator supports the three Areas. Each area has 1 Area Manager, 1 Installation Manager and 1 Production Coordinator. Each area consists of 2 or more production lines. One of the areas is responsible for cans, while the others are responsible for the bottles which are divided in national and international production. Each production line has teams who fill the beer in bottles or

cans, package the beers and store the beers. The production load is divided in 5 shifts. Each shift has a Team leader. The organization chart of the Packaging department of Heineken Den Bosch can be found in Appendix 15.

Area 1 consists of two production lines which are focused on filling cans with beer, packaging the cans, storing the cans and transporting the cans. This area is experimenting with autonomous teams. The area has approximately 65 operators divided in 5 teams who work in shifts. This means that each shift has approximately 13 operators who are divided over the 2 production lines (Appendix 5). The teams are capable of working on both lines. Within the team, the operators should be able to take over each other's tasks, in order to be flexible. However, in reality, some operators, especially the new operators, do not have enough skills to perform several activities (Appendix 5). Therefore, the operators are mostly working on the same spot at the production line. In general, the team composition is the same (Appendices 6 until 14). The production process is as follows: The cans are empty when they arrive. Thereafter, the cans are stacked and placed on a conveyor belt by a depalletizer. This belt takes the cans to a 'filler' which fills the cans with beers and then to the pasteurizer (Appendix 5). If the cans are filled, the cans are coded, packaged (into crates or six-packs) and transported. One operator is responsible for the depalletizer and the supply and transport of packaging materials. One operator is responsible for the process of filling the cans, while two other operators are responsible for the packaging of the cans in the "*packaging street*". Furthermore, there are some Process Control Operators (PCO's) who have a coordination task. The number of PCO's per shift is determined by the amount of production lines. The PCO's can be seen as a spokesperson. The function of PCO is not rotated between the team members.

This short overview of the production structure at the Packaging department demonstrates that the size of the areas is sufficient to see each area as an entity at a macro-level. This is because the areas are responsible for their own range of products, which are cans, bottles for international markets and bottles for national markets (Appendix 5). Due to this distinction in macro entities, the variety of the production processes is reduced. Moreover, the production processes are more predictable since it is focused at a single range of products. This corresponds with the ideal situation described in section 2.2.4.

At the meso-level, it becomes clear that the sizes of the teams of Area 1 are in line with the ideal situation described in section 2.2.4, since the size is below 20 operators. "*(...) 13 men bruto and 11 netto (...)*" (Appendix 12). "*(...) we know that we need 10 people to function well on both lines and the depalletizer*" (Appendix 13). According to the theory in section 2.2.4, teams should have preparing and supporting activities. The planning and supporting activities are separated and allocated to separate departments at the macro-level (Appendix 5). The teams in Area 1, do not have the ability to plan the production process or to purchase materials (For example: Appendices 6 and 8). Ron confirms

that it can happen that there is insufficient material due to an error at the Planning department, which he called a “*tiny planning error*” (Appendix 7). Therefore, the teams have a lack of preparing activities. Besides, the teams at Area 1 can only perform a part of the supporting activities. The HRM activities are assigned to the HRM department and not to the teams and some to the managers (Appendix 5). However, the teams can fulfil maintenance work at the production line, but more complex problems are assigned to maintenance workers. Gerard (Appendix 6): “*We expect that the operators will do some extra work like maintenance work when a machine is not running.*” Although the PCO’s have to call a failure mode mechanic when the teams are facing hard issues, more issues can be solved by the teams themselves because Heineken is educating operators as beginner mechanics, called a T1’er (Appendix 7). Therefore, the teams do not meet the ideal situation yet, which was described in section 2.2.4.

At the micro-level, it becomes clear that Heineken strives to structure the team according to the *Equality Model* (Gelijkheidsmodel) since they state that the teams are structured with the intent to enable every operator to perform each task (For example; Appendices 7, 8, 9, 11 and 14). For example, Piet mentions that if they have enough operators available, some operators will be educated to learn another workplace at the production line (Appendix 11). The *Equality model* entails that every team member is able to perform all activities of the team as described in section 2.2.4. This model is commonly used at assembly lines since it concerns relatively easy tasks. However, in reality, the teams are more structured according to the *Overlap Model* (Overlapmodel). This model means that team members can perform a certain set of tasks, instead of all tasks. This means that a certain activity can be performed by several team members. For example, Erik describes that operators can control at least 2 workplaces of the production line (Appendix 10). Piet and Stefan support this statement by mentioning that in the job description is written that an operator has to control at least 2 workplaces (Appendices 11 and 14).

4.2.2 Are the teams of Area 1 facing a merry-go-round dilemma?

As described in section 2.2.4, it is useful to determine if the teams of Area 1 of the Packaging Department of Heineken are facing a merry-go-round dilemma. The merry-go-round dilemma was researched by looking at ‘(M) dependencies at the macro-level’ and ‘(L) dependencies at the meso-level.’ The dependencies at the macro-level were researched by identifying (M.1) relations with other departments. The dependencies at the meso-level were researched by identifying (L.1) the relation between teams.

At the macro-level can be concluded that the teams have a lot of interfaces with other departments for preparing and supporting activities. According to the respondents in Appendices 5 until 8 and 13, the teams have the strongest dependency with the Planning department. Like described in the previous section, the operators in the teams of Area 1 do not have the ability to plan the production process,

which can result in problems for the teams. For example, Rik mentioned that they had problems multiple times, because Planning had made a mistake with material to make the order (Appendix 8). Although the operators have a voice in the planning for next week, only a few changes can be made (Appendix 6). For example, according to Gerard and Erik, if the line has an order for packaging Heineken beer, then Amstel beer and then Heineken beer again, the operators mention that they can “(...)save time by rescheduling the sequence (...)” (Appendices 6 and 10). However, the Planning department makes the final decision. The statement of the Area Manager gives an explanation why the teams cannot plan the production process; “*All the materials that need to be planned, the teams cannot have that overview*” (Appendix 13). More information about planning can be found in the next section.

Also, the teams are partly dependent on the Human Resource department. For example, Erik (Appendix 10) mentions that HR should involve the teams during the selection process. The team members can only have a voice about the candidate when the candidate is already in the probation period (Appendices 5 until 13). Some respondents, like Rik, state that the teams should do the selection procedure, because the HR-department does not recruit on skills which are needed for autonomous teams like self-reliance and HR does not know what is going on on the shopfloor: “(...) *she does not know how things work down here on the shopfloor and works via procedures*” (Appendix 8). On other aspects, like training, the teams are less dependent on the HR-department. For example, Ron (Appendix 7) mentions that training is designed by managers.

Like described in the previous section, the teams are less dependent on maintenance work, because Heineken is educating operators of each shift as T1'er. However, when big problems occur, the PCO's has to call a failure mode mechanic.

The goals are determined by the managers and the headquarter (Appendix 5). The goals are “*The Key Performance Indicators for Safety, Standards, Quality and Performance*” (Appendix 5). However, the teams themselves have to ensure how they reach these goals.

When looking at the meso-level, the structure meets the ideal situation as described in section 2.2.3. All respondents state that each shift can perform the same activities (Appendices 6 until 13). For example: Ron (Appendix 7) mentions that the teams are able to perform the same activities as the previous teams, “*All teams are equal*”, but some teams have more experience than other teams (For example: Appendices 9 and 11). This makes the teams allround and independent of other teams. However, there is a certain dependency between the teams regarding the Operational Performance Indicators (OPI's). This is an indicator for the amount of produced products per shift, which starts 45 minutes before the actual shift starts. Joep mentions that teams, before his own team starts a shift, stop their activities 45 minutes before their shifts ends, which causes the next shift to “*lose 20 minutes,*

almost every day” (Appendix 12). As Joep continues; *“it looks like the previous teams do not care about the last 45 minutes since it (the OPI number) is for the next team”*. Thereafter, Joep confirms that each team only values their own performance and cares less about how other teams perform. Piet is neither in favour of the OPI’s since it can cause a competition between the teams (Appendix 11). This is supported by Remco who even mentions getting rid of shift records (Appendix 13). Therefore, the performance of the teams, in terms of the OPI, is dependent on the previous teams.

As a result, Area 1 of the Packaging department of Heineken is facing a merry-go-round dilemma at the macro-level. The teams cannot perform the preparing and supporting activities by themselves because these activities are (partly) assigned to other departments. Therefore, the teams cannot determine their own direction. Although the PCO’s and operators have a voice in, for example, the planning for the next week, the Planning department makes the ultimate decision. The merry-go-round dilemma does not occur at the meso-level, since the teams are able to operate independently on the other teams. However, the performance of the teams is dependent on the previous shifts, as a result of the OPI measurement.

Piet mentions that the autonomous teams are structured in the wrong way, since the teams are designed according to the top-down principle. Piet explains: *“And autonomy often starts from the top. Thus the management and the people around the management understand it (...) while the operators at the bottom do not understand what is going on* (Appendix 11). Therefore, implementing autonomy in teams should start *“from the bottom”* (Appendix 11).

4.3 Answer on Sub question 3: What is the actual situation of the teams at Area 1 of the Packaging department of Heineken Den Bosch concerning the effectiveness of autonomous teams?

Besides researching the actual situation concerning effective autonomous teams and its Division of Work and HR, the actual relation between effective autonomous teams and its Division of Work and HR is also examined. To determine if there are effective autonomous teams, this research was focused on ‘(C) fixed groups,’ ‘(A) regulating capacity’ and ‘(B) joint responsibility for tasks and the production process.’

Based on the collected data, it can be concluded that the teams at Area 1 of the Packaging department can be defined as fixed groups (C). All respondents mention that the teams rarely circulate in amount and operators (C.1) (Appendices 6 until 14), which results in that the team composition and amount of team members are fixed. According to Piet, each team consists of 13 people, which is called the bruto amount, with a netto occupation of 10 people (Appendix 11). This is supported by Erik, Joep and Remco who mention the same amount (Appendices 10, 12 and 13). Rik (Appendix 8) mentions that every team has *“the same people and the same amount of people”* and mentions that the team compositions change rarely. Olaf confirms this, but states that team compositions can change as a

result of absenteeism of operators or a shortage of operators in a certain team (Appendix 9). According to Joep (Appendix 12), people can change shifts if someone needs to have a day off. The 13 operators are divided over the 2 production lines (Appendices 11 and 12).

To determine if the teams have regulating capacity (A), this research focussed on whether the teams have the ability to plan the production process without supervision (A.1), the ability to improve the production process and work methods without supervision (A.2) and the ability to solve daily problems without supervision (A.3).

Like described in section 4.2.1 and 4.2.2, the teams do not have the ability to plan the production process. The planning for next week is determined by the Planning department for the Packaging department (Appendices 6 until 13). Piet mentions that the planning is very strict (Appendix 11). The PCO's have the ability to look if the planning for next week is fine (Appendices 7 and 11). Thereafter, the PCO's send the schedule via mail to the operators (Appendix 7). Besides, the operators have the ability to have a voice in the planning about *"checking if we can do something differently concerning the modification or switching of beers, so we can save time"* (Appendix 7). The operators are being listened to by the planning department (For example, Appendices 7 and 13). However, according to Remco, *"The operators rarely look at the planning (...)"* (Appendix 13). The Planning department makes the final decision, the operators cannot adjust the planning by themselves (For example, Appendices 8 and 14). However, according to Gerard, every shift, the operators determine where the operators will work in that shift: *"(...) how the operators plan their shifts, what activities they will do and when they will do it, those things are done by the teams themselves. For example, there is one operator in training, then the team determines how they will organise today's shift"* (Appendix 6). This is supported by Joep, who mentions that the teams place the right people at the right workplace (Appendix 12). As a result: the teams do not have the ability to plan the production process. However, the teams do have the ability to plan their shift.

In contrast to the disability to plan the production process, the teams do have the ability to improve the production process and work methods. Admittedly, the operators have to make reports and are minimised by improving small things on the job. Rik (Appendix 8) mentions *"We do those things ourselves. In general, we only do small things to smoothen the line. We do not have to ask permission, but we report the work we have done."* Gerard supports this by mentioning that improving the process is done during the shifts (Appendix 6). Also Olaf confirms this by stating *"We can do small things on our own (...)"* (Appendix 9). Moreover, Erik mentions that the teams have more time now to improve and that we can do it on our own and not because the Team Leaders tell us to do so, which was the case before the pilot (Appendix 10). Furthermore, Stefan mentioned that the teams have the tools to improve the production process (Appendix 14). However, technical or costly improvements have to be discussed with managers and the operators have to write a proposal for the improvement. Gerard

(Appendix 6) mentions *“If you talk about improving the technical aspects of machines, (...), we discuss this with technical specialists. From the maintenance workers.”* Olaf, Piet and Remco mention that the operators write proposals for improvements (Appendices 9, 11 and 13). Remco adds that they look together to the proposals and let the teams come up with a plan about what the teams can do (Appendix 13).

Besides the ability of the teams to improve the production process and work methods, the teams can also solve daily problems without any supervision. According to Rik, the teams are continuously busy with solving problems during their shift. Olaf and Erik mention that they are free to solve problems themselves (Appendices 9 and 10) *“as long as you are authorized to do so”* (Appendix 9). Erik even states that they are, within their function, more or less obligated to solve problems themselves (Appendix 10). According to Joep his team is able to solve 95% of the occurring failures, while Ron even claims that they are able to *“work out 99% of the cases”* (Appendices 12 and 7). Since the teams contain knowledge on different areas, the teams are able to solve a majority of the problems. Due to this independence, less communication is needed, which results in quick results (Appendix 8). Nevertheless, several respondents mention some remarks regarding solving daily problems. For example, Gerard states that teams have to feel confident and need to estimate the time which is needed to solve the problem, before solving the problem (Appendix 6). This estimation of time is important since, if it takes too long, the operators need to inform the Linelead (Appendix 13). Joep agrees and states that, in general, they can solve problems themselves, but *“sometimes the Linelead is needed to make a decision”* (Appendix 12).

As a result, it can be stated that the teams do have some regulating capacity, but not on all levels. The teams do not have the ability to plan the production process without supervision. However, the teams can plan their shift. The teams can solve daily problems and improve the production process and work methods. However, there are some restrictions like only improving small parts of the production process and asking authorisation of Lineleads. This means that the teams have operational regulating capacity. Because the teams can plan their shift and write improvement proposals, which they can convert into practical activities, the teams do have to some extent regulating capacity by design. Moreover, the teams can determine how to achieve their assigned goals, which contributes to regulating capacity by design. However, in section 4.2.2, it was stated that the teams cannot set up goals. Therefore, the teams do not have strategic regulating capacity.

Based on the interviews, it can be concluded that not all teams do have the feeling that the teams do have a joint responsibility for tasks and the production process (B). The operators differ in feeling shared consequences (B.1). Gerard mentions that it depends on the task, but often the operator or the operators of a workplace are responsible (Appendix 6). Erik confirms this by mentioning that it *“(…) depends on the situation”* (Appendix 10). Rik (Appendix 8) mentions that the Linelead has the overall

responsibility. However, some respondents do feel that the teams are responsible and are approached as a team instead of individual. Olaf stated *“Actually, we are all responsible (...). We are together 1. We help each other whenever and wherever, and not that someone is working really hard and the other one is relaxing on a chair”* (Appendix 9). Piet adds that everyone is responsible for his own workplace, but if someone makes a mistake, everyone comes to help (Appendix 11). Joep goes further by stating that *“We are approached as a team (...), we do it together. (...) we do not point out fingers at someone.”* Ron (Appendix 7) mentions that the PCO is responsible, but that the teams take the responsibility. Remco mentions that the Area Manager has the overall responsibility, but that they try to let the teams deal with the problems, *“Otherwise the teams are not autonomous”* and adds that some teams do have the feeling that they have a joint responsibility, but not all the teams have (Appendix 13).

When combining the results of the three dimensions, it can be concluded that there are no effective autonomous teams at Area 1 of the Packaging department of Heineken Den Bosch. The teams do have a fixed amount of operators, but the teams are restricted in their regulation capacity and not all teams feel that they are responsible for the tasks and the production process.

4.4 Answer on Sub question 4: What is the actual situation of the teams at Area 1 of the Packaging department of Heineken Den Bosch concerning its Division of Work and HR?

4.4.1 The actual situation of the Division of Work of the teams at Area 1 of the Packaging department of Heineken Den Bosch

To determine the actual situation of the Division of Work of the teams, this research was focused on ‘(J) definition of tasks,’ and ‘(K) interrelation of tasks.’

To determine the definition of tasks (J), this research focussed on whether the tasks were complete (J.1), delineated (J.2) and measurable (J.3).

It can be concluded that the tasks of the operators are complete, since the output of the tasks are visible in the whole organization physically and in amount. Rik (Appendix 8) mentions that they are *“(…) part of a big organization.”* Ron and Piet go further by saying that the Packaging department is the most important part of the process because they are the last phase of the transformation process and transform several pieces into one finished product: *“(…) we get empty cans and fill them and pack them”* (Appendix 7) and *“(…) the first one who opens the cans are the customers”* (Appendix 11). Ron, Rik, Erik, Piet, and Remco mention that every week they can see their performance and problems of last week (Appendices 7, 8, 10, 11 and 13). Joep adds that there are some sessions where the operators can see their performances of last year (Appendix 12). Ron and Stefan also mentions that they can see the live performance of the shifts (Appendices 7 and 14), because of the screens at the

lines where the performance line should be above 75% (Appendix 5). It is also possible to see the performance of each shift (Appendices 7 and 13), but Remco wants to get rid of shift records, because “(...) records of a shift is also the result of how the last shift performed” (Appendix 13). Gerard mentions that if the line has to make “*Support volumes*” for other countries, every operator will get a can or a bottle of that specific country and a video message from the general manager from a specific country to thank us” (Appendix 6).

Based on the collected data, it can be concluded that the tasks of the operators are delineated, because the tasks and limitations are constituted in a job description. Ron and Erik mention that “*our tasks are described in a job description*” (Appendices 7 and 10). Within this job description, Gerard notices that the operators are able to perform a broad set of tasks (Appendix 6). Examples of these tasks are among others: “*maintenance and cleaning*”, “*problem solving*” and “*commanding machines*” (Appendices 6, 12 and 13). Ron (Appendix 7) mentions that every operator is responsible for its own workplace, but that most operators can work at multiple workplaces. This is supported by Erik who says “*you must control two workplaces*”, while Joep even claims that “*some operators can control two workplaces and others three*” (Appendices 10 and 12). Remco mentions that it is even expected that operators can operate at more than one workplace (Appendix 13). Gerard explains that there is a skill matrix which shows which operator can perform which tasks (Appendix 6). As he continues, “*it shows who can take over other people’s tasks*” (Appendix 6). Other operators confirm this statement by mentioning that they can help at other workplaces (Appendix 12) and “*everybody is able to take over one or more tasks*” (Appendices 7 and 8). These examples make clear that the operators can take over each other's tasks. However, each team has 1 or more fixed PCO's who have a coordination task, which indicates that there can be some internal status differences. However, eventually this function will expire (Appendices 11 and 13). Although the tasks seem to be broad, Piet mentions that Heineken has delineated a lot of things, “*so you cannot do things out of nowhere*” (Appendix 11). Most of these restrictions concern safety and quality measurements (Appendices 7 and 11). Furthermore, Rik states that not every operator is allowed to do something, since operators need to be authorized to perform certain tasks (Appendix 8). These restrictions make the tasks more delineated, which has an influence on which regulating capacity is needed. However, Gerard thinks that the job descriptions could be more explicit, since he mentions being unable to show which operator is responsible for which tasks (Appendix 6). Because of the delineated tasks, it can be determined how much operators are needed to work at the production lines. This amount is fixed as already mentioned in section 4.3.

It can be concluded that the tasks of the operators are measurable, because the tasks are evaluated via different aspects. Ron and Stefan (Appendix 14) states that there is a “*standard assessment system*”, which is used every half year (Appendix 7). This is supported by Rik and Erik (Appendices 8 and 10). Via this system, certain aspects of the tasks will be evaluated. Ron describes that the systems

determine “*what is the score on safety, quality, performance and so on*” (Appendix 7). Erik complements Ron by stating that operators are also evaluated by whether they are a teamplayer (Appendix 10). According to Joep, other relevant aspects are “*whether you checked everything well, if you prepare everything right and if you control your workplace*” (Appendix 12). Remco adds that the tasks are also measured by how operators report and explain certain circumstances. The tasks are measured by the Linelead (Appendices 10, 11 and 13). However, Remco explains that they strive to eventually let the operators evaluate other operators in order to “*lower the hierarchical structure and to let operators stimulate each other to develop themselves*” (Appendix 13). Nevertheless, Rik mentions that it already happens partly; “*we evaluate each other and approach each other*” (Appendix 8). However, this is only in an informal way.

When combining the results of the three indicators, it can be concluded that tasks are well designed at Area 1 of the Packaging department of Heineken. The tasks are considered as complete, delineated and measurable which makes it possible for Heineken to determine what kind of regulating capacity (A) needs to be assigned to the teams. This becomes possible since it can be determined which responsibility each operator has and therefore which kind of regulating capacity corresponds with that responsibility. This has a positive effect on the effectiveness of the autonomous teams. However, this analysis indicates that there are some internal status differences, due to 1 or more PCO’s in the autonomous teams, which can have a negative contribution to the joint responsibility (B) of the team. Moreover, Heineken should be aware that the delineation of tasks can restrict assigning regulating capacity to the teams, which makes the teams less autonomous. This is confirmed by Stefan who admits that if the operators have a limited authority, due to their limited task description, they do not have sufficient regulating capacity to solve unpredictable circumstances (Appendix 14). Moreover, because of the delineation of tasks, it is possible to have a fixed number of operators at the production lines, which has a positive effect on the effectiveness of autonomous teams.

To determine the interrelation of tasks (K), this research was focussed on mutual dependency (K.1) and complementarity between tasks (K.2).

Looking at the structure of the production line as described in section 4.2.1 and the interviews, it can be concluded that the workplaces with a certain task are somewhat dependent on each other by input and output. Ron (Appendix 7) mentions that every workplace is dependent on each other: “*(...) the beginning of the line is responsible for how the rest of the line will perform.*” Olaf confirms this by mentioning: “*(...) dependent on the input and the workplace after me is dependent on my output*” (Appendix 9). Remco gives the following example: “*If there are no cans, the filler cannot fill any cans, and if the filler cannot fill cans, the cans cannot be packed*” (Appendix 13). Rik and Joep mention that they communicate with the other workplaces if a workplace is having some issues (Appendices 8 and 12).

However, the tasks of a certain workplace can be performed individually. Every respondent mentions that each operator can do their tasks on their own (Appendices 6 until 14): *“you can perform the tasks individually”* (Appendix 7) and *“I can perform the tasks individually”* (Appendix 12). As Remco explains, *“they do not need anyone else to get something done”* (Appendix 13). Only when the operators are having a problem at a certain workplace, other operators come to help in order to continue the process again (Appendices 8 and 9). The tasks of the different workplaces can be performed independently, but are somewhat dependent on each other in input and output, and when facing problems on the line, which makes the tasks complementary because the outcomes of the tasks result in 1 product. The following example will clarify the situation: the operators who work at the *“packaging street”* can perform the tasks which belong to the packaging street, like having the right boxes and amount of pallets, but are dependent on the cans before they can package the cans.

As a result, the tasks are somewhat dependent on each other, which makes the tasks complementary, which contributes to making 1 product. This contributes to the effectiveness of the autonomous teams, because the operators together are held responsible for the output of the autonomous team, which contributes to the joint responsibility for tasks and the production process (B). Erik and Stefan confirm this by mentioning that *“people (...) feel responsible (...) together responsible”* (Appendices 10 and 14). This means that the interrelation of tasks (K) is according to the ideal situation.

When combining the results of the two dimensions, it can be concluded that the Division of Work of the teams is well designed, which has a positive influence on the effectiveness of the autonomous teams.

4.4.2 The actual situation of the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch

As described in section 2.3.3, the relation between the HR practices and the people, concerning knowledge, skills and motivation, will be taken as a given.

To determine the actual situation of the HR of the teams, this research was focused on ‘(D) recruitment & hiring,’ ‘(E) training,’ ‘(F) compensation,’ ‘(G) performance management,’ ‘(H) team leaders’ and ‘(I) climate & culture.’

Recruitment & hiring (D) was researched by if Heineken seeks personnel with a collective orientation (D.1) and if the team members are involved in the selection process (D.2). Based on the interviews, it can be concluded that not all operators are suitable to work in the autonomous teams, because they do not have the skills, knowledge and motivation which is the result of a poor recruitment & hiring.

It can be stated that the recruitment procedure is done by the HR-department. Most respondents state that they do not know whether there is a specific recruitment procedure for people who are going to work in the autonomous teams. Gerard mentions: *“I do not know if there is such recruitment procedure”* (Appendix 6). Ron adds that he does not know whether the recruitment procedure is focussed on *“self-reliance”* and *“collective orientation”* (Appendix 7). This is confirmed by Rik, Erik and Piet (Appendices 8, 10 and 11). Remco is more confident and states that there is no recruitment procedure which is focussed on self-reliance and collective orientation (Appendix 13). Remco and Stefan add: *“The recruitment procedure is the same as before”* (Appendices 13 and 14). However, there is a document with ‘do’s and don’ts’ for operators who work in autonomous teams, which can be used to assess whether an operator is suitable for autonomous teams (Appendices 13 and 16). In general can be stated that the respondents think that most operators are suitable to work in autonomous teams. Olaf mentions that his team has a collective orientation (Appendix 8). Piet describes that most operators have a collective orientation, but also that some operators are not suitable to work in the autonomous teams (Appendix 11). This can be confirmed by Gerard who mentions that *“(…) some teams do have a collective orientation, some teams do not have a collective orientation”* (Appendix 6). Joep states that some operators use their mobile phones while working, but feels that those operators still have a collective orientation (Appendix 12), while Remco sees that if there are some issues in the back of the line *“(…) people from the other parts of the line just sit down and do not help the other team members”* (Appendix 13). This is a reason why he states that some teams do not have a collective orientation. Erik mentions that *“We are heading in the right direction, but in my opinion, we do need some training”* (Appendix 10).

Based on the collected data, it can be concluded that the team members are partly involved in the selection process. Although Erik mentions that the involvement is *“barely present”* (Appendix 10), the operators state that they do have a voice in the selection process (Appendices 7 until 9 and 11 until 13). For example, Ron and Piet indicate that the opinion of operators, regarding the recruitment of a person, is requested (Appendix 7 and 11). However, the employment interviews are held with the HR department and then with a Linelead and are followed by a probation period (Appendix 13). Hence, the operators are not involved in the employment interviews. As described in 4.2.2, the operators are only involved during the probation time of the new employee (Appendix 10). This allows the operators to determine whether the new employee fits in the team or not (Appendix 9). After the probation period, the opinions of the operators about the new employee are requested (Appendix 13). Olaf states that the discussion about the new employee happens with *“operators among each other”* (Appendix 9). Joep adds that the team jointly makes a decision about the new employee. According to Olaf, the team can even demand another employee, in case the new employee is not considered as appropriate for the team (Appendix 9). Gerard states that *“the feedback from operators [about a new employee] is much more valuable than the initial solicitation procedure”* (Appendix 6). However, Rik

mentions that it is not always easy to express the opinion of the operators, since it sometimes costs a lot of effort to make it clear to hire someone, *“because it follows an official way”*, which makes it a long and slow process (Appendix 8).

As already mentioned, the HR practice of recruitment & hiring is poorly designed. This has a negative influence on the regulating capacity (A) and joint responsibility (B). The negative influence between recruitment and hiring and joint responsibility is confirmed by Gerard who mentions that *“mismatches occur between employees and teams, which are due to poor solicitation procedures”* (Appendix 6). These mismatches arise due to a lack of collective orientation, which means that the employees do not have the skills, motivation and knowledge, to take over or help other operators. This has a negative influence on the joint responsibility for tasks and the production process which makes the autonomous teams less effective.

Remco and Ron confirm the relation between recruitment and hiring and regulation capacity by stating that the recruitment procedure should be designed to hire people with the ability to cope with unpredictable circumstances (Appendices 9 and 13). However, they mention that there is no recruitment procedure which focuses on these knowledge and skills, which results in people who are not suitable to acquire full regulating capacity in order to cope with unpredictable circumstances (Appendices 9 and 13).

Training (E) was researched by identifying courses which are focussed on individual teamwork-related competences (E.1), and to team training (E.2). Based on the interviews, it can be stated that the training do not result in enough knowledgeable and skillful operators to work in autonomous teams.

According to the interviews, it can be concluded that Heineken offers individual training which are focussed on teamwork-related competences. However, those training are offered to the managers. Most operators do not know if those training exist. Olaf states that he does not know if those training exist (Appendix 9). Gerard mentions that those training are focussed on hard skills and soft skills, but states: *“(...) it is relatively new for the people on the shopfloor. These people are barely involved in those training. Higher managers do often have those trainings”* (Appendix 6). Piet and Stefan (Appendix 14) confirm this by saying that when he was promoted to PCO *“(...) we got those training like communication training”* (Appendix 11). Erik mentions that those training are important and that they need those training, because not everyone is good at communication or has a collective orientation (Appendix 10). Also Piet and Remco state that Heineken barely offers those training, while the operators need them (Appendices 11 and 13). Remco adds that those training are important to: *“(...) develop further to make progress in autonomy and responsibility”* (Appendix 13). Ron, Rik and Olaf mention that the operators help to develop each other (Appendices 7, 8 and 9). Ron, who is a PCO, mentions that every year, he looks at which operator can improve in certain skills (Appendix 7).

Rik confirms this by saying that Ron helps Olaf with certain courses (Appendix 8). As a result, because of the lack of training which are focussed on teamwork related competences, the operators will not improve those competences.

In contrast to individual training which are focussed on teamwork related competences, Heineken does offer some team training. Ron states that “(...) yearly, we have some training, (...) also communication training and knowledge training, which we do as a group” (Appendix 7). Ron adds that the management set up a plan and the team can react to this. Gerard and Olaf mention that the first weeks of each year, they have some training as a team (Appendices 6 and 9). Piet mentions that they have several “*educating days*” in a year, which help the operators to perform their tasks more autonomously (Appendix 11). Olaf, Piet and Joep are positive about the team training Heineken gives (Appendices 9, 11 and 12). Olaf states: “*it is always a little bit of education and knowledge you will get*” (Appendix 8). However, some respondents are less positive about the frequency of these team training. Rik mentions that they have a few team training in a year (Appendix 8). Erik states that there is 1 day: “*an Area day,*” which is focussed on the experience of the autonomous teams, but he thinks that they need more training days like this (Appendix 10). This is confirmed by Remco and Stefan who state that there is 1 day in a year which is focussed on the autonomous teams with training like, communication and giving feedback to each other (Appendices 13 and 14). Remco also adds that the management do have more team training than the production teams (Appendix 13).

As already mentioned, the HR practice training is poorly designed, This has a negative influence on regulating capacity (A) and joint responsibility for tasks and the production process (B).

The people will get knowledge and skills because of the training, but these knowledge and skills do not result in regulating capacity, since the operators cannot cope with unpredictable circumstances. Rik (Appendix 8) mentions that these training are “(...) *theoretical things*” and “*in order to remember the things we learned, we have to practice with these things.*”

It can also be stated that the training is poorly designed, because the operators do not have the knowledge and skills to take joint responsibility for tasks and the production process, which affects the effectiveness of the autonomous teams in a negative way. Remco (Appendix 13) mentions that “(...) *we have to make some steps which can help the operators to take responsibility.*”

Compensation (F) was researched by rewards for teamwork behaviours and outcomes (F.1) and rewards for performing teamwork-related skills (F.2). As mentioned before, Heineken does not recruit on personnel with a collective orientation. Simultaneously, it can be considered as remarkable if Heineken does give compensation for teamwork-related skills. It can be stated that there is not much compensation based on teamwork behaviours. However, the lack of compensation does not result in

operators who do not have the motivation to take responsibility for the production process. Nevertheless, it can be seen as a stimulus.

According to the interviews, the respondents differ in the answer if they get team rewards. It can be concluded that there is no compensation system for the teams, although sometimes the teams will get small rewards for their effort. Gerard (Appendix 6) mentions *“If a team brings forward a process improvement, which affects the whole Area or even the whole department, then we can reward them, (...), but we have not given any kind of reward so far.”* Remco adds that *“We do not give rewards when a team has done a good job.”* This is supported by Ron and Erik (Appendices 7 and 10). Piet and Joep state that they do not really need any kind of reward, because Heineken pays a good salary (Appendices 11 and 12). However, some respondents do mention that they get small rewards like a *“stroopwafel”* (Appendices 7, 9 and 12). This is the case when, for example, the teams have a shift record (Appendices 7 and 9). Piet and Joep also mention that the teams get a card from the Linelead to have a drink in the city once in a year, but this is a routine (Appendix 11 and 12). Stefan mentions: *“We do not give team rewards, we are working on it”* (Appendix 14).

Moreover, it can be concluded that the operators get some individual rewards, but these rewards are not focussed on teamwork-related skills. The operators will get rewards for the tasks they perform. Rik and Joep both mention that if the operators get a good labour assessment, they can rise in salary, because when someone starts working at Heineken, they do not earn the maximum salary (Appendices 8 and 11). These performances are evaluated according to some assessment criteria, but these are not focussed on teamwork-related skills (Appendix 13). Erik mentions that Heineken should focus on these skills, because: *“(…) if Heineken wants autonomous teams, they should take these kinds of criteria into account. I am a teamplayer, but they do not look at if someone is a teamplayer”* (Appendix 10). Ron mentions that operators can earn to get higher up in the organization, which he sees as a reward (Appendix 7). Joep states that Heineken should focus on team rewards instead of individual rewards (Appendix 12).

As a result, most respondents mention that they do not need rewards, but state that rewards can result in motivated operators who take more joint responsibility for tasks and the production process (B). Rik states: *“Because of the career opportunities, this can be seen as a stimulus for people to have a joint responsibility for the production process”* (Appendix 8). Erik goes deeper and states, *“When people get rewarded for teamwork-related skills, they will take more responsibility”* (Appendix 10). This is confirmed by Remco, who states that this can result in a culture where people give feedback to each other (Appendix 13).

Performance management (G) was researched by looking if the teams use feedback tools to give feedback (G.1), and if the teams have input in improving performances (G.2). The way performance

management is designed can more or less result in knowledgeable and skillful operators to work in autonomous teams.

To make a long story short, the teams do not use feedback tools or other formal structures to give feedback. Gerard, Olaf, Erik, Piet and Joep state that they do not use any kind of tools in the teams (Appendices 6, 9, 10, 11 and 12). However, the managers do use the 360-degree feedback as a tool, when evaluating operators (Appendix 7). Remco mentions “(...) *the 360-degree feedback is available and people can apply for this tool*” (Appendix 13). Moreover, Piet and Stefan (Appendix 14) states that he uses the same technique to give feedback every time “(...) *talk in first person when giving feedback and tell what his or her action must be like for me*” (Appendix 11). Erik (Appendix 10) says he wants to have a course about how to give feedback. This is interesting because Stefan mentions that the teams have feedback training (Appendix 14). More about giving feedback can be found when describing H.1.

It can be concluded that the teams do have some input in improving the performances. Olaf and Erik state that having a good ambiance is very important (Appendices 9 and 10). Erik (Appendix 10) mentions that 10 minutes before every shift, the operators meet each other in the teamroom to have “(...) *small talks and to know who is present for each workplace. This creates some peace in the team.*” Moreover, Gerard, Olaf and Joep mention that it is important to place the right people at the right workplace and that everyone knows what to do (Appendices 6, 9 and 12). Furthermore, Rik, Joep and Remco mention that the team creates space for education when there are enough operators available, by learning from team members or by following a course (Appendices 8, 12 and 13). This can result in more knowledgeable and skillful operators. Another method is by giving feedback to each other (Appendices 6 and 14) and to be “(...) *open and honest*” (Appendix 11). The PCO’s mention that they “(...) *dig deeper when talking to operators in order to let the operators take responsibility to come up with solutions by themselves*” (Appendices 7 and 11). Last but not least, the operators solve problems together as a team (Appendices 8 and 12).

As a result, the way performance management is designed can more or less result in knowledgeable and skillful operators who can have regulatory capacity (A), to cope with unpredictable circumstances. This is because the teams do not use any feedback tools, but do have input in improving the performances, which generates knowledge and skills because these inputs can be evaluated, in order to improve the performances. Moreover, having the ability to improve work methods and the production process, is a source of regulating capacity.

Team leaders (H) was researched by determining whether the operators give feedback to each other (H.1) and whether the operators are held accountable (H.2). Based on the interviews, it can be stated

that the way team leaders are designed, does result in knowledgeable, skillful and motivated operators. However, the operators can give more feedback and in a better way.

Based on the collected data it can be stated that the operators do give feedback to each other. However, the teams should give more feedback and in a better way. Ron mentions that the operators in his team are *“very open to each other”*, which means that operators approach each other for negative as well as positive feedback (Appendix 7). This is supported by Olaf who adds that operators approach each other *“if you do something wrong”* (Appendix 9). This is supported by Erik (Appendix 9). Joep agrees and claims that people provide each other with sufficient feedback (Appendix 12). Gerard mentions that there are operators who *“always react positively on (...) operators”* (Appendix 6). However, there are also some operators who only give negative feedback (Appendix 11). Piet mentions that this does not have to form a problem if the operators are able to transmit the feedback right: *“by sometimes mentioning something positive”* (Appendix 11). Moreover, negative feedback should be perceived as a learning point instead of criticism (Appendix 11). Rik mentions that almost all feedback is given directly to the operators (Appendix 8). This is supported by Olaf, Joep and Remco (Appendices 9, 12 and 13). Sometimes, this is done via mail, to reach more operators or to reach operators from earlier shifts (Appendix 8). According to Ron, positive feedback is important since it stimulates other operators (Appendix 7). Remco agrees and mentions that the PCO needs to discuss feedback in the team in order to *“stimulate the operators to approach each other and to keep it small”* (Appendix 13). Although the operators give each other feedback, Gerard states that *“Always the same operators give feedback”* (Appendix 6). According to Erik and Remco, the amount of feedback should be more (Appendices 10 and 13).

According to the interviews, it can be concluded that the operators as well as the teams, are held accountable for their jobs and for improving the team, which could be seen when describing G.2. Gerard states that the operators are held accountable for their own operational tasks and own workplace (Appendix 6). This is supported by Piet (Appendix 11): *“The operators are accountable for their own workplace”* and Erik (Appendix 10): *“If I make a mistake, I feel accountable”*. Heineken tries to place the accountability as low as possible in the organisation (Appendix 13). Ron states he experiences that the operators are given more accountability since they come up with ideas by themselves (Appendix 7). Remco agrees and mentions, *“I receive less questions and have to make less decisions and people approach me with their own ideas and suggestions”* (Appendix 13). Also the PCO's are given more freedom to make decisions (Appendix 13). Rik and Olaf mention that the whole team feels accountable for their tasks: *“Together we are accountable”* (Appendices 8 and 9). This is supported by Joep, who also states that you need to arrange a stand-in in case you leave the team (Appendix 12). Therefore, the team needs to educate an operator to take over the tasks. Erik mentions something similar: *“We ourselves can determine where the team falls short and who should need some*

training” (Appendix 10). Remco also mentions that the whole team is held accountable (Appendix 13). If something goes wrong, *“The team needs to discover what went wrong”* (Appendix 13).

As a result, it can be concluded that the operators are held accountable for their jobs, individually and as a team. This results in motivated operators who are capable to work in autonomous teams. Moreover, the operators do give feedback to each other, however, the operators can do it more and in a better way. This results in less knowledgeable and skillful operators. These knowledge, skills and motivation results in the ability to have regulating capacity (A) and to take joint responsibility (B). This is confirmed by Stefan who explains: *“The team needs to solve problems by themselves (...) Talk to each other, because it is a collaboration”* (Appendix 14).

Based on the interviews, it can be concluded that climate & culture (I) is well designed. The operators do all mention the same vision, which means that the teams have a shared vision (I.1). This vision is that working together is better than working on your own (Appendices 6 until 13). This shared vision can be seen when Gerard and Ron talk about: *“(...) help each other, no matter what”* (Appendices 6 and 7). This results in motivated operators, because the operators have the same state of mind. Moreover, having a shared vision results in knowledgeable operators, because the shared vision helps to determine which type of knowledge is needed. The motivated and knowledgeable operators have a joint responsibility for tasks and the production process (B), because of the shared vision, the operators have the willingness to take over each other's tasks.

When coding the interviews, some new codes were found (Appendix 4). Two of them are important to mention. The first code is ‘managers with a coaching task.’ According to Gerard (Appendix 6), all managers should be supporting leaders, which means being supportive and serving the employees who report their work to them. The responsibility for having autonomous teams is also a task of the managers. Erik mentions: *“(...) we do have managers who have a well function in the autonomous teams”* (Appendix 10). Also Piet mentions that the PCO's have a coaching function instead of a hierarchical function, which helps the team function autonomously (Appendix 11). Joep adds, *“We do not need a team leader, (...), we need someone who can coach us”* (Appendix 12). This code can be seen as a new dimension of HR, because the managers with a coaching task can result in knowledgeable, skillful and motivated operators.

The second code is ‘intrinsic motivation.’ This code can be placed at recruitment & hiring (D), because some respondents mention that some operators do not have intrinsic motivation to work independently or to educate themselves (Appendix 11). For example, Piet mentions *“(...) I have not seen yet that operators ask for training.”* This can be seen as another important characteristic when recruiting & hiring new personnel.

When combining the results of the 6 dimensions, it can be concluded that the HR of the teams is not well designed and has a negative influence on the effectiveness of the autonomous teams.

4.5 Answer on Sub question 5: What are the similarities and differences between the desired and the actual situation concerning the effectiveness of autonomous teams and the Division of work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch?

When the actual and the desired situation are compared, the following conclusion can be made:

When analysing the results of Effective Autonomous Teams, it can be concluded that the teams do have a fixed amount of operators (C). This corresponds with principle 4. However, the teams are restricted in their regulating capacity (A), which does not correspond with principle 2. The teams do have operational regulating capacity, some design regulating capacity and no strategic regulating capacity. The teams do not have the ability to plan the production process without supervision, but can plan the shift. Moreover, the operators can improve work methods, but these are restricted. Furthermore, the teams can solve daily problems, but are also restricted. Not all teams feel that they have a joint responsibility for the tasks and the production process (B), because not all teams share the consequences of their outcomes. As a result Area 1 of the Packaging department has no effective autonomous teams.

In the actual situation, the Division of Work of the teams is designed effectively, because the definition of tasks (J) and interrelation of tasks (K) are comparable with the ideal situation. The definition of tasks is designed according to the first principle. This is the case because the tasks are considered as complete, delineated and measurable which makes it possible for Heineken to determine what kind of regulating capacity (A) needs to be assigned to the teams. This becomes possible since it can be determined which responsibility each operator has and therefore which kind of regulating capacity corresponds with that responsibility. This has a positive influence on the effectiveness of the autonomous teams, which corresponds with principle 2. However, this analysis indicates that there are some internal status differences, due to 1 or more PCO's in the autonomous teams, which can have a negative contribution to the joint responsibility (B) of the team. This does not ideally correspond with principle 5, because the teams should not have internal status differences. However, the teams can execute different tasks, which corresponds with the first part of principle 5. Moreover, the PCO's can be seen as a spokesperson, which corresponds with principle 6. However, Heineken should be aware that these persons should not become too bossy, since Heineken does not circulate in spokespersons. Moreover, Heineken should be aware that the delineation of tasks can restrict assigning regulating capacity to the teams, which makes the teams less autonomous. The delineation of tasks contributes to the fixed amount of operators at the production lines, which contributes to principle 4.

When looking at the interrelation of tasks, it can be concluded that the tasks are somewhat dependent on each other, which makes the tasks complementary, which contributes to making 1 product. This contributes to the effectiveness of the autonomous teams, because the operators together are held responsible for the output of the autonomous team, which contributes to the joint responsibility for tasks and the production process (B). This means that the interrelation of tasks (K) is according to the ideal situation, because the actual situation corresponds with principle 3.

The HR of the teams is not designed effectively. This is because recruitment & hiring (D), training (E), compensation (F), and performance management (G) do not correspond with the ideal situation, which results in operators who are not knowledgeable, skillful and motivated to work in autonomous teams. Heineken does not focus on employees who have a collective orientation and the team members are barely involved during the selection process which results in operators who do not have the knowledge, skills and motivation to work in autonomous teams, because the operators cannot have regulating capacity (A) in order to execute their tasks independently. This does not correspond with principle 2. Moreover, the operators do not have the skills, motivation and knowledge, to take over or help other operators, which has a negative influence on joint responsibility for tasks and the production process (B). This does not correspond with principle 5. The way training are designed, does not result in knowledge and skills to have regulatory capacity and to take joint responsibility, since training are especially focussed on the management, are theoretical, do not focus on individual teamwork-related skills and there is just one team training in a year. This does not correspond with principle 2. Moreover, most operators state that they do not know what training possibilities Heineken offers. Compensation is not well designed, because the operators get sometimes individual rewards, but not team rewards, which does not result in motivation to take joint responsibility. This does not correspond with principle 9. However, most operators state that they do not need rewards, because Heineken pays a good salary, but admit that team rewards can help in taking more joint responsibility for tasks and the production process. The way performance management is designed does more or less result in knowledgeable and skillful operators who can have regulating capacity (A), to cope with unpredictable circumstances and to improve work methods, because the inputs of the team can be evaluated and improved. However, the teams do not use feedback tools which means that giving feedback happens in an ineffective way, which results in insufficient knowledge and skills to improve the team performances. This dimension does partly correspond with principle 2, because of the certain knowledge and skills that are generated to have regulating capacity. Team leaders does result in knowledgeable, skillful and motivated operators, because the operators do give feedback to each other, although this should be more and better structured, and the operators are held accountable for the tasks and the production process. This corresponds with principle 2. Moreover, climate & culture does result in knowledgeable and motivated operators, which results in the ability to have regulating capacity and to take joint responsibility, because of the shared vision. This corresponds with principle 2.

Chapter 5: Conclusion and Discussion

This chapter consists of the conclusion, recommendations, relevances and reflection.

5.1 Conclusion

The goal of this research was ‘making recommendations to improve the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch for the purpose of effective autonomous teams, by generating insight in the similarities and differences between the desired and the actual situation concerning effective autonomous teams and its Division of Work and the HR.’ To reach this goal, the following research question was formulated: *“What are the similarities and differences between the desired and the actual situation concerning the effectiveness of autonomous teams and the Division of Work and the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch?”*

To answer this question, a gap-analysis was performed. The desired situation as described in the theory, concerning the effective autonomous teams and its Division of Work and the HR, was compared with the actual situation at the teams of Area 1 of the Packaging department of Heineken Den Bosch. It can be concluded that there are no effective autonomous teams at Area 1 of the Packing department of Heineken. This is because the dimensions regulating capacity and joint responsibility for tasks and the production process, are not in line with the theory. However, this is the case for the dimension fixed groups.

The Division of Work of the teams is well designed. Both dimensions, definition of tasks and interrelation of tasks correspond with the desired situation. This has a positive influence on the regulating capacity of the operators and their joint responsibility for tasks and the production process. However, Heineken should be aware that the delineation of tasks can restrict assigning regulating capacity to the teams, which makes the teams less autonomous.

HR of the teams is not well designed. The operators of the teams at Area 1 do not have sufficient skills, knowledge and motivation to have regulating capacity and to take joint responsibility for tasks and the production structure. This is the result of poorly designed HR practices recruitment & hiring, training, compensation and performance management. The HR practices team leaders and climate & culture are designed in line with the desired situation.

5.2 Recommendations

This research is useful for the teams of Area 1, the Lineleads, the Area Manager, the Packaging Manager and the CEO of Heineken Den Bosch. It was useful to research whether the teams of Area 1 are facing a merry-go-round dilemma. This is the case, because the teams have very dependent

relations with other departments at the macro-level, like planning and maintenance, which results in that the preparing and supporting activities are not the responsibility of the teams. At the meso-level, the teams do not have high dependencies with each other, which is in line with the desired situation. As a result, the team cannot steer themselves which makes the teams not autonomous. The researcher recommends assigning more regulating capacity to the teams. However, this can only be the case if the teams do have the knowledge and skills to perform the preparing and supporting tasks. In other words, the teams need to have an overview of the planning and have knowledge in for example, maintenance activities. Heineken is already doing a good job by educating some operators to a T1'er. However, to be more independent of other departments, the operators need more knowledge and skills to execute more tasks. This can be done by brainstorm sessions with the teams, the Lineleads, the Area Manager, the Packaging Manager and the CEO of Heineken Den Bosch to map which departments the teams have a strict relation with and why. A method can be, drawing the departments and the relations with the teams at the production lines. Lekkerkerk (2017) provides a method to do this. After that, it can be determined what is needed to lower the strictness and dependencies in the ideal situation. Next, the teams can make plans about how to get what is needed to reduce the dependencies. The Division of Work of the teams has to be researched again, to determine what regulating capacity is needed and what kind of human resources (people) are needed to fulfil the tasks. However, it is questionable if these efforts will result in fully autonomous teams, since it is hard to get an overview on, for example, planning. If Heineken really wants fully autonomous teams, a restructuring of Heineken Den Bosch is recommended. Therefore, the design steps of Kuipers, Van Amelsvoort and Kramer (2018, p. 236), which are described in *"Het Nieuwe Organiseren: alternatieven voor de bureaucratie,"* can help restructure Heineken Den Bosch. Thereafter, the Division of Work of the teams (definition of tasks and interrelation of tasks) has to be researched again, to determine what regulating capacity is needed. Thereafter can be determined what kind of Human Resources are needed

When the teams of Area 1 are not facing a merry-go-round dilemma anymore, some adjustments in the HR (people) have to be made. It is hard to adjust the operators, so the HR practices can be adjusted which will have an influence on the operators. In this research, it was concluded that recruitment & hiring was not designed according to the desired situation. This resulted in operators who do not have the knowledge, skills and motivation to get sufficient regulating capacity to perform independently and to take responsibility for tasks and the production process. Moreover, the HR practices are not fully performed by the teams. The researcher recommends recruiting people who have a collective orientation and self-reliance. This can be performed by the teams, if the teams set up a list for what is needed to perform in autonomous teams. The Do's and Don't appendix, which is already set up by Heineken, can help evaluate the candidate in the probation period.

Furthermore, Heineken should make clear which training, individual training as well as team training, Heineken offers, because the operators state that they do not know what kind of training Heineken offers. Moreover, the training should be focussed more on teamwork-related competences, because the operators do mostly have training focussed on hard skills. Also, training should be more practical instead of theoretical, because training does not result in knowledge and skills, which makes it harder to assign regulating capacity to the teams or to take responsibility for tasks and the production process. These problems can be solved by having some team building days with interactive activities, which are focussed on problems the teams are facing. The PCO's and Lineleads and Area Manager can help in determining which activities are needed and function as a coach.

The rewards are based on individual performances. Moreover, it was mentioned that Heineken rewards teams based on their shift records. However, the shift records are also related to other teams. The researcher recommends getting rid of shift records, because it can result in demotivated teams. It is recommended to have more rewards based teams and teamwork-related performances, in order to increase the motivation to take joint responsibility for tasks and the production process. An example can be that the teams will get certain points based on teamwork-related performances and when a certain amount is reached, the teams will get a team day with, for example, a barbecue. The Linelead, who can be seen as a coach, can give the points. This method helps to stay motivated to reach the goal. This method is also used at the researcher's work, which has great success. Invest in your employees, because they make the money.

The last recommendation is based on performance management. The operators do have input to improve the performances, which is a good thing because this results in knowledge and skills to evaluate and improve the performances. However, the teams do not use feedback tools to give feedback, which results in ineffective feedback which does not result in knowledgeable and skillful operators who can have regulating capacity. The researcher recommends using some feedback tools or feedback training to give feedback in an effective way. The Lineleads, PCO's and operators can brainstorm about a method.

The problems stated in Chapter 1.1, can be solved with these recommendations.

5.3 Relevance of this research

The societal relevance of this research is that this research is aimed at improving the effectiveness of the autonomous teams at Area 1 of the Packaging department of Heineken Den Bosch by giving recommendations for the Division of Work and the HR of these teams. Besides, the recommendations can help Heineken, since the concept of autonomous teams will be implemented at each brewery of Heineken worldwide. Furthermore, this research may help other organisations with production lines which also consider implementing autonomous teams. The recommendations can be of value for other

organisations, especially the first recommendation, because these problems will definitely occur in other organisations with production lines.

The scientific relevance of this research is that it was difficult to research the HR of the teams and give recommendations to adjust the HR. The researcher found a method to research if the teams of Area 1 are having knowledgeable, skillful and motivated operators. It is proven that the HR practices, described by Salas, Kosarzycki, Tannenbaum and Carnegie (2005) have a positive effect on requiring knowledgeable, skillful and motivated personnel. When a HR practice is not designed according to the theory of Salas et al. (2005), the personnel will not be knowledgeable, skillful and motivated. This is why the theory of Achterbergh and Vriens (2019) and Salas et al., (2005) was combined to have a useful research for Heineken. As a result, this research contributes to the theory and gives a new insight of how to research the effectiveness of autonomous teams and the influences of its Division of Work and HR.

5.4 Discussion and limitations of this research

5.4.1 Methodological reflection

To ensure the internal validity of this research, the studies of Achterbergh and Vriens (2019) and Salas, Kosarzycki, Tannenbaum and Carnegie (2005) were combined in order to research the HR of the teams at Area 1 of the Packaging department of Heineken Den Bosch. This helped the researcher to get a clear understanding of the situation. Moreover, by conducting semi-structured interviews, the questions are related to the theory which helped the researcher to get a clear understanding of the actual situation, which could be compared with the desired situation. Furthermore, by recording the interviews, transcripts could be formed. This enabled the researcher to generate rich data. However, since the interviews were held in Dutch and consequently transcribed in Dutch, it was possible that important data got lost in translation. Besides, triangulation of the functions of the respondents (operators, Lineleads and Area managers) provided the researcher a broader understanding of the actual situation. At last, this research also researched the actual relation of the Division of Work and the HR on effective autonomous teams. These relations were asked to the respondents. This was done by asking questions of a dimension and then asking how the design of this dimension relates to regulating capacity and/or joint responsibility for tasks and the production process. However, some answers of how a dimension was designed were hard to summarize during the interviews to ask questions how it relates to the dimension of effective autonomous teams. The reason for this was that no relation questions were prepared. These were asked spontaneously. However, this does not have a big impact on the internal validity, because researching the relation was not the direct goal of this research.

To ensure the reliability of this research, in Chapter 3 was described which data was used and how the data was analysed. All original coded interviews can be found in the Appendices. Furthermore, the interviews were recorded, or memos were made to keep as close to the data as possible. Moreover, some memos are attached in order to follow what the researcher did to cover some issues. Furthermore, when the researcher had to make some choices, these choices were clarified.

To ensure the usability of this research, some recommendations can be found in section 5.2. It was the researcher's purpose to give clear and detailed recommendations, which can be used directly by Heineken Den Bosch. This can be of value for all breweries of Heineken, because Heineken wants to implement autonomous teams at every brewery worldwide.

5.4.2 Theoretical reflection

The theory of Van Amelsvoort and Scholtes (1994) was the basis of this research. These 9 design principles helped to link the Division of Work and HR to effective autonomous teams. When operationalizing the HR according to Achterbergh and Vriens (2019), the researcher could not find a way to study this. This is why the researcher thought that this theory was not usable for this research. The researcher could use knowledgeable, skillful and motivated personnel as 3 dimensions to measure the HR of the teams, but it is hard to give recommendations to improve these dimensions. The reason why these dimensions were (not) according to the desired situation should still not be clear. To avoid that all respondents gave different reasons why they (not) are knowledgeable, skillful and motivated, which could not help in making adequate recommendations for the organization, the researcher started looking to practices which have an impact on the knowledge, skills and motivation of people. However, a lot of reasons can impact the knowledge, skills and motivation of people. This is why the researcher focussed on practices which can be performed and adjusted in an organization. Therefore, the HR practices of Salas, Kosarzycki, Tannenbaum and Carnegie (2005) were added in this research. It was already proven that these HR practices have an influence on the knowledge, skills and motivation of people, which made it possible to combine the definition of HR of Achterbergh and Vriens (2019) with the HR practices of Salas et al., (2005). As a result, the researcher could make some recommendations which can be used by Heineken immediately.

Moreover, in the interviews and chapter 4.4.2 can be found that there are two additional important characteristics which were not researched: managers with a coaching task and intrinsic motivation. Intrinsic motivation could be added to recruitment & hiring in the theory of Salas et al., (2005), because the respondents mentioned that this is an important characteristic to have when working in autonomous teams. Furthermore, the respondents mentioned frequently that managers with a coaching task have an effect on the functioning of employees who work in autonomous teams. This is why managers with a coaching task could be added as an HR practice. However, when reading Van Amelsvoort and Scholtes (1994) and Kuipers, Van Amelsvoort and Kramer (2018), these authors

already mentioned the importance of managers with a coaching task. This research should have been more complete when this variable was added to this research.

At last, it was not the intention to research whether the teams of Area 1 of the Packaging department in Den Bosch are facing a merry-go-round dilemma, because the researcher thought that the result would not influence the answer or recommendations of this research. However, after dived deeper in this dilemma, described by Lekkerkerk (2017), the researcher added this to the research. This resulted in better recommendations to get fully autonomous teams.

5.4.3 Personal reflection

Because of the conversations with a Linelead before the research was started, the researcher had the preposition that the technique, as part of the organizational infrastructure, was not the problem of the ineffectiveness of the autonomous teams. This is why technique was excluded from this research. However, it should be better for Heineken if this preposition was confirmed. This was also the case when determining to research if the teams of Area 1 are facing a merry-go-round dilemma, like described in the previous section.

Some respondents told long stories when questions were asked, but not all the information was important for this research. The researcher succeeded in getting the information which was needed, but did not intervene when respondents told long stories. This is because the researcher thought it could be considered as rude to interrupt the respondent. This resulted in long stories which did not bring new information. This can be considered as a take-away. Moreover, due to the internship last year, some people knew the researcher already. Therefore, it is possible that some respondents gave me social desired answers. This could have an impact on the results. However, the respondents who were unknown for the researcher, gave more or less the same answers. This is why this should not result in unreliable answers.

Furthermore, because of the COVID-19 pandemic, the researcher was not allowed to enter the brewery multiple times. This is why 7 interviews were conducted on the same day. This could have an impact on the attention of the researcher.

5.5 Future research

In future research, it is recommended to take also the technique into account as part of the organizational infrastructure. This will result in a better understanding of the design of the organizational infrastructure. Moreover, intrinsic motivation and managers with a coaching task should also be taken into account to strengthen the internal validity. Furthermore, it is recommended to take other reasons into account which could have an influence on knowledgeable, skillful and motivated personnel.

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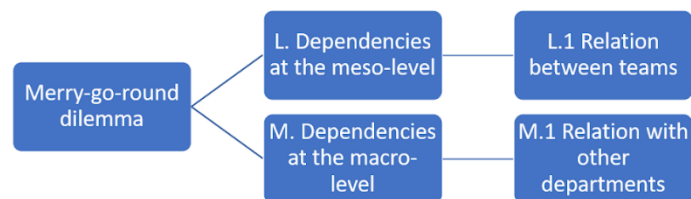
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Appendices

Appendix 2: Explanation of the operationalizations including items

Describing the production structure and possible merry-go-round dilemma

To determine if there is a merry-go-round dilemma, it was necessary to describe the production structure of the Packaging department of Heineken Den Bosch. The production structure was described according to one manager. In this interview, a Linelead was asked how the macro- and meso-level is structured at the Packaging department. In the interviews with the respondents, some questions were asked about the relations and interfaces with other departments or teams on macro- and meso-level. Via this way, it was possible to determine whether there is a merry-go-round dilemma. The operational definition of merry-go-round dilemmas was based on the theoretical definition. Therefore, the operational definition was: the mistake of Heineken to state that it has autonomous teams, while in reality the autonomous teams cannot determine their own direction despite their effort to change the direction of the teams due to dependencies at the macro- and meso-level. The dimensions of merry-go-round dilemma were: '(L) dependencies at the meso-level' and '(M) dependencies at the macro-level.' The indicator of dependencies at the meso-level was (L.1) relation between teams, and the indicator for the dependencies at the macro-level was (M.1) relation with other departments.



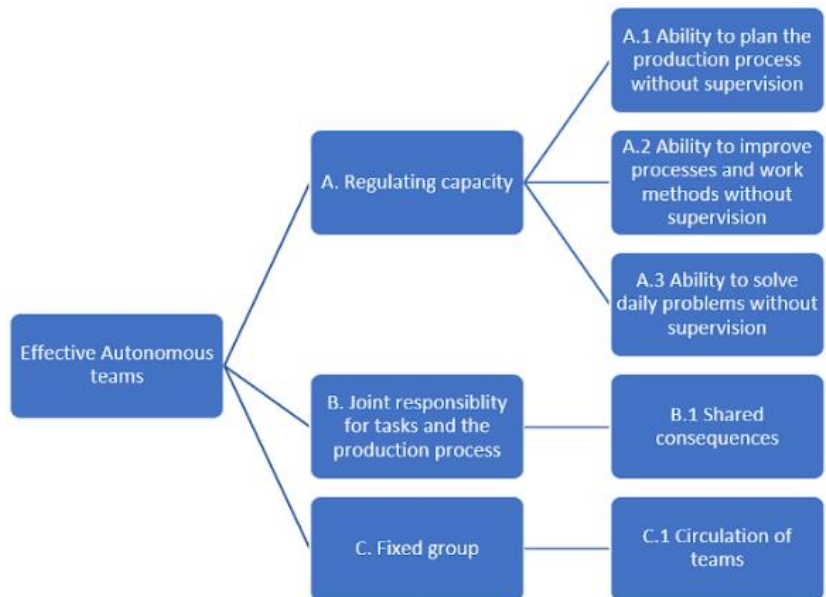
Operationalization of merry-go-round dilemma

Operationalization of effective autonomous teams

The operational definition of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: a fixed group of operators in the teams of Area 1 of the Packaging department of Heineken Den Bosch with a joint responsibility for the whole production process and for tasks aimed at process control, solving daily problems and improvement methods, without supporting services.

The operationalization of effective autonomous teams was based on the theory of Van Amelsvoort and Scholtes (1994). The dimensions were based on the three characteristics of effective autonomous teams. Therefore the dimensions of autonomous teams were: regulating capacity, a joint responsibility and a fixed group.

The indicators of the dimensions were also based on the theory of Van Amelsvoort and Scholtes (1994). Therefore, the indicators for the dimension ‘(A) regulating capacity’ can be divided into; (A.1) ability to plan the production process without supervision, (A.2) ability to improve processes and work methods without supervision and (A.3) ability to solve daily problems without supervision (Van Amelsvoort and Scholtes, 1994). The data, which was collected with these three indicators, allowed the researcher to determine the level of regulating capacity, like described in section 2.2.3. The indicator for the dimension ‘(B) joint responsibility for tasks and the production process’ was based on the theory of Van Amelsvoort and Scholtes (1994, p. 11). When the authors speak about shared responsibility, they mean that the collective is more valuable than the individuals. If a certain task is restrained with consequences, it means that someone can be held responsible for the task. Therefore, the indicator for ‘shared responsibility’ was: (B.1) shared consequences. The indicator for ‘(C) fixed group’ was based on common sense: (C.1) circulation of teams.

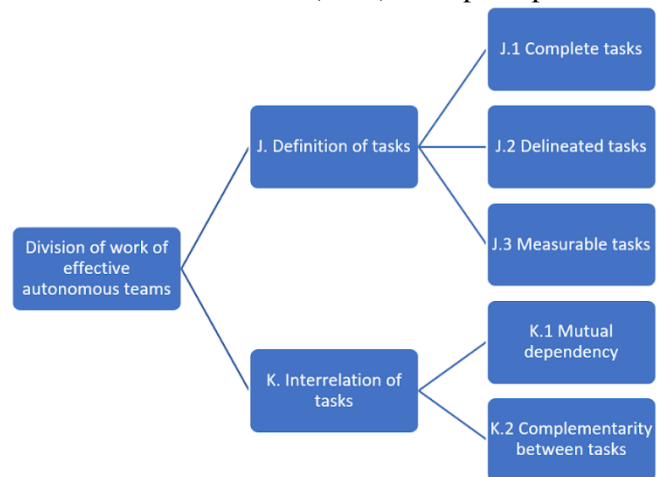


Operationalization effective autonomous teams

Operationalization of Division of Work of effective autonomous teams

The operational definition of Division of Work of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: how the tasks in the autonomous teams at Area 1 of the Packaging department of Heineken Den Bosch are defined and related to each other. The dimensions of the Division of Work of effective autonomous teams is based on the operational definition. Therefore, the dimension of Division of Work are; definition of tasks and interrelation of the tasks.

In order to determine the indicators of the dimensions, the explanation of the relation between effective autonomous teams and its Division of Work can be helpful. The indicators for the dimension ‘(J) definition of tasks’ were based on the first design principle of Van Amelsvoort and Scholtes (1994). The first design principle describes the definition of a task as tasks which are complete (the output of the task is visible in the whole organization), delineated (the task has clear limits) and measurable (the task can easily be evaluated). Therefore, the indicators are; (J.1) complete tasks, (J.2) delineated tasks and (J.3) measurable tasks. The indicator of the dimension ‘(K) interrelation of tasks’ is based on the third design principle of Van Amelsvoort and Scholtes (1994). This principle describes that tasks within the team should have a certain amount of mutual dependency and to be complementary. Therefore, the indicators of this dimension are (K.1) mutual dependency and (K.2) complementarity between tasks.



Operationalization of Division of Work of effective autonomous teams

Operationalization of HR of effective autonomous teams

The operational definition of Division of Work of effective autonomous teams was based on the theoretical definition. Therefore, the operational definition was: Knowledgeable, skillful and motivated operators in the teams at Area 1 of the Packaging department of Heineken who are formed by recruitment & hiring practices of operators, training practices, compensation systems, performance management, team leaders and the climate & culture. The operationalization of HR is based on the operational definition. Therefore the dimensions of HR are; recruitment & hiring, training, compensation, performance management, team leaders and climate & culture, because the practices can be adjusted to have knowledgeable, skillful and motivated operators.

The indicators of the dimensions were based on the best HR practices for effective autonomous teams by Salas et al. (2005). The indicators for the dimension ‘(D) recruitment & hiring’ were: (D.1) seek personnel with a collective orientation and (D.2) involve team members during the selection process. Seeking personnel with a collective orientation referred to the recruitment of appropriate people to work in a team. An important characteristic for the selecting of collective personnel was the willingness to work closely with others (Salas et al., 2005, p. 138). Moreover, this indicator aims at the selection of team members who are self-reliant (“*zelfredzaam*”), since this is an important skill

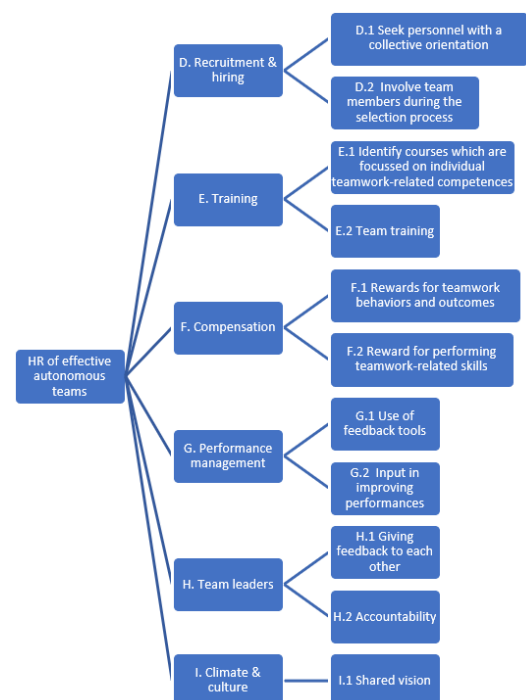
according to Heineken (Appendix 1). The second indicator (D.2) refers to the right selection of new employees. By being able to participate in the selection process, current team members could decide who would fit their team the best (Salas et al., 2005, p. 138).

The indicators for the dimension ‘(E) training’ were: (E.1) identify courses which are focussed on individual teamwork-related competences and (E.2) team training. The first indicator (E.1) means that the individual skills, related to teamwork like adaptability, communication and team leadership, were being improved via training methods (Salas et al., 2005, p. 138). This also contributed to achieving the goals of the group. Team training refers to the improvement of skills as a team and was aimed at the improvement of knowledge, skills and attitudes (Salas et al., 2005, p. 139).

The indicators for the dimension ‘(F) compensation’ were: (F.1) rewards for teamwork behaviours and outcomes (F.2) and rewards for performing teamwork-related skills. Rewards for teamwork behaviours and outcomes referred to rewards for the whole team and were aimed to encourage collaboration within the team (Salas et al., 2005, p. 139). The reward for performing teamwork-related skills are individual and formed an incentive for team members to improve themselves which is beneficial for the team. Both reward systems can concern cash and non-cash incentives to encourage collaborative behaviours (Salas et al., 2005, p. 137).

The indicators for the dimension ‘(G) performance management’ were: (G.1) use of feedback tools and (G.2) input in improving performances. (G.1) Feedback tools were used in order to generate some input of team members about the performance of the team (Salas et al., 2005, p. 137). These feedback tools could discover improvement possibilities. (G.2) Input in improving performances referred to the input of a team to improve the performances of a team (Salas et al., 2005, p. 137). The indicators for the dimension ‘(H) team leaders’ were: (H.1) giving feedback to each other and (H.2) accountability. (H.1) Giving feedback to each other referred to feedback on an informal basis. Moreover this indicator entailed that the team members were able and dared to address feedback to each other (Salas et al., 2005, p. 137). (H.2)

Accountability referred to the fact that the team members were held accountable and responsible for developing their team (Salas et al., 2005, p. 137).

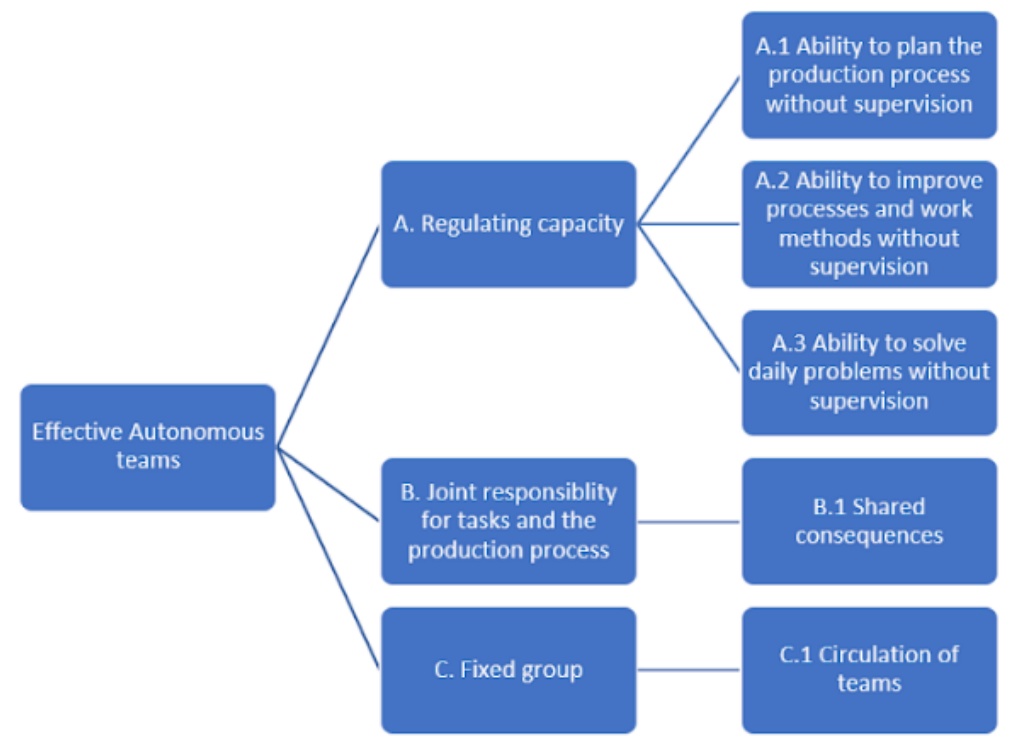


Operationalization of HR of effective autonomous teams

The indicator for the dimension for '(I) climate & culture' was: (I.1) shared vision. This indicator referred to shared vision within teams. An example of a shared vision is that team members who are willing to collaborate are valued more than team members who prefer to work individually (Salas et al., 2005).

If the practices are designed in line with the desired situation, these will result in knowledgeable, skillful and motivated operators who are suitable to work in autonomous teams.

Items Effective autonomous teams



1. Zijn de teamsamenstellingen vastgelegd of rouleren deze? Uit hoeveel personen bestaat een team? (C.1)
2. In hoeverre heeft het team de mogelijkheid om het productieproces te plannen, zonder toestemming te moeten vragen aan leidinggevenden of ondersteunende afdelingen? (A.1)
3. In hoeverre heeft het team de mogelijkheid om het productieproces en werkmethode aan te passen/verbeteren, zonder toestemming te moeten vragen aan leidinggevenden of ondersteunende afdelingen? (A.2)
4. In hoeverre heeft het team de mogelijkheid om dagelijkse problemen op te lossen, zonder toestemming of afhankelijkheid van leidinggevenden of ondersteunende afdelingen? (A.3)
5. Wanneer er zich een probleem voordoet tijdens het productieproces en/of het uitvoeren van een taak, wie wordt er verantwoordelijk gehouden voor de consequenties? (B.1)(H.2)

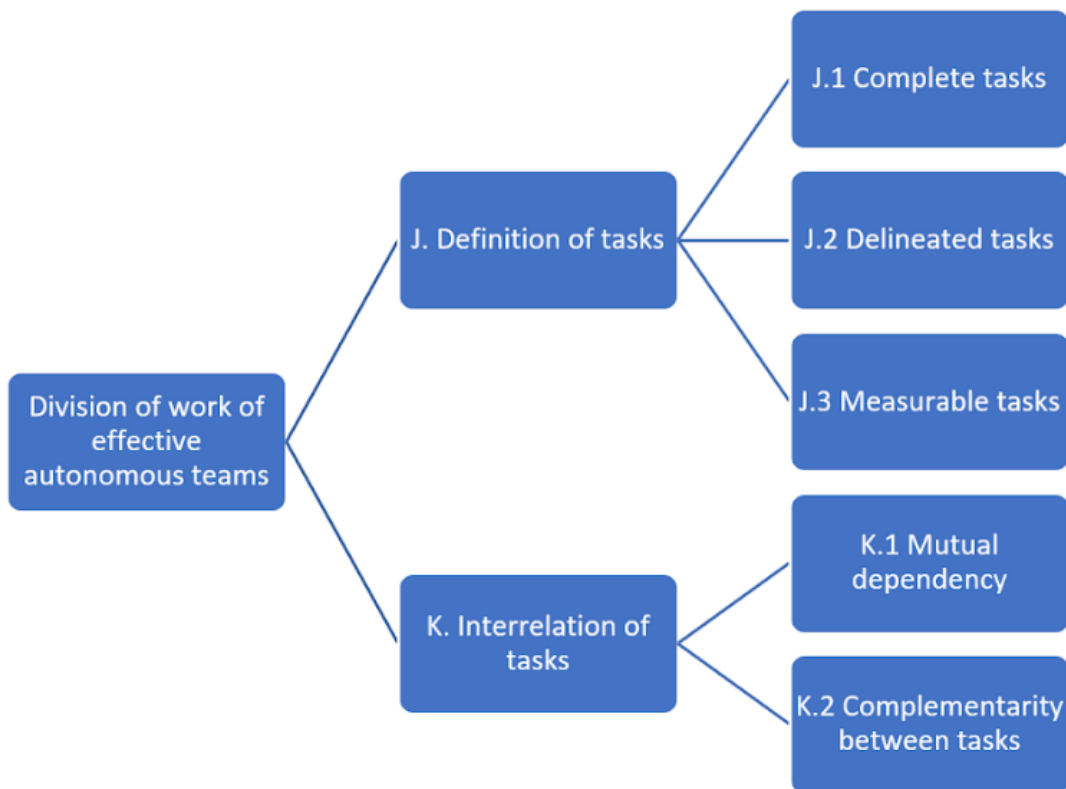
Items HR of effective autonomous teams



5. Wanneer er zich een probleem voordoet tijdens het productieproces en/of het uitvoeren van een taak, wie wordt er verantwoordelijk gehouden voor de consequenties? (B.1)(H.2)
6. Is er een bepaalde wervingsprocedure voor werknemers die gaan werken in autonome teams? Zo ja, in hoeverre wordt er bij deze procedure gericht op aspecten als 'het team staat voor op' en 'zelfredzaamheid'? Bezit het team operators die het teambelang voorop stellen? Waar merk je dat uit? (D.1)
7. Hoe worden de leden van het autonome team betrokken bij de keuze voor nieuwe teamleden? (D.2)
8. Wat zijn de mogelijkheden voor individuele trainingen die ingaan op vaardigheden die nodig zijn binnen een team (denk aan aanpasbaarheid, communicatie en teamleiderschap?) (E.1)
9. In hoeverre zijn er gezamenlijke trainingen die zijn gericht op het verbeteren van de vaardigheden van een team, gericht op kennis, vaardigheden en houdingen? (E.2)
10. In hoeverre is er een beloningssysteem dat gericht is op de resultaten en de manier van werken van het team? (F.1) En in hoeverre geldt dit voor individuele beloningen? (F.2)
11. Hoe wordt er feedback gegeven aan elkaar? (H.1) Wordt er gebruik gemaakt van een bepaald systeem, zoals 360 graden feedback? (G.1)
12. Wat wordt er als team gedaan om gezamenlijk beter te kunnen presteren? (G.2)

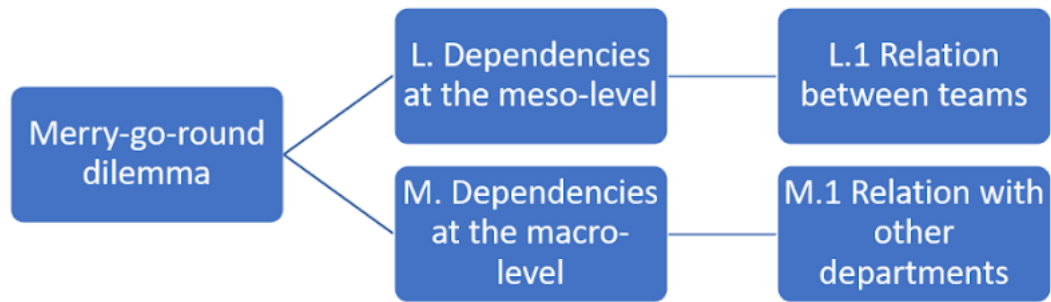
13. Is er een gedeelde visie binnen het team over hoe de taak uitgevoerd dient te worden?
Een voorbeeld zou kunnen zijn dat samenwerken meer gewaardeerd wordt dan individueel werken. (I.1)

Items Division of work of effective autonomous teams



14. Is het team in staat om een compleet product te produceren of is het slechts een onderdeel van een groter geheel? Anders gezegd, ziet u de bijdrage van het team terug in de organisatie? (J.1)
15. In welke mate zijn de taken afgebakend en hebben ze een duidelijk begin en eind? Hoe wordt dit bekend gemaakt? (J.2) Stel u staat bij de pasteur, kunt u dan ook taken van bijvoorbeeld inpakken overnemen? Is dat ook beschreven in uw taakomschrijving, dat u taken van iemand anders moet kunnen overnemen? (J.2)
16. Worden de taken beoordeeld? Zo ja, hoe wordt dat gedaan? (J.3)
17. In welke mate zijn de taken binnen het team wederzijds van elkaar afhankelijk? (K.1) Heeft u de ander echt nodig om de taak uit te voeren of kunt u de taak eigenlijk ook alleen uitvoeren? (K.2)

Items Merry-go-round dilemma



18. In welke mate is uw team in staat om dezelfde activiteiten uit te voeren als de vorige shift.
(G.2) (L.1)
19. Komt u wel eens in de problemen omdat iemand uit uw netwerk niet op tijd, niet volledig of niet op de goede manier doet wat die zou moeten doen om u het werk mogelijk te maken? En zijn deze problemen te relateren aan ondersteunende activiteiten? Ondersteunende activiteiten zijn activiteiten die zorgen dat jullie jullie werk kunnen doen (zoals HRM of onderhoud) (M.1)

Appendix 3: Interview protocol

The interviews with the operators, line manager, operational manager and aerial manager are semi-structured. This entails that the questions are already formulated and placed in a specific order (Bleijenbergh, 2015). This assures the researcher that every respondent is asked the same questions. Preferably, the respondents will be interviewed at work in order to make them feel more comfortable. If this tends to be impossible due to personal reasons or circumstances related to the recent coronavirus, the interviews will preferably be held via Skype and otherwise over the phone. When conducting face to face interviews, this will be done in a quiet and private room for the purpose to minimize the possibilities of disturbances. At the beginning of every interview, the respondent will be asked if the researcher has permission to record the interview. Moreover, the respondent will be told to withdraw from the conversation whenever wanted. When an interview is disturbed, the researcher will pause the recording and continue when the disturbance is over. For example, when a phone rings or a colleague enters the room, the audio recorder will be stopped until the disturbance is gone.

Every question is followed by a number between brackets. This number refers to the indicators related to the question. The number of each indicator can be found in the operationalizations of autonomous teams, HR and Division of Work. Furthermore, some questions are followed by an additional question or phrase, these are options to say to respondents for clarification purposes. Questions 18 and 19 are not followed by a number between brackets. The reason for this is because these questions do not directly link to the operationalization of one of the variables and are asked in order to determine whether there is a merry-go-round dilemma. The explanation behind these questions can be found in section 3.5.1.

The interviews mainly consist of open questions. When a yes-or-no-question is asked, a follow-up question will be asked. By doing so, the researcher expects to create a clear understanding of how the respondent perceives the situation. Furthermore, a pleasant atmosphere is important during the interview. This can be realized by giving the respondent the opportunity to speak freely and to, if appropriate, make a joke. Moreover, asking follow-up questions is not only for the purpose of creating a better understanding, but also to give the respondent the feeling that the researcher is interested and really listens. In the introduction of the interview, the researcher mentions researching autonomous teams. It is a deliberate choice to not mention 'effective' autonomous teams in order to avoid socially desired answers. Furthermore, the researchers asked the respondents whether they have had experience with working in autonomous teams. The reason for this additional question is that, when the respondent responds with "yes", the researcher would expect that the respondent has the required competences.

When the interview is finished, the respondent will receive a little gift as a sign of gratitude for the time and effort of the respondent to participate in this research. Finally, the respondent will be told that there is the possibility to see the verbatim transcript and/or the results of this research. Moreover, the respondent is given the mail address of the researcher in case the respondent came up with questions or wants to know something.

Introductie:

Beste meneer/mevrouw,

Bedankt dat u wilt deelnemen aan dit onderzoek. Ik ben Didier Verschuren, een master Organisational Design & Development student aan de Radboud Universiteit te Nijmegen en doe onderzoek naar autonome teams. Het interview bestaat uit 18 vragen die gaan over de vormgeving van de autonome teams en hoe de human resources en de manier van taakverdeling dit ondersteunt. Naast dit interview zullen er nog 7 collega's van u worden geïnterviewd. Het interview duurt naar verwachting 60 minuten. De verkregen data wordt in anonimiteit verwerkt en niet gedeeld met derden. U heeft toestemming om het gesprek op elk moment te onderbreken. Ik vraag uw toestemming om het gesprek op te nemen zodat er een verbatim transcript van dit gesprek kan worden gemaakt. Indien gewenst heeft u de mogelijkheid om het verbatim transcript van dit interview in te zien. Als er verder geen vragen zijn, dan kan het interview worden gestart.

Inleidende vragen:

- Hoe lang bent u werkzaam bij Heineken?
- Wat is uw functie binnen de organisatie? Waaruit bestaan uw werkzaamheden?
- Heeft u eerder in een autonoom team gewerkt?

Interviewvragen:

De volgende vragen gaan in op de kenmerken van autonome teams op Rayon 1.

1. Zijn de teamsamenstellingen vastgelegd of rouleren deze? Uit hoeveel personen bestaat een team? (C.1)
2. In hoeverre heeft het team de mogelijkheid om het productieproces te plannen, zonder toestemming te moeten vragen aan leidinggevenden of ondersteunende afdelingen? (A.1)
3. In hoeverre heeft het team de mogelijkheid om het productieproces en werkmethoden aan te passen/verbeteren, zonder toestemming te moeten vragen aan leidinggevenden of ondersteunende afdelingen? (A.2)
4. In hoeverre heeft het team de mogelijkheid om dagelijkse problemen op te lossen, zonder toestemming of afhankelijkheid van leidinggevenden of ondersteunende afdelingen? (A.3) (J.2)
5. Wanneer er zich een probleem voordoet tijdens het productieproces en/of het uitvoeren van een taak, wie wordt er verantwoordelijk gehouden voor de consequenties? (B.1)(H.2)

De volgende vragen gaan in op de kenmerken van de Human Resources van de autonome teams. HR zijn mensen met kennis, vaardigheden en motivatie wat wordt verkregen door het uitvoeren van taken dat gericht is op het werven en aannemen van werknemers, trainingen aanbiedt, betalingssystemen bepaalt, performance controleert, teamleiders toewijst en een aangenaam werkklimaat en cultuur waarborgt.

6. Is er een bepaalde wervingsprocedure voor werknemers die gaan werken in autonome teams? Zo ja, in hoeverre wordt er bij deze procedure gericht op aspecten als 'het team staat voor op'

en ‘zelfredzaamheid’? Bezit het team operators die het teambelang voorop stellen? Waar merk je dat uit? (D.1)

7. Hoe worden de leden van het autonome team betrokken bij de keuze voor nieuwe teamleden? (D.2)
8. Wat zijn de mogelijkheden van individuele trainingen die ingaan op vaardigheden die nodig zijn binnen een team (denk aan aanpasbaarheid, communicatie en teamleiderschap?) (E.1)
9. In hoeverre zijn er gezamenlijke trainingen die zijn gericht op het verbeteren van de vaardigheden van een team, gericht op kennis, vaardigheden en houdingen? (E.2)
10. In hoeverre is er een beloningssysteem dat gericht is op de resultaten en de manier van werken van het team? (F.1) En in hoeverre geldt dit voor individuele beloningen? (F.2)
11. Hoe wordt er feedback gegeven aan elkaar? (H.1) Wordt er gebruik gemaakt van een bepaald systeem, zoals 360 graden feedback? (G.1)
12. Wat wordt er als team gedaan om gezamenlijk beter te kunnen presteren? (G.2)
13. Is er een gedeelde visie binnen het team over hoe de taak uitgevoerd dient te worden? Een voorbeeld zou kunnen zijn dat samenwerken meer gewaardeerd wordt dan individueel werken. (I.1)

De volgende vragen gaan in op de manier waarop taken zijn gedefinieerd en aan elkaar relateren.

14. Is het team in staat om een compleet product te produceren of is het slechts onderdeel van een geheel? Anders gezegd, ziet u de bijdrage van het team terug in de organisatie? (J.1)
15. In welke mate zijn de taken afgebakend en hebben ze een duidelijk begin en eind? (J.2). Hoe wordt dit bekend gemaakt? Kan ieder lid elkaars taken uitvoeren? (J.3) Stel u staat bij de pasteur, kunt u dan ook taken van bijvoorbeeld inpakken overnemen? Is dat ook beschreven in uw taakomschrijving, dat u taken van iemand anders moet kunnen overnemen? (J.2)
16. Worden de taken beoordeeld? Zo ja, hoe wordt dat gedaan? (J.3).
17. In welke mate zijn de taken binnen het team wederzijds van elkaar afhankelijk? (K.1) Hebt u de ander echt nodig om de taak uit te voeren of kunt u de taak eigenlijk ook alleen uitvoeren? (K.2)

Hier volgen nog enkele algemene vragen. [De volgende vragen gaan in op het draaimolen dilemma]

18. In welke mate is uw team in staat om dezelfde activiteiten uit te voeren als de vorige shift. (G.2) (L.1)
19. Komt u wel eens in de problemen omdat iemand uit uw netwerk niet op tijd, niet volledig of niet op de goede manier doet wat die zou moeten doen om u het werk mogelijk te maken? En zijn deze problemen te relateren aan ondersteunende activiteiten? Ondersteunende activiteiten zijn activiteiten die zorgen dat jullie jullie werk kunnen doen (zoals HRM of onderhoud) (M.1)

Afsluitende vraag:

20. Hoe ervaart u het werken in autonome teams? Wat zou volgens u beter kunnen?

Afsluiting:

Dit is het einde van het interview. Heeft u naar aanleiding van het interview nog vragen of aanvullingen? Zijn er mogelijk zaken niet besproken die u liever wel had willen bespreken? Zoals eerder aangegeven worden alle gegevens in anonimiteit

verwerkt en niet gedeeld met derden. Dit houdt in dat de uitkomst van het onderzoek uitsluitend door mij, de onderzoeksbegeleider en door u, indien gewenst, worden bekeken. Mocht u achteraf nog met vragen of opmerkingen zitten die mogelijk relevant zijn voor het onderzoek, dan kunt u mij contacteren via het volgende mailadres: didierschuren@hotmail.com. Ik wil u nogmaals hartelijk danken voor uw tijd en medewerking. Als bedankje heb ik nog een kleinigheidje voor u.

Appendix 4: Code schemes

The data collected from interviews and documents were analysed and structured via a ‘code tree’ which consists of pattern, thematic and descriptive codes. Pattern codes represent the central concept, in this case: autonomous teams, Human Resource and Division of Work. The thematic codes are the dimensions of the operationalized concept. Finally, the descriptive codes are assigned to certain phrases in the documents or verbatim transcripts. In the verbatim transcripts and documents, the codes of the descriptive codes are noted behind the relevant phrase.

Code scheme Effective Autonomous teams

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Effective autonomous teams	A. Regulating capacity	(A.1 Ability to plan the production process without supervision)
		(A.2 Ability to improve processes and work methods without supervision)
		(A.3 Ability to solve daily problems without supervision)
	B. Joint responsibility for tasks and the production process	(B.1 Shared consequences)
	C. Fixed group	(C.1 Circulation of teams)

Code scheme of Human Resource of effective autonomous teams

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Human Resources of effective autonomous teams	D. Recruitment & hiring	(D.1 Seek personnel with a collective orientation)
		(D.2 Involve team members during the selection process)
	E. Training	(E.1 Identify courses which are focussed on individual teamwork-related competences)
		(E.2 Team training)
	F. Compensation	(F.1 Rewards for teamwork behaviours and outcomes)
		(F. 2 Reward for performing teamwork-related skills)
	G. Performance management	(G.1 Use of feedback tools)
		(G.2 Input in improving performances)
	H. Team leaders	(H.1 Giving feedback to each other)
		(H.2 Accountability)
	I. Climate & culture	(I.1 Shared vision)

Code scheme Division of Work of effective autonomous teams of effective autonomous teams

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Division of work of effective autonomous teams	J. Definition of tasks	(J.1 Complete tasks)
		(J.2 Delineated tasks)
		(J.3 Measurable tasks)
	K. Interrelation of tasks	(K.1 Mutual dependency)
		(K.2 Complementarity between tasks)

Code scheme merry-go-round dilemma

<u>Pattern code</u>	<u>Thematic code</u>	<u>Descriptive code</u>
Merry-go-round dilemma	L. Dependencies at the meso-level	(L.1 Relation between teams)
	M. Dependencies at the macro-level	(M.1 Relation with other departments)

Final templates

Code scheme Effective Autonomous teams – Final template

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Effective autonomous teams	A. Regulating capacity	(A.1 Ability to plan the production process without supervision)
		(A.2 Ability to improve processes and work methods without supervision)

		(A.3 Ability to solve daily problems without supervision)
	B. Joint responsibility for tasks and the production process	(B.1 Shared consequences)
	C. Fixed group	(C.1 Circulation of teams)

Code scheme Human Resources of effective autonomous teams of effective autonomous teams

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Human Resources of effective autonomous teams	D. Recruitment & hiring	(D.1 Seek personnel with a collective orientation)
		(D.2 Involve team members during the selection process)
	E. Training	(E.1 Identify individual teamwork-related competences)
		(E.2 Team training)
	F. Compensation	(F.1 Rewards for teamwork behaviours and outcomes)
		(F. 2 Reward for performing teamwork-related skills)
	G. Performance management	(G.1 Use of feedback tools)
		(G.2 Input in improving performances)

	H. Team leaders	(H.1 Giving feedback to each other)
		(H.2 Accountability)
	I. Climate & culture	(I.1 Shared vision)

Code scheme Division of Work of effective autonomous teams of effective autonomous teams

<u>Pattern code</u>	<u>Thematic codes</u>	<u>Descriptive codes</u>
Division of work of effective autonomous teams	J. Definition of tasks	(J.1 Complete tasks)
		(J.2 Delineated tasks)
		(J.3 Measurable tasks)
	K. Interrelation of tasks	(K.1 Mutual dependency)
		(K.2 Complementarity between tasks)

Code scheme merry-go-round dilemma

<u>Pattern code</u>	<u>Thematic code</u>	<u>Descriptive code</u>
Merry-go-round dilemma	L. Dependencies at the meso-level	(L.1 Relation between teams)
	M. Dependencies at the macro-level	(M.1 Relation with other departments)

Quotes regarding the relationship of autonomous teams and Division of Work and HR:

Relation between 'Recruitment & hiring (D)' and 'Regulating capacity (A)'	-
Relationship between 'Recruitment & hiring (D)' and 'Joint responsibility for tasks and the production process (B)'	-
Relation between 'Training (E)' and 'Joint responsibility for tasks and the production process (B)'	-
Relation between 'Compensation (F)' and 'Joint responsibility for tasks and the production process (B)'	-
Relation between 'Training (E)' and 'Regulating capacity (A)'	-
Relation between 'Interrelation between tasks (K)' and 'joint responsibility for tasks and production process (B)'	-
Relationship between 'Climate & culture (1)' and 'Joint responsibility for tasks and the production process (B)'	-
Relationship between 'Team leaders (H)' and 'Joint responsibility for tasks and the production process (B)'	-

Relationship between 'Complete tasks (J.1)' and 'Regulating capacity (A)'	-
Relationship between 'Team leaders (H)' and 'Joint responsibility for task and the production process (B)'	
Relation between 'Definition of tasks (J)' and 'Regulating capacity (A)'	
Relation between 'Interrelation of tasks (K)' and 'Joint responsibility for tasks and the production process (B)'	

Unidentifiable codes

Code: Intrinsic motivation	-
Code: Coaching	-
Code: Workplace	-
Code: Structuring the pilot	-