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TITTEL:
Sammenligning av hvordan medlemmer i virtuelle versus face-to-face team oppfatter sin jobb situasjon

ENGELSK TITTEL:
A comparision of employees' perceived job situation among team members in virtual versus face-to-face teams

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Abstract

The globalization and increased competition, in combination with pressure to quickly adapt and find good solutions in complex situations, has forced companies to change organizational structures. To organize in team, is seen as an instrument to get a more flat and flexible organization. Team is recommended as best practice HRM, and seen as a tool to create high performance organizations. Over the years, computer based technologies for communication has developed and the usage has increased, and as a consequence virtual teams have been widely used already for several years within a lot of companies. There might be several reasons to organize using virtual teams, compared to co-located or face-to-face teams. Reasons like utilizing team members sitting closer to customers or important markets, and finding people with the correct skills and competence despite geographical location more easily can be mentioned. The purpose of this study is to see if different team organizing, virtual and face-to-face, has an impact on the employees' perceived job situation. This is seen in the light of the company's selections of practices within best practice HRM, to create a high performance organization to operate in a global and complex market situation. Can the same HRM practices be applied to people working in these different type of team's, without significant change in the employees perceived job situation? Theoretical background is collected from strategic HRM and theory concerning employee motivation, and in addition theory around teams in general and virtual teams in particular. The research in this study is done within Wärtsilä, and seen in the light of the context in the company. Virtual and face-to-face teams are selected within two different business lines in the organization. Data is collected from all selected teams, and all team members' answers in the employee satisfaction survey MyVoice conducted in 2015. The data show that there are no significant differences between team members who are part of a virtual team or a face-to-face team for any of the variables or categories in this study. It can be concluded that implementation of HRM practices can be applied to people working in these different types of teams, without significant change in the employee's perceived job situation.

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Preface

This master thesis is written as part of the Executive MBA-study at Handelshøgskolen – University of Stavanger. The work with the thesis started in September, and it has been an amazing journey digging deeper into an interesting subject related to my daily work in Wärtsilä.

In this period, I have been in contact with managers as well as people from HR. Most of it done via the common virtual communication tools, like Skype and e-mail. Everyone has been open to share their knowledge, and provided me with valuable input and good discussions for this thesis. Thanks!

Thanks to my superviser, Aslaug Mikkelsen, for her patient guiding along the way. Thanks to Torunn for her valuable corrections, and to Jorunn for discussions in combination with walking and fresh air. Thanks to my friends and family, and Vegard and Helene in particular, for encouragement and support during these three years of study. Finally, to Robert and the PCS platform team: Thank you.

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1 Background

The traditional organisation is challenged. The world of today is compressed in time and room through the use of modern technology, with unpredictable changes and demands for quick response to external requests. The basic characteristics of the organisations, like how centralized they are, how formal and complicated they are, might have a direct influence on the ability of the business to react quickly in a changing environment. Organisations have developed from a situation with a hierarchic structure, where mostly top management were the ones to keep in contact with the "outer world", like important customers and vendors. Today's situation has developed towards a more flat organizational structure, put together as teams and networks of employees, partners, professional networking, vendors and customers. This development is also strengthened by higher educated and competent employees, who want to have a greater influence and more autonomy in their work (Mikkelsen, 2014d).

The development and use of modern technology continues to introduce new trends and work forms. Nowadays, the employees do not need to be an integrated and permanent part of a company's organizational structure to do a job. Some hypotheses are brought forward, when it comes to future ways of working. It is suggested that fewer people work within the same hours. By this, it gets less important at what time people are working, as long as the work gets done and cooperation and knowledge sharing works well. "Distance working" in all forms are increasing. The most important is how well the employees perform and deliver, not from where they are working. Virtual communication is increasing significally, and mobile ways of working will continue to increase both externally and internally in buildings. Trends are also moving towards a more increasing international and multi-language working life, and indicating that more employees will work across country boarders (Karlsen, 2015).
The Global Institute at McKinsey (2013) suggest some guidance for leaders, regarding what impact new technologies have for the growth and performance for organizations: "Business leaders and policy makers - and society at large - will confront change on many fronts: In the way businesses organize themselves, how jobs are defined and how we use technology to interact with the world and with each other" (McKinsey, 2013, p. 6). Among these new technologies are development of mobile internet and cloud technology. This might not only bring change in how companies and other organizations structure themselves, but is also said to bring new meaning to the anytime/ anywhere work style. Not to forget the generation of millennials that is now joining businesses, with technology dominating every aspect of their life.

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Will they prefer to communicate electronically at work, rather than face-to-face or even by telephone? Technology is said to often be a catalyst for intergenerational conflict in the workplace, and many millennials might feel held back by rigid or outdated working styles.

The globalization and increased competition, in combination with pressure to quickly adapt and find good solutions in complex situations, has led to a situation where several companies have experimented with new organizational structures. To organize in team, is seen as an instrument to get a more flat and flexible organization. Team is recommended as best practice HRM, and seen as a tool to create high performance organizations (Mikkelsen, 2014d). Creation of virtual teams can be considered as a response to challenges organizations have faced due to the increased globalization (Abbasnejad & Moud, 2012). By utilizing virtual teams, organization can take advantage of utilizing the most eligible employees without taking into consideration their geographical location (Hunsaker & Hunsaker, 2008). Taking into account the above mentioned future directions in the way of working, it can be suggested that to make remote working or working in virtual teams a successful way of working, will be even more important and vital for the organizations in the years to come. Despite the benefits using virtual teams from a business point of view, research related to virtual teams indicate several challenging factors in virtual versus face-to-face or co-located teams. The following four aspects can be seen as especially important for a virtual team's success: Team building, thrust, communication and leadership (Szewc, 2013). In particular will how to share knowledge internally, and between teams and team members, be of importance.

The purpose of this study is to see whether different team organizing, virtual or face-to-face, has an impact on employee's perceived job situation. The focus will be within areas seen as especially important for a virtual team's success. This study will be seen in the light of the companies' selection of practices within best practice HRM, to create a high performance organization to operate in a global and complex market situation. Can the same HRM practices be applied to people working in these different types of teams, without significant change in the employees' perceived job situation? One of the organizational choices made within Wärtsilä over the last years, is to organize in teams and also virtual teams. One reason for this choice is to utilize team members sitting more close to the customers, partners and stakeholders in strategic important markets and locations. Another reason is to utilize resources with high skills and the correct skills, not pending on geographical location of the employee.

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2 Theory

2.1 Strategy and Human Resource Management (HRM)

2.1.1 Strategy and HRM

Strategy is about building sustainable competitive advantage, that in turn creates above-average financial performance (Becker & Huselid, 2006). Organisational designers have to choose structures according to particular strategic challenges or contingencies they face. Strategies require organising, and this involves both structures that give people formally defined roles, responsibilities and lines of reporting. It also requires systems, to support and control people as they carry out structurally defined roles and responsibilities. If the organisation does not support the strategy, then even the cleverest strategy will fail because of poor implementation.

Strategic Human Resource Management (SHRM) is about strategic choices connected to organizing work and workforce in the business, and how some businesses are leading them more efficient than others (Boxall & Purcell, 2011). From this it is seen as important that the HRM strategies are vertically integrated with the overall strategy of the business. It is argued that the fit between the HR architecture and the strategic capabilities of an organisation, to contribute to its long-term survival or competitive advantage (Johnson, Whittington, Scholes, Angwin, & Regnèr, 2014) and the business processes that implement strategy, is the basis of HR's contribution to competitive advantage (Becker & Huselid, 2006).

The goal for the Human Resource Management (HRM) in a company, is to contribute to performance on two levels: The level of each individual and the company level. Each individual can reach their goals, without the company reaching their business targets. The company is on the other hand fully pending on the performance of the employees, and can only reach their business targets through the employee's individual and collective performance (Mikkelsen & Laudal, 2014).

On the individual level, manager's use work policy and employment policy and practice to affect the employee's ability (A), motivation (M) and their opportunity (O) to participate and perform. Together, these three dimensions are seen as the driving forces behind individual performance, and is called the AMO-Model (Campbell, McCloy, Oppler, & Sager, 1993). The specific HRM practices included in high-performance HRM systems have varied across studies, but a commonality across practices in any high-performance approach is a focus on

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promoting workforce ability, motivation and opportunity to perform behaviours consistent with organizational goals (Combs, Liu, Hall, & Ketchen, 2006). Based on previous research in this area, a list of 15 HR practices reflecting a high-performance HR approach are collected by Kehoe and Wright (2013). As ability-enhancing practices**,** they collected practices like formal selection tests, structured interviews, hiring selectivity, high pay and training opportunities. Within motivation-enhancing practices**,** such as rewards based on individual and group performance outcomes, formal performance evaluation mechanisms and merit-based promotion systems are mentioned. Finally, as opportunity-enhancing practices, formal participation processes, regular communication and information sharing efforts, and autonomy in work-related decision-making are mentioned (Combs et al., 2006; Delery & Shaw, 2001; Huselid, 1995; Sun, Aryee, & Law, 2007; Way, 2002).

2.1.2 Best Practices HRM

Best practice HRM consists of a fixed determined bundle of HRM practices. It is argued that best practice within HRM is a universally valid high-performance work paradigm, where it is assumed that all businesses that are using this bundle of HRM practices will achieve better results than businesses that do not. Best practice HRM works after three hypotheses: Best practice is universal, all practices have to be included to maximise the effect and HRM-practices have to be integrated horizontally. Horizontal integration means that it is important that the selected HRM-practices are supporting each other, and not contradicting, to maximize the performance of the organisation. Among the frequently mentioned practices within best practice HRM, are organizing in team and information sharing. Also involvement of employees in decision making, incentive salary and competence development are among these practices (Mikkelsen, 2014a). Paauwe and Richardson (1997) show that HRM-Practices are implemented in a context. In a country, an industry or in a working group there are differences that can affect the choice of HRM-System and practice within the businesses, and the consequence of the chosen HRM-practices for the result of the business. With this, it is said that Paauwe and Richardson connect to a contextual and contingency perspective on HRM. Contextual and control variables in their model, organizational level e.g. age of the business, size, technology, capital intensity, amount of unionized employees and sector are mentioned. On individual level, it can be age, sex, educational level, nationality and job experience (Paauwe & Richardson, 1997).

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As a starting point, a HRM practice is decided to be implemented in a business as part of the business strategy. Figure 2 2.1 shows the people management-performance causal chain, which illustrates that the intended practice does not have a direct impact on the outcome, but is a part of a causal chain (Purcell & Hutchinson, 2007). The HRM practice is implemented by a manager with personnel responsibility, to contribute to achieving the business target. In the same way that a manager might implement the intended practice in different ways, also the employee perception of the practices might vary. How the employee perceive the practices, will be essential for the employee attitude like satisfaction, commitment and engagement. The same goes for employee behaviour, like the will to develop their competence and attitude towards task behaviour. As the last point of the model shows, it is in the end the behaviour of the employee that affect the unit level, like the team, or business outcomes (Mikkelsen, 2014a).

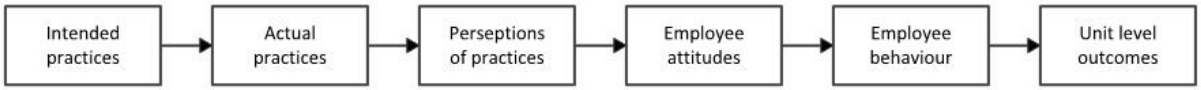

Figure 2.1: HRM-performance causal chain (Purcell & Hutchinson, 2007, p. 7)

Organizing in teams is a part of many management concepts. As already mentioned it is also part of the best practise within HRM, and a tool to create high performance organizations. The businesses of today are pushed to deliver quality quick and effective, and to be flexible when it comes to changes in demands from customers. Organizing in teams is seen as a flexible organizational structure. From a HRM point of view, the main reason behind organizing in teams is that the teams create a common engagement and commitment towards a common achievement (Mikkelsen, 2014a).

Given a bundle of HRM practices within a company, including organizing in teams, in a specific market and industry context, managers within the company will use these practices to affect the employee's ability, motivation and their opportunity to participate and perform

The research question in this thesis is: Does it matter how the company organizes these teams, as face-to-face teams or as virtual teams, when it comes to team members' perceived job situation?

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2.2 Motivation

According to Mitchell (1997), motivation can be described through the three words: Direction, intensity and perseverance. Highly motivated people make decisions and know what target they are aiming for when alternatives occur (direction). They use time and energy to get there (intensity), and manage to keep up with the activity until the target is reached (perseverance) (Mikkelsen, 2014b). Motivation is a complicated phenomenon, which is affected by both internal and external factors. Internal motivation comes from our psychological needs and internal drive for personal growth. An employee who is motivated by his/ her internal motivation, will work hard driven only by the pleasure of conducting tasks. Internal motivation is also named intrinsic motivation. External motivation might be connected to rewards, like high salary and bonuses, status and prestige, or it can also be given by e.g. positive attention and prise from manager and/ or colleagues. External motivation is also named extrinsic motivation. Motivation is therefore both dependant on the content of the job, the situation on the work place and personal characteristics. Knowledge about the different factors that can predict, explain and affect employee's motivation is very important for managers and HRM-staff. This knowledge is crucial to be able to achieve good results for the business. Lack of motivation can lead to e.g. sick leave, high turnover, low productivity and negative organisational behaviour. Lack of motivation can explain that the will to put effort into work is different among people (Mikkelsen, 2014b).

2.2.1 Self-determination theory (SDT)

One theory connected to motivation is called the self-determination theory (SDT). This theory has developed gradually over the last 40 years, and has become a major theory of human motivation. The SDT was initially developed by Edward L. Deci and Richard M. Ryan, and has been elaborated and refined with the help of many other scholars around the world. The theory was born out of an interest in the study of intrinsic motivation, defined as doing something of its own sake, out of interest and enjoyment (Gagne & Deci, 2014). This is seen as opposed to doing an activity to obtain an external goal, which is called extrinsic motivation. SDT focuses on the degree to which an individual's behaviour is self-motivated and self-determined (Deci & Ryan, 2002). In the beginning, research on SDT evolved from studies comparing intrinsic and extrinsic motives, and from increased understanding of the important role intrinsic motivation played in an individual's behaviour (Lepper, Greene, & Nisbett, 1973). SDT was formally introduced and accepted as a sound empirical theory from

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around 1985. From 2000 and onwards, research applying SDT to different areas in social psychology has increased considerably.

Different types of motivations have been described based on the degree they have been internalized. Internalization refers to the active attempt to transform an extrinsic motive into personally endorsed values and thus assimilate behavioural regulations that were originally external (Ryan, 1995). Human beings transform the values and behaviours they absorb from the environment into internal tools to regulate themselves – they internalize them – but only if they have adequate nutriments or support for doing so (Gagne & Deci, 2014).

Edward L. Deci and Richard M. Ryan expended on the early work differentiating between intrinsic and extrinsic motivation. They proposed three intrinsic needs involved in self-determination (Deci & Ryan, 1991, 1995). According to Deci and Ryan (2000), the three basic psychological needs for competence, autonomy and relatedness are currently considered necessary and sufficient to promote human growth and functioning. Also more recent research has shown that people need to feel both competent and autonomous to experience intrinsic motivation (Dysvik, Kuvaas, & Gagné, 2013). Deci and Vansteenkiste (2004) claim that there are three essential elements of the theory. First, that humans are inherently proactive with their potential and mastering their inner focuses, like drives and emotions. Second, that humans have inherent tendency towards growth development and integrated functioning. And last, that optimal development and actions are inherent in humans, but they do not happen automatically. It is claimed that humans need nurturing from the social environment to actualise the inherent potential. If this happens, there are positive consequences like e.g. well being and growth. But if not, there are negative consequences. SDT emphasises the growth of humans towards positive motivation. However, this is thwarted if the basic needs are not fulfilled.

SDT-driven research has examined reward structures, task structures, and interaction quality with key people in various contexts and has shown that they do influence the adoption of certain motivational styles. Translated to the work context, performance management and compensation systems, job design and management/ leadership should influence the quality of employees' work motivation (Gagne & Deci, 2014).

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Ryan, Koestner, and Deci (1991) reported that sometimes, people engage in seemingly intrinsically motivated behaviours when they are in fact ego-involved. Ego-involvement is an internal type of motivation in which people's feelings of worth are dependent on what they do or how they do it, so people feel pressured or controlled to do what would make them feel worthy. It was found that when people are intrinsically motivated their affect is positive, but when they are ego-involved positive affect is absent and there may even be feelings of pressure or tension. This research and earlier ones on ego-involvement (Plant & Ryan, 1985), showed that there might be more than two types of motivation. In addition to extrinsic and intrinsic motivation, there seems to be an ego-involved type of motivation. The ego-based motivation is not prodded by outside factors, such as reward and punishments, and although it is internally driven, it is not the same as intrinsic motivation. This has led to the complementing cognitive evaluating theory (CET) with a theory of organismic integration (OIT). Both CET and OIT are now under the umbrella of the SDT, along with four other mini- theories, like the causality orientation theory, basic psychological needs theory, goal contents theory and relationships motivation theory (Gagne & Deci, 2014).
Organismic integration theory relies heavily on the concept of internalization, defined as taking in values, behaviours, and beliefs and making them one's own (Ryan, 1995). Extrinsic motivation comes from external sources. Deci and Ryan (1985) introduced organismic integration theory (OIT) as a sub theory of SDT, to detail the different forms of extrinsic motivation and the contextual factors that either promote or hinder internalization and integration of the regulation for these behaviours.

Figure 2.2 (Ryan & Deci, 2000, p. 72), illustrates the OIT taxonomy of motivational types, arranged from left to right in terms of the degree to which the motivations emanate from the self or are self-determined. At the far left of the self-determination continuum is amotivation, which is the state of lacking intention to act. When people feel amotivated, they do not act at all or act without intent – they just go through the motions. Amotivation results from not valuing an activity (Ryan, 1995), not feeling competent to do it (Bandura, 1986), or not expecting it to yield a desired outcome (Seligman, 1975). To the right in figure 2.2 are five classifications of motivational behaviour. Although many theorists have threated motivation as a unitary concept, each of the categories identified within OIT describes theoretically, experientially, and functionally distinct types of motivation. At the far right of the continuum is the classic state of intrinsic motivation, the doing of an activity for its inherent satisfaction. It is highly autonomous and represents the prototypic instance of self-determination.

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Extrinsically motivated behaviours, by contrast, cover the continuum between amotivation and intrinsic motivation, varying in the extent to which their regulation is autonomous. OIT describes four different types of extrinsic motivation that often vary in terms of their relative autonomy. The least autonomous is called externally regulated behaviour. It is performed to satisfy an external demand or reward contingency. Individuals typically experience externally regulated behaviour as controlled or alienated, and their actions can be seen to have an externally pursued locus of causality (DeCharms, 1968). A second type of extrinsic motivation is labelled introjected regulation. Introjection involves taking in regulations to behaviour, but not fully accepting it as your own. It is a relatively controlled form of regulation in which behaviours are performed to avoid guilt or to attain ego enhancements such as pride. Deci and Ryan (1995) claim such behaviour normally represents regulation by contingent self-esteem, citing ego-involvement as a classic form of introjections (DeCharms, 1968). This is the kind of behaviour where people feel motivated to demonstrate ability, or avoid failure, in order to maintain feelings of worth. While this is internally driven, introjected behaviour has an external perceived locus of causality or not coming from one's self. Since the causality of the behaviour is perceived as external, the behaviour is considered nonself-determined. Regulation through identification, is a more autonomously driven form of extrinsic motivation. Identification reflects consciously valuing a behavioural goal or regulation, so that the action is accepted or owned as personally important. Finally, the most autonomous kind of extrinsic motivation is integrated regulation. This motivation occurs when regulations are fully assimilated to the self, which means they have been evaluated and brought into congruence with one's other values and needs. Because of this, integrated motivation share qualities with intrinsic motivation, but are still classified as extrinsic because the goals trying to be achieved are for several reasons extrinsic to the self, rather than inherent enjoyment or interest in the task. Extrinsically motivated behaviours can be integrated into self. OIT proposes that internalization is likely to occur when there is a sense of relatedness.

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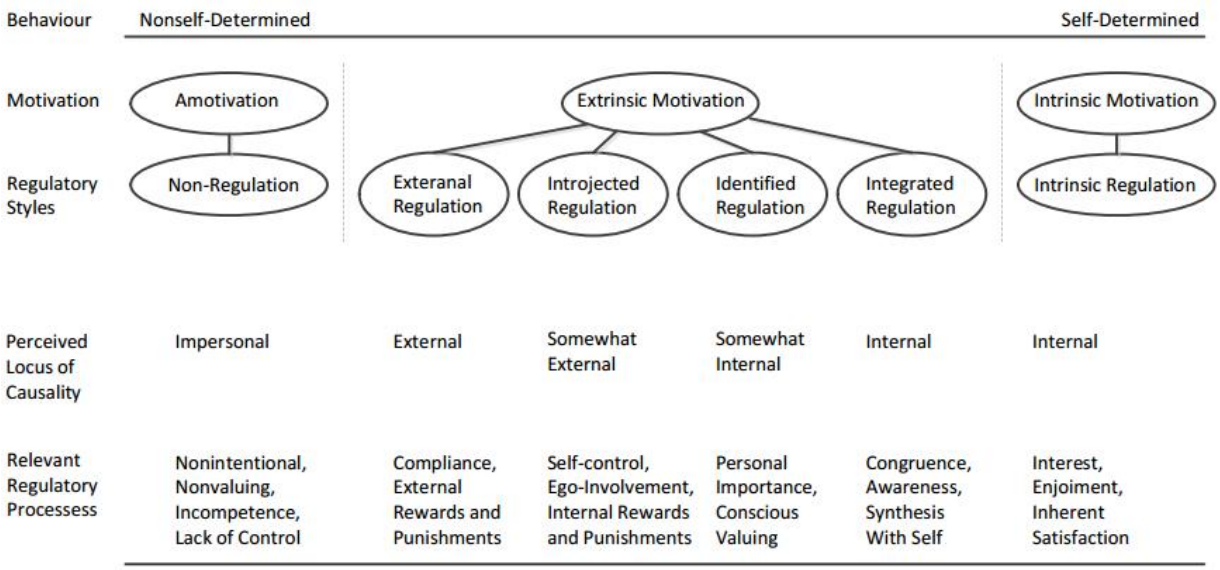

Figure 1.2: The self-determination continuum, showing types of motivation with their regulatory styles, loci of causality and corresponding processes (Ryan & Deci, 2000, p. 72)

There are two ways in which internalization can happen. If the context is pressuring and controlling, people are likely to introject a value of regulation and use it to measure their own worth, which is ego-involvement. On the other hand, if the context in which the nourishment is given makes people feel autonomous and agentic, they are likely to identify with its personal value for themselves and then integrate it into their core self-regulatory system, which in SDT is labelled the "self". This means that extrinsic motivation – the doing of an action that is not interesting and enjoyable to get a separate consequence – can be internalized to different degrees resulting in different types of extrinsic motivation that, when enacted, would vary in their degree of autonomy (Gagne & Deci, 2014). Through their examination of these processes in schoolchildren who were asked to do their homework, Ryan and Connell (1989) found evidence for two other types of motivation. The first is called introjection, which is a partial internalization that involves doing something for ego reasons, to feel worthy or avoid shame. The second is called identification, which is a fuller internalization that involves doing something out of personal values of self-selected goals.

2.2.2 Work design and work redesign – Job Characteristic Theory (JCT)

Work design is about what requirements needs to be meet in the good job, and the theories within work design are based on the motivation theories (Mikkelsen, 2014c). Work design is described as a specification of content and methods used in a job, so that the requirements to the work is meet and covers the needs of both the employee and the employers side (Wall & Clegg, 1998). Via work design, the business consciously or unconsciously is selecting how

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the tasks are combined to create jobs, and what methods are used to conduct the tasks. This might also include decisions regarding who is going to work together, how closely the work is monitored and controlled, and due to this also how much freedom each employee has in his/ her work. These decisions can have a big influence on the employee's health and well-being (Mikkelsen, 2014c).

In their research, Hackman and Oldham (1976) identified three psychological states that trigger internal motivation while working on a task: Experienced meaningfulness of the work, experienced responsibility for outcomes of the work and knowledge of the actual results of the work activities. They have also identified five aspects of work tasks that influence these three psychological states, and by that also influence the degree of internal motivation. The job is very likely to be seen a meaningful, if it requires a variety of different activities in carrying out the work and involves the use of a different skills and talents of the person (skill variety). Also if the job can be followed from beginning to end with a visible outcome (task identity). In addition, if the job can be seen to have substantial impact on the lives or work of other people in the organization or external (task significance), it will very likely be seen as meaningful. A job that provides substantial freedom, independence and discretion to the individual in scheduling the work and how to carry it out (autonomy), will most likely release a feeling of experienced responsibility. A work designed in a way that the individual obtain direct and clear information about the results of the work done, and effectiveness of his/ her performance through feedback from work itself, result in experience to have the knowledge about the quality of his/ her work. Oldham and Hackman (2010) summarizes that the essence of JCT is that the presence of certain attributes of jobs increase the probability that individuals will find the work meaningful, will experience responsibility for work outcomes, and will have trustworthy knowledge of the results of their work. Employees that have knowledge and skills needed to do the job well, and who value opportunities for growth and learning, will be internally motivated to perform such jobs. Over time this should result in greater overall job satisfaction and higher quality work outcomes.

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Figure 2.3 shows the job characteristica model of work motivation (Hackman & Oldham, 1976, p. 256):

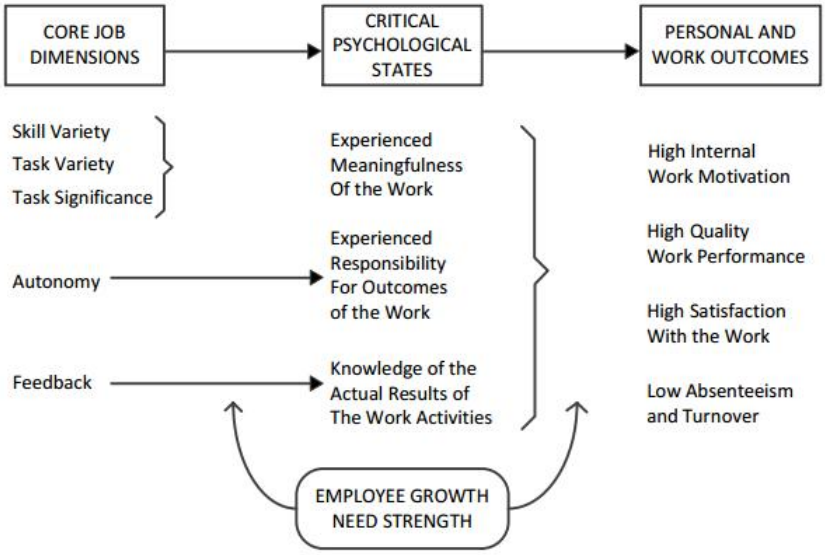

Figure 2.3: Job characteristica model of work motivation (Hackman & Oldham, 1976, p. 256)

In a criticism of their own theory, Oldham and Hackman (2010) highlights that they were wrong when it comes some points and in some assumptions made regarding future development of work life. They are stating that the job characteristics are very different these days, compared to when they were doing their research on job design. At that time, organizational work was generally organized as a linked set of specific jobs, each set up to be performed by individuals who most of the time worked independently of one another in bounded, stand-alone organizations. Those jobs were carefully analysed and defined, both to establish pay rates and to remove any ambiguity about what jobholders were supposed to do. Today this is different, and the very meaning of the concept of job is changing. Now individuals may communicate with each other in the virtual room, rather than come to the office. They may be responsible for balancing among several different activities and responsibilities, none of which is defined as their main job. They may work in temporary teams whose membership shift as work requirement change. They may be independent contractors, managing simultaneously temporary or semi-permanent relationships with multiple enterprises. They may serve on project teams, whose other members come from different organizations like e.g. suppliers, clients or organizational partners. They may be required to market their services within their own organizations, with no single boss, no home organizational unit, and no assurance of long-term employment.

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Nevertheless JCT emphasizes two social dimensions of work. That is to which degree the work requires cooperation with others, and degree of feedback from other persons. Oldham and Hackman (2010) are of the opinion that the social dimension was neglected in their model. In today's jobs, the social interaction is clearer and a more important characteristic of the job then it was in the past. As an example, it can be mentioned that global industry and technology related companies of today, are pending on teams and networks in close cooperation with customers, vendors and other stakeholders. This is important if they want to keep pace in the rapidly changing environment and to be able to develop their products and business for the future. As mentioned, even in non-service jobs, workers activities are now typically involving considerable interaction with co-workers and the clients of the work. They suggest that there are good reasons to expect that social dimensions of the work contribute to the motivation, performance and well-being of jobholders.

Use of virtual teams within the organization gives the company the possiblility to utilize team members in strategically important areas. It might be suggested that these team members' activities involve considerable interaction with co-workers, customers and important partners and stakeholders.

Hypothesis 1: Virtual team members will have a higher score on the customer orientation index then team members in face-to-face teams.

Oldham and Hackman (2010) find support in research done by Humphrey, Nahrgang, and Morgeson (2007), who suggests additional social dimensions that may contribute to employee motivation and well-being – specifically, interaction outside the organization, social support, initiated interdependence, and received interdependence. In a meta-analysis, these authors examined the relative effects of four social characteristics. These are interdependence, feedback from others, social support and interaction outside the organization. It was checked on a variety of behavioural and attitudinal outcomes after, controlling for eight non-social job characteristics. Examples are mentioned to be job complexity, information processing requirements, and autonomy. Results showed that the social characteristics contributed to subjective performance assessments, turnover intentions, and satisfaction beyond the effects of the eight non-social job properties.

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Oldham and Hackman criticism of their own theory, is also in line with the research done by Grant (2007) regarding the relationship between relational design of jobs and prosocial behaviour. It is suggested that employees often care about making a positive difference in other people's lives. In order to motivate employees, many organizations define their missions in terms of making a difference (Margolis & Walsh, 2001; Thompson & Bunderson, 2003). Through a theoretical review, Grant shows how the task significance and the employees contact with those who benefit from the tasks performed, like customers, patients, students and clients, can increase the employee's motivation and achievements. Grants point, is that design of jobs that contains contact with users, will strengthen the prosocial behaviour and motivation.

Use of virtual teams within the organization gives the company the possiblility to utilize team members as members in networks and clusters, committing to long-term relationships with suppliers, engineering companies, and university partners. These can be formed to further extend the company's know-how, skills and capabilities, and might at the same time increase employees and team member's motivation.

Hypothesis 2: Virtual teams will rate motivation and satisfaction higher then face-to-face team members.

Further job characteristics have become salient as a result of changes in work organization. For example, the rise of dual working parents highlights the need to consider autonomy over working hours; the growth in service work identifies the need to consider emotional job demands; the rise of individuals working from home highlights the role of social contact during work; and change in career structures bring to the fore opportunities for skill development (Parker, 2014).

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2.3 Team

A team can be defined in the following way: “A small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they are themselves mutually accountable” (Katzenback & Smith, 2009, p. 39).

There are four different types of team identified, which is described in figure 2.4 (Hackman & Wageman, 2004, p. 55). They are named surgical teams, coacting groups, face-to-face teams and distributed/ virtual teams.

Level of synchronicity	Responsibility/ accountability for outcomes	
	Individual members	Team As a Whole
Real-time interaction	"Surgical" teams	Face-to-face teams
Asynchronous interaction	Coacting groups	Virtual teams

Figure 2.4: Different types of team (Hackman & Wageman, 2004, p. 55)

For surgical teams, the responsibility and accountability lies primary with one person, the surgeon, but accomplishing that work requires coordinated interaction among all members in real time. Members of these teams provide the lead member, the person mainly responsible for the team product, with all the information and assistance that they can provide. A surgical team is appropriate for work that requires a high level of individual insight, expertise, and/or creativity but that is too large or complex to handle by one member working alone (Oldham & Hackman, 2010).

For the coacting groups, responsibility for the outcomes lies within the individual members. The work performed by each member does not depend upon what the others do, and the output of the group is simply the aggregation of members’ individual contributions. There is no particular reason for them to coordinate their activities in real time, since the members work independently. A great deal of organizational work is performed by sets of people who are called “teams”, but that really are coacting groups – formed, perhaps, by managers who hope that the benefits of teamwork can be obtained even as they continue to directly supervise the work of individual members. Coacting groups are appropriate only when there is little need for independent work by group members (Oldham & Hackman, 2010).

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In face-to-face teams, members are co-located and work together interdependently in real time to generate a product for which they are collectively accountable. They are appropriate for a wide variety of tasks, for which creating a high quality product requires coordinated contribution in real time from a diversity of members who have complementary expertise, experience and perspectives (Oldham & Hackman, 2010).

Members in distributed or virtual teams are collectively responsible and accountable for work products, but are neither co-located nor required to interact in real time. Instead, members use information and communication technologies to exchange observations, ideas and reactions at times at their own choosing. Since team members in theory can be selected from around the world, based on their unique competence, such teams can be larger, more diverse, and collectively more knowledgeable than face-to-face teams. They are especially useful when it is difficult for team members to meet regularly – perhaps because they are located in widely dispersed time zones, and the work does not require high levels of interdependence among them. When they function well, such teams can quickly and efficiently bring widely dispersed information and expertise to bear on the work (Oldham & Hackman, 2010).

In addition, two types of special teams are mentioned. The first is leadership teams, whose members all are significant leaders and who share responsibility for leading an entire organization or large organizational unit. As both the pace and scope of organizational leadership continue to expand, it is becoming increasingly evident that the “heroic” model of leadership, in which a single person is responsible and accountable for overall organizational performance, is decreasingly viable. More and more organizations, therefore, are forming teams to accomplish the work of leadership (Oldham & Hackman, 2010). Another special kind of team, also receiving increasing research attention these days, is colloquially referred to as sand dune team. This team is not in any traditional sense a work team at all. Instead, the team is a dynamic social system that has fluid rather than fixed composition and boundaries. Just as sand dunes change in number and shapes as wind change, teams of various sizes and kinds form and re-form within a larger organizational unit as external requirements and opportunities change. Sand dune teams appear to be especially well suited for managerial and professional work that does not lend itself to the formation of fixed teams with stable memberships. Such teams have great potential, especially in fast-changing environments (Oldham & Hackman, 2010).

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When to use teams, and when not to, Oldham and Hackman (2010) argue that using teams to accomplish work can bring a number of advantages. E.g. if a task is large in scope, it can be more meaningful to handle it as a team, than to carry out the work by any individual performer. Moreover, since the work is not parcelled out in small pieces among multiple performers, it is easier to establish direct two-way communication between the team and its clients. This can generate prompt and trustworthy knowledge of the performance results. Task that require members to take on a whole piece of work rather than just one small subtask also requires that teams be composed of diverse individuals who have different areas of expertise. That, in turn, can foster exchanges among members that result in a richer pool of knowledge than would be available from any one member (Oldham & Hackman, 2010)

For a team to perform well, there has to be a balance between the competences needed to fulfil the task well, and the relational needs of the team members. In the traditional line organization, it is the manager's responsibility to secure this balance. In teams it is the team members own responsibility that the tasks are fulfilled, targets are achieved and social needs are taken care of. The team as a whole is responsible to manage themselves and each other. This is called "distributed leadership" (Spillane, 2012), and means that the team members have to take the initiative to discuss, contribute with ideas and proposals, share information, ask others for information, clear up misunderstandings, summarize discussions and contribute to social community and support (Mikkelsen, 2014d).

Over the years there have been several recommendations regarding how a team should be designed to work well, e.g. Hackman (2002). To succeed, great emphasis is placed on autonomy. Autonomy, also called self-management, means that the team members have direct control over leadership and the accomplishment of a set of tasks delegated from the management in the organization (Langfred, 2000a, 2000b). A team's autonomy, is about the possibility to set targets ("What"), decide work methods ("How"), to plan the work ("When") and the distribution of the work in the group ("Who") (Molleman, 2000). Team is highlighted as a solution for companies who have to increase their ability to handle dynamic environments or to handle complex and variable product- and production processes (Molleman & Slomp, 2006). It is also highlighted that teams are more transparent, and for that reason it is easier to control the tasks in teams then in a traditional line organized activity. Achievements measured in production time, deliverability coordination costs are also better.

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For the employees, the team has its advantages in that co-workers work together in problem-solving and achieving targets, and for that reason teams have a potential to improve the employees motivation and Well-being (Niepcel & Molleman, 1998; Womack, Jones, & Roos, 1990). Autonomy can be described on two levels, individual level and team level. On both levels autonomy can vary from low to high (Mikkelsen, 2014d). The group can have considerable influence on the autonomy on the individuals. This again will limit the individual's freedom to decide for themselves (Langfred, 2000a).

It is important to ask when, and under what conditions, a team works best. Bang (2010) points out that in many organizations they are not conscious enough when it comes to choosing team as a solution, and is pointing out three pitfalls: (1) They do not see clearly enough which tasks are made in a way that the members are depending on each other to fulfil them in a good way, and due to this do not organize the work in teams where it should be done. (2) They are convinced that the tasks, no matter what type of work we are talking about, are best solved in a team. For this reason, also tasks that are most efficiently solved by the individuals separately, are forced into team structures. This might be seen as demotivating and less efficient by the members. (3) Where there are real teams, one do not use enough time and resources to train team members how to work as a well-functioning team.

To get a well-functioning team, Bang (2010) summarizes three factors that team members must be aware of: First, it has to be clarified why the company wants to organize the work in team, and what the team is going to produce. Secondly, all team members have to accept and respect that they are depending on each other to achieve common targets, and see themselves as a part of a bigger whole. This also means that the team members have to adapt to each other, even if they do not want to. Third, team members have to constantly ask themselves: "What can I say or do, or stop saying and doing, to contribute to reach our teams defined targets?" Teamwork has to be learned and continuously developed. If a team is going to work well, the members have to identify themselves with the group, and be committed to work against the groups targets.

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2.4 Virtual team

Virtual teams can be seen as a socio-technical system composed of "Two or more persons, who collaborate interactively to achieve common goals, while at least one of the team members works at a different location, organization, or at a different time, so that communication and coordination is predominantly based on electronic communication media" (Curseu, Schalk, & Wessel, 2008, p. 5).

There are also organizational vice, as described in figure 2.5, different forms of virtual teams (Cascio & Shurygailo, 2003, p. 3). Workers with one single manager, placed on one location, are named teleworkers. Workers that have one single manager, but placed on multiple locations, are referred to as a remote or virtual team. If workers have multiple managers, but are placed on one location, they are referred to as matrixed teleworkers. Workers with multiple managers, and in addition placed in multiple locations, are referred to as matrixed remote or virtual teams.

		Managers	
		One	Multiple
Locations	One	Teleworkers	Matrixed Teleworkers
	Multiple	Remote team	Matrixed Remote Team

Figure 2.5: Different form of virtual teams (Cascio & Shurygailo, 2003, p. 3)

Hypothesis 3: Virtual team members will rate communication with manager's lower then face-to-face team members.

As described by Yukl (2013), any type of team can be virtual. Cross-functional teams are the most common forms of virtual teams. It is also mentioned that a virtual team can be temporary, like e.g. a project team, or a more permanent one. The permanent ones will typically handle ongoing responsibilities, like e.g. solving technical problems or coordinate activities among organizational units that are dispersed.

Virtual teams, communicating primarily through advanced computer and telecommunications technologies, provide a potent response to the challenges associated with today's downsized and lean organizations, and to the resulting geographical dispersion on essential employees. New workforce demographics are also addressed by the virtual teams, where the best employees may be located anywhere in the world, and where workers demand increasing technological sophistication and personal flexibility.

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With virtual teams, organizations can build teams with optimum membership while retaining the advantage of flat organizational structure. Additionally, firms benefit from virtual teams through access to previously unavailable expertise, enhanced cross-functional interaction, and the use of systems that improve the quality of the virtual team's work (Townsend, DeMarie, & Hendrickson, 1998).

Hypothesis 4: Virtual team members will rate competence and development higher then team members in face-to-face teams.

Zaccaro et al (2002) has defined that effective team performance derives from several fundamental characteristics, like: Team members need to successfully integrate their individual actions, since their unique roles contributes to the collective success. Especially the virtual teams are seen as more practical and prominent in industry. This lead to the need of team members to operate more adaptively when coordinating their actions. It is argued that: "The success of the leader in defining team directions and organizing the team to maximize progress along such directions contributes significantly to team effectiveness. Indeed, we would argue that effective leadership processes represent perhaps the most critical factor in the success of organizational teams" (Zaccaro et al., 2002, p. 472).

On the more challenging side, Yukl (2013) also mentions that the diverse, fluid membership might lead to additional problems and special leadership challenges. This might make it difficult for the team to gain any potential benefits. Performance of the team might be difficult to monitor, due to lack of face-to-face contact. Also to influence members can be difficult, together with building thrust and a common team identification. Some diverse team members might feel more committed and responsible towards their local colleagues, then to the virtual ones. Coordination problems might be more challenging in a virtual team, especially if members have highly interdependent roles and they are working in a dynamic and unpredictable environment.

Hypothesis 5: Virtual team will rate team work lower then face-to-face team members.

Hypothesis 6: Virtual team members will rate organizing work lower then face-to-face team members.

Hypothesis 7: Virtual team members will have a lower score on leadership index then team members in face-to-face teams.

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Hypothesis 8: Virtual team members will have a lower score on the employee engagement index then team members in face-to-face teams.

2.5 Communication and knowledge sharing in team

Mikkelsen (2014d) writes that knowledge sharing and information regarding how to solve a task through cooperation, can contribute to higher productivity and performance both on team and organizational level. It can also contribute to innovation and new ideas (Wang & Noe, 2010). Wang and Noe (2010) argue that "a culture emphasizing thrust and innovation is conductive to knowledge sharing". In that sense, it is argued that "human resource practices including fairness in decision-making and open communication likely promote an organizational culture that supports knowledge sharing" (Wang & Noe, 2010, p. 127).

Taking into account the dependency within the virtual teams to share knowledge, to be able to perform in a technology innovative context, it might be suggested that knowledge sharing is promoted and seen as highly important within this organizational culture. Despite this, coordination and knowledge sharing are seen as challenging within virtual teams.

Hypothesis 9: Virtual team members will rate communication openness lower then face-to-face team members.

Hypothesis 10: Virtual team members will rate fairness lower then among face-to-face team members.

Bang & Midelfart (2010) have in their study of 75 management groups found a strong positive connection between degree of dialogic communication and efficiency in the management groups. More concrete, they found that dialogic communication was positively associated with how happy the members of the management group were with the results created, how connected they experienced the group to be and how satisfied the members were to participate in the management group. They argue that there are several empirical studies done on positive effects of a communication form close to the dialogic one, referred to as constructive controversy. Constructive controversy can be explained as expressing ones view in a respectful manner, listening, exploring and trying to understand the view of the other members of the group, and that one tries to find mutually acceptable solutions to problems that are discussed.

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Studies on constructive controversy, conductedf from the beginning of 1970's, indicates that constructive controversy has a positive effect on groups productivity and performance, the quality of the relationship among the members and for the members' psychological health and social skills (Bang & Middelfart, 2012).

Pentland (2012) writes that they at MIT's Human Dynamics Laboratory, by the use of electronic sensors, mounted on badges for collecting data, have identified the elusive group dynamics that characterize high-performance teams. They found patterns of communication to be the most important predictor of a team's success. The best predictors of productivity are mentioned to be the team's energy and engagement outside formal meetings, but also the exploration dimension is highlighted. Successful teams share several defining characteristics; that everyone on the team talks and listens in roughly equal measure, keeping contributions short and sweet, that the team members face one another, and that their conversations and gestures are energetic, that the team members connect directly with one another – not just with the team leader, that team members carry on back-channel or side conversations within the team, and finally that team members periodically break, go exploring outside the team, and bring information back. When it comes to how and how often team members communicate, face-to-face is said to be the most valuable form of communication. The next most valuable is noted to be phone or videoconference, but with the following note: Those technologies become less effective as more people participate in the call or conference. The leaste valuable forms of communication are e-mails and texting. It is concluded from their data that far-flung and mixed language teams struggle to gel. They also conclude that distance play a role, because electronic communication does not create the same energy and engagement that face-to-face communication does. Cultural norms are also mentioned to play a role (Pentland, 2012). Gratton and Erickson (2007) found in their research that as teams become more virtual, collaboration declines. They also found that the higher the proportion of people that does not know anyone else in the team, and the greater the diversity, the less likely it is that the team members will share knowledge.

Hypothesis 11: Virtual team members will rate communication quantity lower then team members in face-to-face teams.

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3 Method

3.1 Wärtsilä – Company and Context

Wärtsilä is a global company, providing complete lifecycle power solutions for the marine and energy markets. By emphasising technological innovation and total efficiency, Wärtsilä aim to maximize the environmental and economic performance of the vessels and power plants of their customers. In 2014, Wärtsilä net sales totalled EUR 4,779 million with approximately 17.700 employees. The company has operations in more than 200 locations in nearly 70 countries around the world. Wärtsilä is listed on Nasdaq Helsinki, Finland. Wärtsilä supplies engines and generating sets, reduction gears, propulsion equipment, control systems and sealing solutions for all types of vessels and offshore installations (Wärtsilä, 2014).

3.1.1 Wärtsilä Vision, Mission, Values and Strategy

Wärtsilä's vision is to be "our customers' most valued business partner". The mission is that "we shape the marine and energy markets with advanced technologies and focus on lifecycle performance, to enhance our customers' business and benefit the environment". The core values are energy, excellence and exitement. The values are incorperated in 3 Big Ideas, which is entrepreneural drive, customer centricity and passion for doing right. This is shown in figure 3.1 (Wärtsilä, 2016b):

Figure 3.1: Wärtsilä Vision, Mission, Values and 3-Big Ideas (Wärtsilä, 2016b)

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Wärtsilä empasisis in their strategy that “Wärtsilä aims at profitable growth by providing advanced technologies and lifecycle solutions to its marine and energy market customers. Increasing environmental awareness and changing energy needs are affecting the way that our customers operate. With our integrated products and services, we are well positioned today to respond to the need for energy efficient and flexible solutions. We will leverage our project management and engineering competences to achieve growth by offering our customers new and innovative solutions. Our growth ambitions are supported by our superior global service network. With our production and supply chain management, we constantly seek ways to provide high quality and maintain cost efficiency – often in co-operation with leading industrial partners in our key growth markets. Our market driven investments in research and development and our focus on digitalisation create a strong foundation for securing and strengthening our position at the forefront of technological innovation. This innovative culture, together with our constant emphasis on safety, diversity, and high ethical standards, attract skilled and committed people and lead to a high performing organisation. Our entrepreneurial drive, customer focus, and passion for doing right not only create new opportunities and environmentally sustainable solutions, but also bring value to all our stakeholders” (Wärtsilä, 2016b).

3.1.2 Wärtsilä People Strategy 2015

From the strategy it can be found that Wärtsilä’s main strategic focus is to provide advanced and innovative technology, in a market that is changing. This requires flexible solutions towards the customer. To connect the company strategy to the people strategy, or to the strategic human resource management (SHRM), Wärtsilä aim to reach their targets by focusing on an innovative culture, together with constant emphasis on safety, diversity and high ethical standards, attract skilled and committed people and thus lead to a high performing organisation.

Wärtsilä human resources (HR) have defined the following goal for their people strategy in 2015: “We’ll have a high performing and energetic team with exciting careers and work opportunities led by excellent leaders” (Castrèn, 2015). To reach this goal, Wärtsilä HR will focus on leadership, high performance, talent management, resourcing and company culture.

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The people strategy can be viewed in figure 3.2:

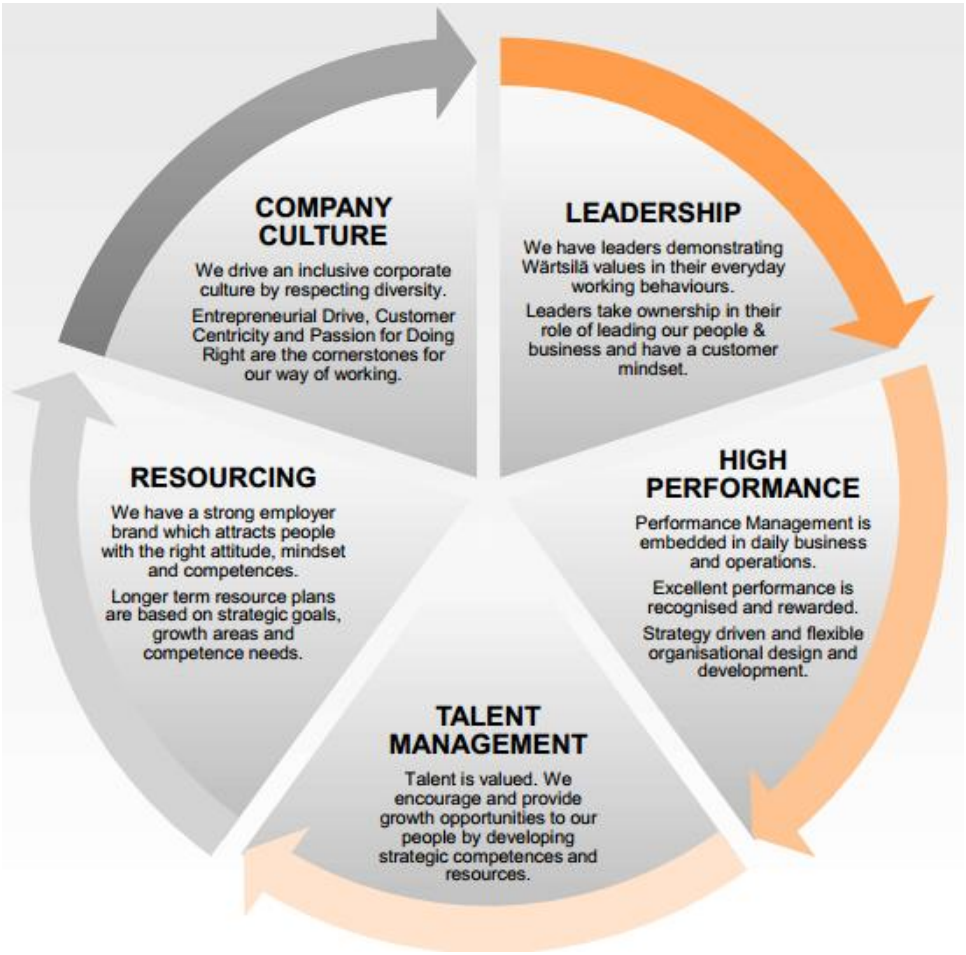

Figure 3.2: People Strategy at Wärtsilä (Castrèn, 2015)

The leadership focus means that leaders demonstrate Wärtsilä values in their everyday working behaviour. Leaders also take ownership in their role of leading the people and business, and have a customer mind-set. To reach high performance, performance management is embedded in daily business and operations, and excellent performance is recognized and rewarded. There should be a strategy driven and flexible organizational design and development. By focusing on talent management, it is stated that talent is valued. Wärtsilä encourage and provide growth opportunities to their people by developing strategic competences and resources. Focus on resourcing highlights the importance of having a strong employer brand that attracts people with the right attitudes, mind-set and competences. Longer-term resource plans are based on strategic goals, growth areas and competence needs. Company culture focus on an inclusive corporate culture by respecting diversity. Entrepreneural drive, customer centricity and passion for doing right are the cornerstones for Wärtsilä's way of working.

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3.1.3 HRM practices in Wärtsilä

To reach strategic targets in Wärtsilä, research and development is seen as important to strengthen the technology leadership position. “Wärtsilä protects innovation and competitiveness through close attention to intellectual asset management and the continuous development of internal key competences. Networks and clusters are formed to further extend the company’s know-how, skills, and capabilities by committing to long-term relationships with suppliers, engineering companies, university partners, and with licensees and other original equipment manufacturers” (Wärtsilä, 2016b).

Wärtsilä has over the years introduced and globally standardized their HRM or people processes, now named as Wärtsilä employee lifecycle management. The employee lifecycle management includes all phases from the entry through induction, learning and development, competence development, resourcing and recruitment until performance management, rewarding and organisational development and design. Wärtsilä strategy is the starting point for all Wärtsilä people processes and thus affecting all aspects of employment at Wärtsilä (Wärtsilä, 2016a). Within the different processes there are HRM practices defined on a global level, also with common tools introduced to assist and standardize the practices within the company. An overview of the different practices can be seen from table 3.1. In this table, the different practices are connected to what is mentioned in theory as best practice HRM needed to reach a high performance organization. As mentioned in the theory, HRM practices aim to affect the employees’ ability, motivation and opportunities to participate and perform. Together, these three dimensions are seen as the driving forces behind individual performance, and are called the AMO-model. The different practices are for that reason also connected to the corresponding ability-, motivation- or opportunity-enhancing practice.

Table 3.1: HRM practices within Wärtsilä, connected to best practice HRM and AMO model

Wärtsilä – People Process:	**HRM Practice and tool:**	**Best practice HRM – AMO-enhancing practice:**
Performance Management	Development discussion. Web-based tool is used.	Employee appraisal - Motivation-enhancing practice
Rewarding	Principle aims: Attract, retain and motivate key talent by providing compensation solutions that reward employees for their performance in delivery business results. The rewards plans are made to be competitive compared to relevant local markets and are including rewards for individual, team and company performance. (Continuing)	Performance based salary – Motivation- enhancing practice

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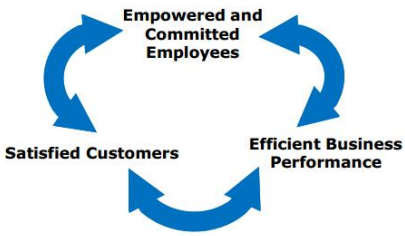
Wärtsilä – People Process:	**HRM Practice and tool:**	**Best practice HRM – AMO-enhancing practice:**
Rewarding (Continuing)	(Continuing from previous page.) They are responsive to change in business needs on an exception basis and simple, transparent and easy to understand. The plans are made to secure that reward principles align relevant interests.	Performance based salary – Motivation- enhancing practice
Resourcing and Recruitment	Web-based recruitment tool is used, and all open positions are displayed on internal intranet.	Advanced systems for recruitment and selection of employees – Ability-enhancing practice
Motivation and Engagement	My Voice is the global employee satisfaction survey in Wärtsilä. The purpose is to collect employee feedback on issues related to well-being at work, the work environment, management and strategy, and to indicate development actions for improvement of practices. It is conducted as a part of the continuous development of operations, as shown in below figure 3.3 (Evalua, 2015a):  *Figure 3.3: Development of operations.*	Involving and participating - Opportunity-enhancing practice
Learning and Development	The 70:20:10 rule: 70% on-the-job training, and learning by doing. 20% internal learning from others like coaching, via colleagues' etc. 10% formal learning in classrooms, workshops and eLearning. Main areas of training provided: Leadership in general and leading virtual teams, sales, project management and technologies.	Learning, competence development and career - Ability-enhancing practice
Competence Development	All positions are connected to a global job description, which is part of a corresponding job family. All employees do a competence mapping as a self-assessment before each yearly development discussion. Needed competence is described according to targets in their global job position description. Competence development needs for each employee are discussed as part of the development discussion. (Overview of the competence mapping process can be found in attachment B.)	Learning, competence development and career - Ability-enhancing practice

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When it comes to organizational development and design, organizing in team is widely used within Wärtsilä. Both face-to-face or co-locate teams and virtual or remote teams are used. From an earlier master thesis, done as a case study in Wärtsilä, also Lundøy and Sortland (Lundøy & Sortland, 2013) describe the use of virtual teams within Wärtsilä for project execution.

The types of virtual teams vary within Wärtsilä, when it comes to e.g. amount of team members sitting together as face-to-face members and the amount of virtual members. It might vary from most team members sitting face-to-face, only one being a virtual team member, to a situation where all members of the team are virtual members. Also within the face-to-face teams variations can be seen on a day-to-day basis, as people work while travelling or work from home. As already mentioned, Wärtsilä uses virtual teams for project execution. This means that team members permanently part of a virtual or face-to-face team, might in addition be part of several project and/ or cross-functional virtual teams. In this context, cross-functional means teams put together with members from e.g. assembly line, product testing, research and development, purchasing or even customers, external partners and stakeholders.

Performance is rewarded on individual, team and corporate level. Personal, as well as team targets, are normally defined and agreed in the yearly development discussion. Yearly salary increase reflects the achieved targets on all levels. All employees' not part of a bonus agreement, are part of the yearly profit sharing program. Targets meet on corporate level are part of the profit sharing evaluation. For managers, also individual bonus agreements are quite common. These bonus agreements takes personal, team and corporate level into consideration.

Competence development needs are part of the development discussion. Development needs and targets are defined and agreed according to gaps discovered between employee self-assesment and competence mapping, compared to employees' global job position description.

When it comes to leadership, most virtual team members in Wärtsilä can be defined as matrix teleworkers or part of a matrix remote team. Local managers might be assigned for team members that are part of a virtual team. This is seen as important, to secure that local HR rules are followed in each country and each location. The local manager will follow the employee on a day-to-day basis, while the functional team manager or line manager is responsible to follow up the team related tasks and distribution of work within the team.

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Development discussions are normally held between the team member and the functional manager or line manager, considering relevant input from the local assigned manager.

Due to the above described utilization of virtual teams within Wärtsilä, combined with the extended use of computer based communication technology, the internal communication and knowledge sharing has changed over the years in e.g. Propulsion. Team meetings have changed from a situation where face-to-face team members were sitting together in a common meeting room communicating with computer based communication tools to virtual colleagues, towards a situation where all team members join virtual meetings. In such meetings, all team members join with the same opportunity to listen and to speak up. Many experience that it is more difficult to interrupt and speak up in meetings for virtual team members, when joining a meeting where several team members are sitting together face-to-face in a common meeting room. Also tools taken into use by HR, emphasises the use of communication technology for knowledge sharing. As an example, web-based tools for development discussions can be mentioned. Using Skype as a tool for communication is easy with the support of a camera and by sharing the computer screen to facilitate a development discussion with a virtual team member. Another example is eLearning programs for learning and development, which are standardized and common for both virtual and face-to-face team members. It is to be noted that in this study the amount of communication, with managers or within the teams for the two groups of team members, is not measured.

When it comes to learning and development, it must be noted that the competence level for team members in virtual or face-to-face teams is not collected, measured or considered as part of this thesis.

There is a difference within the different types of teams, and their function or task, how much and how vital communication is in fulfilling the team tasks. It can be mentioned that in Wärtsilä, mainly the project managers are in direct contact with the customers. When it comes to communication with external vendors, it might be the research and development teams that do most of the communication. Engineering teams are communicating a lot internally, both towards project management and research and development, but might also to some extent communicate with customers and external vendors. It is to be noted that in this study the amount of communication towards customers, external partners or stakeholders for the two groups of team members is not measured.

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3.2 Selection of data

In this thesis I will study team member's feedback from the MyVoice employee satisfaction survey in Wärtsilä 2015. Their feedback will be analysed in the light of them being exposed to the same HRM practices, but being members of a virtual or a face-to face team.

When it comes to the definition of virtual and face-to-face team members, I will in this thesis only consider members from permanent virtual and face-to-face teams, even though both virtual and face-to-face team members might participate in several virtual project and/ or cross-functional teams within Wärtsilä.

3.2.1 The MyVoice survey

The MyVoice survey is done approximately every 18 months. The data for the studied survey was collected during February and March 2015. It reflects the organization per 12th of January 2015.

Wärtsilä was at the time of the survey (February and March 2015), divided into three main businesses called Ship Power, Power Plants and Services. I will study virtual teams and face-to-face teams within Ship Power. These teams work with general engineering, product engineering, customer order engineering, project management and research and development. Teams are found within business line Propulsion and business line 4-Stroke Engines. Most people are located in Europe, like in Finland, Norway, the Netherlands and Italy. Some people are also located in China. Wärtsilä organizational overview per 12.01.2015, and where in the organization the teams are selected from, are shown in attachment C.

3.2.2 The questionnaire and theoretical fundament for MyVoice

The employees have rated 85 different questions on a scale from 1, reflecting a very poor situation, to 5 which is reflecting a very good situation. An answer with the value 3 is taken as "neutral/ cannot say". Some of the questions have been asked in a "positive" tone, and some in a "negative" one. The scale applied for individual questions is however always as described above. The scale of "negative" questions has been reversed when entering the replies into the MyVoice result system. One question (question 32) is rated 1 if no development discussion was held with manager in the last 12 months, 3 if only an unofficial development discussion was held with manager or 5 if development discussion was held with manager.

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The questions are grouped into seventeen different dimensions or categories, where each dimension consists of a number of questions about the same subject matter. Sixteen dimensions and grouped into four main subject areas: Management, communication, strategy and values, and employee. There are four different dimensions in each subject areas, as shown in figure 3.4 below. The last dimension, not grouped together with the ones above, is named equal opportunities. In addition there are four indexes calculated, as also highlighted in figure 3.4, which combines and weights different questions across the dimensions. These indexes are named customer orientation, change management, employee engagement and leadership.

Figure 3.4 shows all subject areas and corresponding dimensions, together with the different indexes, included in the MyVoice survey (Evalua, 2015a):

Employee	Management
Workload and conditions	Organizing work
Competance and development	Fairness
Atmosphere	Team work
Motivation and satisfaction	Rewarding
Strategy and values	**Communication**
Values	Communication quantity
Strategy and targets	Communication openness
Customer focus	Feedback
Engagement	Communication with managers

Indexes
Customer Orientation Index (COI)
Change Management Index (CMI)
Employee Engagement Index (EEI)
Leadership Index (LI)

Equal opportunities

Figure 3.4: Dimensions grouped in main subject areas, and indexes calculated (Evalua, 2015a)

From the theory, and hypotheses defined, eleven dimensions and indexes will be investigated in this study. These are seen as especially interesting, as differences might be expected between virtual and face-to-face teams within these areas. Table 3.2 shows the dimensions and indexes to be investigated, and the subject of the questions asked within the dimensions and indexed.

Table 3.2: Dimensions and indexes to be investigated, and subjects of questions.

Dimension and index:	**Questions are asked around the following subject(s):**
Customer orientation index	The customer orientation index is a numerical index that indicates how well the customer needs are taken into account in everyday work. It consists of a non-weighted average of 7 questions
Motivation and satisfaction	Questions are asked around motivation and satisfaction, both at work and in life as general. Also questions asked about will to work hard for own success and success for the business. 8 questions are asked in total.

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Dimension and index:	Questions are asked around the following subject(s):
Communication with managers	Qustions are asked around satisfaction in communication with manager(s), both local business management and line manager. Questions related to development discussions. 5 questions are asked in total.
Competence and development	Questions are asked around satisfaction with possiblility to develop internally and if employee feels that own competence meets the requirements of the job. 8 questions are asked all together.
Team work	Questions are asked around satisfaction connected to team work in general, quality and how the team is working together. 10 questions are asked within this dimension.
Organizing work	Approximately half of the questions are connected to perceived autonomy of own work situation. In addition, some questions are around perceived quality, and internal cooperation within Wärtsilä. 15 questions are asked around organizing work.
Leadership index	The leadership index provides in one numerical index the results of the MyVoice questions related to leadership. It is calculates as an average of 18 selected questions
Employee engagement index	When it comes to the employee engagement index, it is described that an engaged employee is one who is fully involved and enthusiastic about his/ hers work, and thus will act in a way that fosters his/ her organization's interests. This index indicates the depth of employees' commitment to Wärtsilä, and consists of a weighted average of 14 questions
Communication openness	Questions are asked about perceived openness within own team, country and business. Also questions about openness in sharing challenges within the team and in the business. 8 questions are part of this dimension.
Fairness	Questions are asked around thrust, respect and fairness in working community. 4 questions are asked within this dimension.
Communication quantity	Questions are asked if employee find communication adequate within the team and in the business. In addition some questions are asked around specific communication channels. 6 questions asked within this dimension.

In addition to the dimensions and indexes, also the amount of participants in the survey and amount of people participating in development discussions in the last 12 months, are collected from the MyVoice survey 2015. Numbers are presented in table 3.3.

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Table 3.3: Amount of MyVoice participants, and how many participated in development discussions last 12 months.

	Amount of people in organization	Amount of people answered MyVoice	Answer percentage	Percentage participated in development discussion
Wärtsilä Corporate	17 657	14 020	79 %	86 %
Ship Power	5 500	4 224	77 %	85 %
Virtual teams	152	127	84 %	99 %
Face-to-face teams	133	119	89 %	97 %

Table 3.3 shows that the answer percentage in Wärtsilä Corporate is 79 %, 14.020 persons participated put of 17.657 employees. The answering percentage within Ship Power organization is a bit lower with 77 %, where 4.224 persons participated out of 5.500 employees. For the virtual teams, answering percentage was 84%, and 127 out of 152 employees participated. For face-to-face teams, participation was 89 % for this survey, and 119 of 133 employees participated. Since Wärtsilä Corporate answer percentage for MyVoice survey in 2015 was above 70%, it can be considered as very good (Baruch, 1999; Richardson, 2005).

From the guiding documentation accompanying the MyVoice survey (Evalua, 2015b), it is suggested that a company which understands its customers' need, is at least one step ahead of its competition, and can gain both direct and indirect benefits. By focusing on customer needs, when planning for goals within organizational culture, leadership, organizational structure and way of working, the outcome will be service quality, innovativeness and performance.
This is also illustrated in figure 3.5.

Figure 3.5: Importance of focusing on customer needs (Evalua, 2015b, p. 5)

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By measuring the customer satisfaction, the organization is provided feedback regarding how successful they are at providing services to the marketplace. It is recognized that a truly working, discursive relationship with the customer cannot become reality if the firm has major internal communication problems. Good inner communication flow enables inter-functional coordination of customer interactions and precise division of tasks.

When it comes to understanding why employee engagement matter, it is described that the employees' engagement benefit both himself/ herself and the whole organization. An engaged employee is ready to work hard to take the organization to success. These employees have fewer sick leaves and they are less likely to leave the organization. An important task for the Line Manager is to learn how the subordinates really feel about their job and well-being at work. It is suggested that for example the development discussions are a good opportunity for the managers to update their beliefs about the state of employee engagement in their own unit.

It is suggested that stimulating the needs and drivers that motivate employees plays an important role in leadership. It is also said that employee's satisfaction and motivation have a positive impact on customer satisfaction and loyalty, which are key drivers for profitability. It is confirmed that this has been documented to hold true also at Wärtsilä. It is said that these dependences also exist in a reverse direction: The higher the customer satisfaction, the more the employee feel motivated and perform better.

Evalua (2015b) are in their guiding documents for the MyVoice survey, looking towards Lawrence and Nohria (2002) "The Four-drive theory" and Ryan and Deci (2000) "Basic psychological needs based on the self-determination theory". They are using these two theories, seen as two of many published on drivers for work motivation and work performance. First in this setup, as shown in figure 3.6, performance drivers can be divided into four large categories that aim at including major aspects of human motivation. These are named to comprehend, to bond, to acquire and to defend. Each of these drivers seems to be best fulfilled by separate levers or HRM practices. Drive to comprehend could be met by meaningful job design, drive to bond by collaborative and friendly culture and atmosphere, drive to acquire by the proper reward system, and drive to defend by the clarity of and trust in the organizational processes, job security and one's own position at work. Positive outcome in the leverages on the other hand help in fulfilling basic psychological needs, i.e. autonomy, competence and relatedness. Employees perceive both the organization as a whole and their immediate line managers as influencing their motivation. Typically they are well aware of what the limitations and discretion of their managers are.

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Therefore, the actual fulfilment of the performance drivers and basic psychological needs takes place when both the direct leader and the organization carry out their respective parts (Evalua, 2015b)

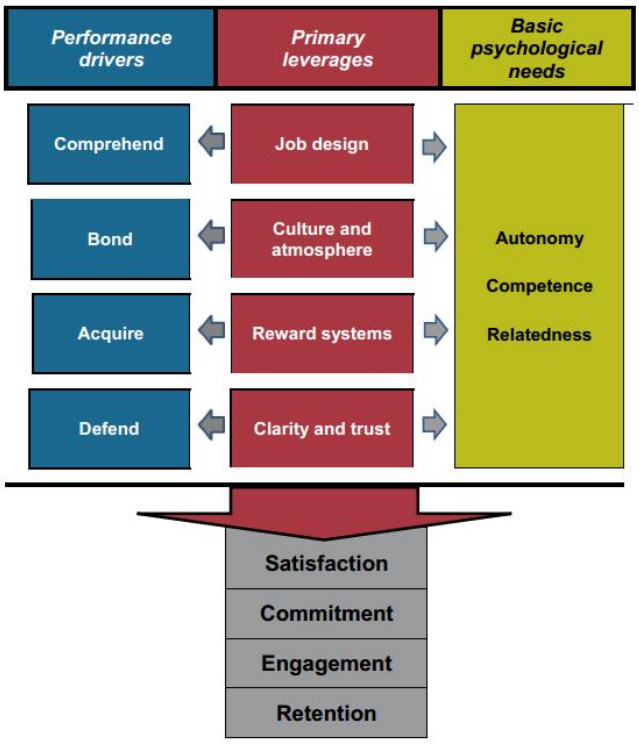

Figure 3.6: Interaction between HRM practices, performance drivers and basic psychological needs (Evalua, 2015, p. 8)

3.2.3 Cultural influence on the data collected

In the supporting material to the MyVoice survey, it is discussed how and to what extent culture can effect employee's behaviour (Evalua, 2014). In this context, culture can be described as socially transmitted behaviour patterns, attitudes, norms and values of a given community. These can be seen as guidelines, and are used by members of the community to understand and properly interact with other people. Furthermore, culture gives a sense of belonging or identity to one group in opposition to the other(s). Importantly it is recognised that culture should not be mistakenly taken as only national culture, since corporate and professional cultures may have an equal or even dominating impact in certain respects. However, there are significant differences between national and regional cultures that affect behaviours and perceptions in work organizations. Such variety can be clearly seen in the perception of time, organizational citizenship behaviour, leadership style and power distance between employee and Line Managers.

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In some countries or business units working conditions may be truly better than in others, which is reflected in the results. However, at the same time, there is significant cultural variation in the way of responding to surveys across countries and regions. Moreoever, there may be different expectations of people (Evalua, 2014). As a result of all this, the baseline of the results in MyVoice may be at a different level in different countries. Hence, the report presenting MyVoice reference and target values presents not only the reference case analysis for the whole Wärtsilä Corporation. Instead it is presented specifically for two separate categories by the cultural variation in responding. In this study, teams are collected from regions included in category I. These are countries and regions like Italy, Finland, East Asia, Central Europe, German-speaking Central Europe and Scandinavia. Only one team has 2-3 team members from category II countries, like Russia and Spain. This selection is done to avoid, as much as possible, the influence of cultural differences among the teams and team members in this study. Culture can be seen as one important variable in this context, and when comparing virtual and face-to-face teams and team members. In this study I choose to assume that the cultural variable is kept close to constant among the teams selected, due to the selection of teams and team members from only one Category of regions and countries.

None of the teams in this study are placed in countries or regions that have English as first or native language. English is used as a business language within Wärtsilä, and most of the employees use English as their second language.

3.2.4 Access to data

Access to the results of the MyVoice survey is granted from the responsible person in the HR organization in Wärtsilä. I will use internal available organizational charts and interviews with HR resources, team leaders and managers, to verify that the chosen teams can be considered “real teams” according to the theory. In addition, the teams need to be verified as virtual or face-to-face according to the theory brought forward.

In this study, a team is identified to be a virtual team if at least one employee is working remotely from another location on a permanent basis. The virtual teams are identified to be organized as “Remote” or “Matrix remote”. As also argued by Chatfield et al. (Chatfield, Najem Shlemoon, Redublado, & Darbyshire, 2013), these are the two most common forms of virtual teams. In this study, a face-to-face team is considered to be a conventional team. Team members are permanently placed in one location, together with their manager.

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Most of the communication is done face-to-face. These teams are also referred to as co-located teams (Yukl, 2013).

The amount of team members and teams in this study, are distributed as shown in table 3.4.

Table 3.4: Distribution of teams and team members among virtual and face-to-face teams.

	Amount of people answered MyVoice	Amount of teams	Average amount of people in teams
Virtual teams	127	12	11
Face-to-face teams	119	15	8

There are 127 team members identified in virtual teams, and these are collected from 12 different teams. There are 119 team members identified as face-to-face team members, and they are collected from 15 teams. The average amount of team members in the virtual teams are 11, and in face-to-face teams the average is 8 team members. It can be mentioned that the sizes of the teams vary from six team members, up to sixteen for one of the virtual teams and up to thirteen for one of the face-to-face teams.

Checking for typical tasks and functions within all 27 teams identified, the exact amount of team members and teams, divided in team functions or typical team tasks, are shown in table 3.5.

Table 3.5: Teams and team members divided in team function.

	Amount of people in engineering teams (Amount of teams)	Amount of people in project management teams (Amount of teams)	Amount of people in research and development teams (Amount of teams)	Total
Virtual teams	77 (7)	40 (4)	10 (1)	127 (12)
Face-to-face teams	58 (8)	17 (2)	44 (5)	119 (15)
Total	135 (15)	57 (6)	54 (6)	246 (27)

From the MyVoice survey I will identify the different teams made available, and extract all answers from all teams. The answers are only available on team level, and not per employee. For each question, the mean value for the team is shared. It is also possible to see the distribution of each value 1-5 within the team for each question. I will not use the calculated mean values directly, but calculate them from the distributed values for each team per question. The different distributed answers for a team on each question will be spread on the amount of team members in the team that answered the survey.

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All employees from the different teams will be grouped as member of a virtual team or a face-to-face team. By doing this, I am able to study the standard deviation and the mean value for both groups of team members. I will compare the two groups for the different dimension and indexes, or in this case called variables. These results will be analysed to answer the research question, and the hypothesis brought forward.

Only teams with six or more members are available in the MyVoice survey as separate team results. For teams with five members or less, results are grouped on the level above the team. Teams with five or less members are not used in this study. By only using teams with six or more members, and only presenting data on team level, is it not possible to identify who answered what on the different questions. The SPSS codebook defined for the file, containing all data and answers for all team members, can be found in attachment A.

3.2.4 Data analysis

Independent-samples t-test is selected to check if any significant differences can be found between the two types of team members for the different variables or categories. It might be suggested to divide the groups further, e.g. into team functions, as described in table 3.4 above. By doing this, it could be investigated if there are significant differences within the two groups of team members. Since the amount of teams and team members are very limited for the three suggested team functions, I decided not to include looking for significant differences within the two groups of virtual or face-to-face team members for the different variables.

Non-parametric technique and independent-samples t-test is selected, despite the fact that normal distribution can not be expected for life satisfaction measurments. Each person is only counted once, and is only part of the group of virtual team members or a part of the group of face-to-face team members. The observations can be seen as independent, also because the data from one subject can not influence the data from another. The independent-samples t-test will be used since I want to compare the mean score, on some continuous variables, for two different groups of participants.

For each variable brought forward as part of the eleven hypotheses, results will be presented. First, descriptive statistiscs will be presented for each variable, showing mean values and standard deviation for both virtual and face-to-face team members. In addition the difference in standard deviation between the two groups will be presented in number and percentage.

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A positive persentage value for the difference in standard deviation, will indicate that satisfaction answers in the group of virtual team members has a higher standard deviation or distribution then the group of face-to-face team members. Secondly, the Levene's test for equality of variance will be shown, presenting the F value and the sig. value when comparing the two groups. If the sig. value for Levene's test is larger than 0,05 equal variances can be assumed, and the data from the line marked equal variance is choosen when t-test for equality of means is conducted. As the last step of the analyses, t-test for equality of means will be shown. The t and df value from the analysis will be shown, together with the P-value, or sig. 2-tailed value. If the P-value is larger then 0,05 no significante difference is found between the two groups of team members for this particular variable. The mean difference between the two groups is marked μ_1- μ_2.

There were in total 16 questions that were missing data or an answer from the original survey file. From in total 113 answered questions from 246 persons, missing data is calculated to be 0,058%. E.g. 11 of the missing answers were connected to the question "I am satisfied with the following channel of Wärtsilä's internal communications – Group's personnel magazine Wattsup". I believe data is missing due to employees not familiar with this magazine, so the correct answer can be "neutral/ cannot say". For this reason I decided to fill in the value 3, stating "neutral/ cannot say" for all of these 16 answers.

To check for outliers, I ran a plot file for the two different groups of team members and categories. Outliers was checked towards the original file and possible values from 1 to 5. One typing mistake was discovered and corrected in the file. For the others, which were correct according to the original input file and contained a correct value between 1 and 5, I decided to keep them in. The standard deviation for the two types of team members per category is of importance, in spite of the influence these outliers have on the calculation of the mean value. Based on this, I decided to keep all outliners in.

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3.3 Reliability, validation and etics

Both types of team members, virtual or face-to-face, have negative skewness for all variables. This means that the answers are distributed on the right side of the midle of the scale. This is quite common for life satisfaction measures, with most people being reasonably happy with their lot in life (Pallant, 2013). Based on this, normal distribution can not be expected for this type of data.

The scale used in this survey starts from 1, reflecting a very poor situation, to 5 which is reflecting a very good situation. An answer with the value 3 is taken as “neutral/ cannot say”. If people are experiencing a good situation they will rate 4 or 5, while a poor situation will be rated by 1 or 2. Since the scale is not bigger then 1-5, and 3 is “neutral/ cannot say”, seen in combination with the distribution on the right side of the midle of the scale, big differences in mean values might be difficult to obtain between virtual and face-to-face teams.

In addition, since data is only received on team level, real differences between virtual and face-to-face teams might be difficult to obtain.

The answer percentage in Wärtsilä Corporate is 79 %. For the virtual teams, answering percentage was 84%, and for face-to-face teams participation was 89 % for this survey. The answer percentage is considered to be good, which means that the answers provided from the different teams can be seen as representative for the two groups of team members selected.

Questions, variables and wordings used are generally made to fit Wärtsilä Corporation. Wordings like “line manager” and “customer” might be interpreted in different ways internally in the company. This is not seen to affect any of the two groups more then the other, but can be seen as a general comment to the reliability of the answers given.

As a manager for one of the teams participating in this study, both me and my team members participated in the MyVoice survey in 2015. This study was not known to any of us at that time, so it should not have affected the answers in any way. The different teams are not discussed as separate units, but all team members are part of the different groups defined in this study. Because of this I believe that my participation in the original MyVoice survey, and being a manager for one of the teams, are not in conflict with my role as a researcher or author in this study.

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Before and during this study I have been employed in Wärtsilä. Information has been provided to me in an open manner upon my requests, without any restrictions or special expectations of the results from Wärtsilä's side. This thesis will be openly shared with interested parties inside Wärtsilä. From this I will conclude that the work with this thesis has been fully independent from Wärtsilä.

MyVoice results are only presented for teams where more than six persons have answered. For this reason, all participants are anonymous and unable to be identified through their answers. Due to this, there is no personal information, directly or indirectly, registered working on this thesis. After checking with Norsk samfunnsvitenskapelig datatjeneste AS (NSD), there is no need for special notification towards NSD in this case. Results from NSD meldeplikttest can be found in attachment D.

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4 Results

In this chapter I will show the results found after comparing the two groups of team members, virtual team members versus face-to-face team members, for the different categories or variables to be investigated.

Table 4.1 shows the score of the customer orientation index for virtual and face-to-face teams.

Table 4.1: The customer orientation index for virtual teams (N=127) and face-to-face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Customer orientation index	Virtual	26,2756	5,64657	0,57522
	Face-to-face	26,8992	5,07135	10 %

Table 4.1 shows that the mean value for the members in the virtual teams is 26,3 and for face-to-face team members it is 26,9. The difference in standard deviation between the two groups is 0,6 or 10 %, which indicates that the deviation in scores for the customer orientation index is bigger in virtual teams then in face-to-face teams.

Table 4.2 shows equality of variance and equality of means for the customer orientation index for virtual and face-to face teams.

Table 4.2: Equality of variance and means for customer orientation index for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Customer orientation index	Virtual	0,823	0,365	-0,909	244	0,364	-0,62357
	Face-to-face						

Table 4.2 shows that the F-value for equality for variance is 0,8 and the sig. is 0,4. From this, equal variance can be assumed for the customer orientation index. The mean difference, or μ_1-μ_2, is -0,6. The P-value, or sig. (2-tailed), is 0,4. No significant difference is found between virtual teams and face-to-face teams for the customer orientation index.

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Table 4.3 shows the score of motivation and satisfaction for virtual and face-to-face teams.

Table 4.3: Motivation and satisfaction for virtual teams (N=127) and face-to-face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Motivation and satisfaction	Virtual	33,1181	5,89944	0,37776
	Face-to-face	33,0504	5,52168	6 %

Table 4.3 shows that the mean value for the members in the virtual teams is 33,1 and for face-to-face team members it is 33,1. The difference in standard deviation between the two groups is 0,4 or 6 %, which indicates that the deviation in scores for motivation and satisfaction is bigger in virtual teams then in face-to-face teams.

Table 4.4 shows of equality of variance and equality of means for motivation and satisfaction for virtual and face-to-face teams.

Table 4.4: Equality of variance and means for motivation and satisfaction for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Motivation and satisfaction	Virtual	0,373	0,542	0,093	244	0,926	0,06769
	Face-to-face						

Table 4.4 shows that the F-value for equality for variance is 0,4, and the sig. is 0,5. From this, equal variance can be assumed for motivation and satisfaction. The mean difference, or μ_1- μ_2, is -0,07. The P-value, or sig. (2-tailed), is 0,9. No significant difference is found between the virtual teams and face-to-face teams for motivation and satisfaction.

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Table 4.5 shows the score of communication with managers for virtual and face-to-face teams.

Table 4.5: Communication with managers for virtual teams (N=127) and face-to-face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Communication with managers	Virtual	18,8976	3,85416	0,28841
	Face-to-face	19,0756	3,56575	7 %

Table 4.5 shows that the mean value for the members in the virtual teams is 18,9 and for face-to-face team members it is 19,1. The difference in standard deviation between the two groups is 0,3 or 7 %, which indicates that the deviation in scores for communication with managers is bigger in virtual teams then in face-to-face teams.

Table 4.6 shows equality of variance and equality of means for communication with managers for virtual and face-to-face teams.

Table 4.6: Equality of variance and means for communication with managers for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Communication with managers	Virtual	0,838	0,361	-0,375	244	0,708	-0,17799
	Face-to-face						

Table 4.6 shows that the F-value for equality for variance is 0,8, and the sig. is 0,4. From this, equal variance can be assumed for communication with managers. The mean difference, or μ_1- μ_2, is -0,2. The P-value, or sig. (2-tailed), is 0,7. No significant difference is found between virtual teams and face-to-face teams for communication with managers.

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Table 4.7 shows the score of competence and development for virtual and face-to-face teams.

Table 4.7: Competence and development for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Competence and development	Virtual	29,9764	4,55806	0,17163
	Face-to-face	29,9580	4,25704	3 %

Table 4.7 shows that the mean value for the members in the virtual teams is 30,0 and for face-to-face team members it is 30,0. The difference in standard deviation between the two groups is 0,2 or 3 %, which indicates that the deviation in scores for competence and development is slightly bigger in virtual teams then in face-to-face teams.

Table 4.8 shows equality of variance and equality of means for competence and development for virtual and face-to-face teams.

Table 4.8: Equality of variance and means for competence and development for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Competence and development	Virtual	0,001	0,970	0,024	244	0,981	0,01839
	Face-to-face						

Table 4.8 shows that the F-value for equality for variance is 0,0, and the sig. is 1,0. From this, equal variance can be assumed for competence and development. The mean difference, or μ_1-μ_2, is 0,02. The P-value, or sig. (2-tailed), is 1,0. No significant difference is found between virtual teams and face-to-face teams for competence and development.

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Table 4.9 shows the score of team work for virtual and face-to-face teams.

Table 4.9: Team work variable for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Team work	Virtual	38,7638	8,60090	1,03453
	Face-to-face	38,6891	7,56637	12 %

Table 4.9 shows that the mean value for the members in the virtual teams is 38,8 and for face-to-face team members it is 38,7. The difference in standard deviation between the two groups is 1,0 or 12 %, which indicates that the deviation in scores for team work is bigger in virtual teams then in face-to-face teams.

Table 4.10 shows equality of variance and equality of means for team work for virtual and face-to-face teams.

Table 4.10: Equality of variance and means for team work for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	$\mu_1 - \mu_2$
Team work	Virtual	1,534	0,217	0,072	244	0,943	0,07470
	Face-to-face						

Table 4.10 shows that the F-value for equality for variance is 1,5, and the sig. is 0,2. From this, equal variance can be assumed for team work. The mean difference, or $\mu_1 - \mu_2$, is 0,1. The P-value, or sig. (2-tailed), is 0,9. No significant difference is found between virtual teams and face-to-face teams for team work.

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Table 4.11 shows the score of organizing work for virtual and face-to-face teams.

Table 4.11: Organizing work for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Organizing work	Virtual	51,7244	12,66897	0,72591
	Face-to-face	52,4286	11,94307	6 %

Table 4.11 shows that the mean value for the members in the virtual teams is 51,7 and for face-to-face team members it is 52,4. The difference in standard deviation between the two groups is 0,7 or 6 %, which indicates that the deviation in scores for organizing work is bigger in virtual teams then in face-to-face teams.

Table 4.12 shows equality of variance and equality of means for organizing work for virtual and face-to-face teams.

Table 4.12: Equality of variance and means for organizing work for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	$\mu_1 - \mu_2$
Organizing work	Virtual	0,053	0,817	-0,448	244	0,655	-0,70416
	Face-to-face						

Table 4.12 shows that the F-value for equality for variance is 0,1, and the sig. is 0,8. From this, equal variance can be assumed for organizing work. The mean difference, or $\mu_1 - \mu_2$, is -0,7. The P-value, or sig. (2-tailed), is 0,7. No significant difference is found between virtual teams and face-to-face teams for organizing work.

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Table 4.13 shows the score of the leadership index for virtual and face-to-face teams.

Table 4.13: The leadership index for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Leadership index	Virtual	69,5354	15,20797	1,53539
	Face-to-face	70,3445	13,67259	10 %

Table 4.13 shows that the mean value for the members in the virtual teams is 69,5 and for face-to-face team members it is 70,3. The difference in standard deviation between the two groups is 1,5 or 10 %, which indicates that the deviation in scores for the leadership index is bigger in virtual teams then in face-to-face teams.

Table 4.14 shows equality of variance and equality of means for the leadership index for virtual and face-to-face teams.

Table 4.14: Equality of variance and means for the leadership index for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	$\mu_1 - \mu_2$
Leadership index	Virtual	0,820	0,366	-0,438	244	0,662	-0,80910
	Face-to-face						

Table 4.14 shows that the F-value for equality for variance is 0,8, and the sig. is 0,4. From this, equal variance can be assumed for the leadership index. The mean difference, or $\mu_1 - \mu_2$, is -0,8. The P-value, or sig. (2-tailed), is 0,7. No significant difference is found between virtual teams and face-to-face teams for the leadership index.

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Table 4.15 shows the scores of the employee engagement index for virtual and face-to-face teams.

Table 4.15: the employee engagement index for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Employee engagement index	Virtual	53,1890	9,95205	0,41507
	Face-to-face	53,1092	9,53698	4 %

Table 4.15 shows that the mean value for the members in the virtual teams is 53,2 and for face-to-face team members it is 53,1. The difference in standard deviation between the two groups is 0,4 or 4 %, which indicates that the deviation in scores for the employee engagement index is bigger in virtual teams then in face-to-face teams.

Table 4.16 shows equality of variance and equality of means for the employee engagement index for virtual and face-to-face teams.

Table 4.16: Equality of variance and means for the employee engagement index for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	$\mu_1 - \mu_2$
Employee engagement index	Virtual	0,051	0,821	0,064	244	0,949	0,07973
	Face-to-face						

Table 4.16 shows that the F-value for equality for variance is 0,1, and the sig. is 0,8. From this, equal variance can be assumed for the employee engagement index. The mean difference, or $\mu_1 - \mu_2$, is 0,08. The P-value, or sig. (2-tailed), is 0,9. No significant difference is found between virtual teams and face-to-face teams for the employee engagement index.

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Table 4.17 shows the scores of communication openness for virtual and face-to-face teams.

Table 4.17: Communication openness for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Communication openness	Virtual	27,3780	7,30615	0,77836
	Face-to-face	26,6723	6,52779	11 %

Table 4.17 shows that the mean value for the members in the virtual teams is 27,4 and for face-to-face team members it is 26,7. The difference in standard deviation between the two groups is 0,8 or 11 %, which indicates that the deviation in scores for communication openness is bigger in virtual teams then in face-to-face teams.

Table 4.18 shows equality of variance and equality of means for communication openness for virtual and face-to-face teams.

Table 4.18: Equality of variance and means for communication openness for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Communication openness	Virtual	1,266	0,262	0,797	244	0,426	0,70568
	Face-to-face						

Table 4.18 shows that the F-value for equality for variance is 1,3, and the sig. is 0,3. From this, equal variance can be assumed for communication openness. The mean difference, or μ_1-μ_2, is 0,7. The P-value, or sig. (2-tailed), is 0,4. No significant difference is found between virtual teams and face-to-face teams for communication openness.

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Table 4.19 shows the score of fairness for virtual and face-to-face teams.

Table 4.19: Fairness for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Fairness	Virtual	16,4016	3,68019	0,40616
	Face-to-face	16,3445	3,27403	11 %

Table 4.19 shows that the mean value for the members in the virtual teams is 16,4 and for face-to-face team members it is 16,3. The difference in standard deviation between the two groups is 0,4 or 11 %, which indicates that the deviation in scores for fairness is bigger in virtual teams then in face-to-face teams.

Table 4.20 shows equality of variance and equality of means for fairness for virtual and face-to-face teams.

Table 4.20: Equality of variance and means for fairness for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Fairness	Virtual	2,109	0,148	0,128	244	0,898	0,05704
	Face-to-face						

Table 4.20 shows that the F-value for equality for variance is 2,1, and the sig. is 0,1. From this, equal variance can be assumed for fairness. The mean difference, or μ_1- μ_2, is 0,06. The P-value, or sig. (2-tailed), is 0,9. No significant difference is found between virtual teams and face-to-face teams for fairness.

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Table 4.21 shows the score for communication quantity for virtual and face-to-face teams.

Table 4.21: Communication quantity for virtual teams (N=127) and face-to face teams (N=119).

		Descriptive statistics		
Variable:	Type of team:	Mean	Std. Deviation	Difference in Std. Deviation
Communication quantity	Virtual	19,7087	5,23436	0,23268
	Face-to-face	19,3782	5,00168	4 %

Table 4.21 shows that the mean value for the members in the virtual teams is 19,7 and for face-to-face team members it is 19,4. The difference in standard deviation between the two groups is 0,2 or 4 %, which indicates that the deviation in scores for communication quantity is bigger in virtual teams then in face-to-face teams.

Table 4.22 shows equality of variance and equality of means for communication quantity for virtual and face-to-face teams.

Table 4.22: Equality of variance and means for communication quantity for virtual teams (N=127) and face-to face teams (N=119).

		Equality of Variance		Equality of Means			
Variable:	Type of team:	F	Sig.	t	df	P-Value	μ_1- μ_2
Communication quantity	Virtual	0,250	0,618	0,506	244	0,614	0,33051
	Face-to-face						

Table 4.22 shows that the F-value for equality for variance is 0,3, and the sig. is 0,6. From this, equal variance can be assumed for communication quantity. The mean difference, or μ_1-μ_2, is 0,3. The P-value, or sig. (2-tailed), is 0,6. No significant difference is found between virtual teams and face-to-face teams for communication quantity.

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5 Discussion

In this study there is no significant differences in perceived job situation between team members in virtual teams and face-to-face team members for the different variables.

Eleven different hypothesis were tested. These will now be discussed in the light of the theory within SHRM, motivation, team and virtual team in particular.

The purpose, and the main research question in this thesis was to investigate differences in perceived job situation between virtual and face-to-face teams and thus also to discuss if it matters how the company organizes teams.

The first hypothesis stated that virtual team members would have a higher score on the customer orientation index then team members in face-to-face teams. From the motivational theory and job characteristica model it might be expected that the social dimension of the work contributes to motivation, performance and well-being of jobholders (Oldham & Hackman, 2010). One of the reasons to utilize virtual teams, is to cooperate closer with customers, vendors and other stakeholders. This is seen as important if the companies want to keep pace with rapid changing environments and to be able to develop their products and business for the future. To receive feedback on work done and understand the impact of ones work on e.g. the customer side is seen as important for the motivation (Grant, 2007). In Wärtsilä strategy it is also mentioned as important to form networks and clusters to further extend the company know-how, skills and capabilities. The data shows that there is no significant difference in the score for the customer orientation index between virtual and face-to-face teams. It is not measured whether virtual teams have more contact with customers in this case, then face-to-face teams. None of the HRM practices, or the strategy, indicate that virtual teams are utilized specifically towards customers or external stakeholders. Since employees' in both virtual and face-to-face teams might participate in several virtual teams, we do not know how the real difference in customer contact is between the two groups. Looking at the strategy of Wärtsilä, customer focus or customer orientation is what is aimed for in the vision. The vision emphasises "to be our customers' most valued business partner", and the need for "customer centricity" is also mentioned as one of the three big ideas in the company. The difference in standard deviation is 10% for customer orientation index, so it can be noted that there is a bit more alignment in the scores for face-to-face team members compared to virtual team members.

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Hypothesis number two stated that virtual teams would rate motivation and satisfaction higher then face-to-face teams. This is also drawn on the suggestion that virtual team members are utilized more for cooperation with e.g. customers. Designing jobs that contains contact with users, is argued to strengthen the prosocial behaviour and motivation. On the other side, if the virtual team member is e.g. working from home, or as a single teleworker, it might be questioned if the prosocial behaviour is strengthened and by this the motivation.
The results show that there is no significant difference in scores between virtual teams and face-to-face teams for motivation and satisfaction. When it comes to HRM practices in Wärtsilä that are motivation-enhancing, systems for performance management and rewarding can be mentioned. Development discussion are part of the performance management, and 99 % of team members in virtual teams reported in the MyVoice survey that they participated in a development discussion with their manager in the last 12 months. For the face-to-face team members 97 % reported the same. In other words, the participation is high for both type of teams. The principal aim behind the rewarding system in Wärtsilä is stated to be to attract, retain and motivate key talents by providing compensation solutions that reward employees for their performance in delivery business results. Rewarding is done on both individual, team and company performance level as a performance based salary. The use of bonus as reward, might be seen as an external or extrinsic motivation enhancing practice. It is suggested that employees often care about making a positive difference in other people's lives. In order to motivate employees, many organizations define their mission in terms of making a difference (Margolis & Walsh, 2001; Thompson & Bunderson, 2003). Wärtsilä's vision is "be our customers most valued business partner" and mission is "… to enhance our customers' business and benefit the environment". There are reasons to believe that the vision and mission is intended to, and also will influence both virtual and face-to-face teams equally. The difference in standard deviation is 6%, so a bit more alignment within face-to-face team members.

Hypothesis three stated that virtual team members would rate communication with managers' lower then face-to-face team members. This might be expected since virtual team members are not physically located close to their manager, and for that reason most communication has to be done via computer based communication tools or phone. There is no significant difference found in scores between virtual teams and face-to-face teams when it comes to rating of communication with managers. Team members in virtual teams in Wärtsilä might be part of a matrix remote team, with one local and one functional line manager.

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This practice, also having a local managers for virtual team members, might contribute to the result found. It can be noted that the questions within the communication with managers' variable indicate managers, and the questions are thus connected to both line manager and business management. The mean value of communication with managers will in this case rate both together. Questions related to development discussion are part of the communication with managers' variable. 99 % of virtual team members answered that they had participated in a development discussion with their line manager or functional manager, and 97 % of face-to-face team members answered the same. Answer percentage is considered good for both groups. The difference in standard deviation between the two groups is 7 %, which indicates that the deviation in scores for communication with managers is bigger in virtual teams then in face-to-face teams.

Hypothesis four stated that virtual team members would rate competence and development higher then face-to-face team members. From the theory it is suggested that one of the benefits of utilizing virtual teams, is that firms can benefit from having access to previously unavailable expertise and not pending on the geographical location of needed experts (Townsend et al., 1998). Oldham and Hackman (2010) are also suggesting that since team members in virtual teams in theory can be selected from around the world, based on their unique competence, such teams can be larger, more diverse, and collectively more knowledgeable than face-to-face teams. In Wärtsilä it has also been noticed that virtual teams are often bigger then face-to-face teams, where virtual teams have 11 team members in average and face-to-face teams have 8. There is no significant difference in scores found between virtual teams and face-to-face teams for competence and development. According to the HRM practices, most of the training within Wärtsilä is on-the-job training (70 %) and internal training provided from colleagues or through coaching (30 %). Only a small amount of internally provided training (10 %) is formal training in classrooms, workshops and eLearning. Internal learning and development can be seen as almost equally available for both virtual and face-to-face team members. It must be noted that measuring and comparing actual competence between virtual and face-to-face teams is not included in this thesis. From this, we do not know if virtual teams really have higher competence, nor that they for that reason should rate competence and development higher then face-to-face teams.

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The difference in standard deviation between the two groups is only 3 %, which indicates that the deviation in scores for competence and development is slightly bigger in virtual teams then in face-to-face teams. In other words, both groups are quite aligned when it comes to how they score competence and development.

Hypothesis five stated that virtual team members would rate team work lower then members in face-to-face teams. It might be expected, as mentioned by Yukl (2013), that coordination problems might be more challenging in a virtual team, especially if members have highly independent roles and they are working in a dynamic and unpredictable environment. It is also mentioned that some diverse team members might feel more committed and responsible towards their local colleagues, then to the virtual ones. Building thrust and a common team identification is also mentioned as more difficult for virtual teams. There is no significant difference found in scores between virtual teams and face to face teams for team work. The result shows that despite the mentioned challenges, also virtual team members are able to integrate their individual actions, so that their unique roles contribute to the collective success (Zaccaro et al., 2002). HRM practices connected to rewarding can indicate what is important for the business. It is outlined in the reward guidelines in Wärtsilä that plans for rewarding are made to secure that reward principles align relevant interest. By rewarding also on team and corporate level, Wärtsilä is clearly stating that team performance is important. This might also indicate that both virtual and face-to-face teams are focusing on team work. The performance of the different teams are not measured in this thesis, so we do not know if a high score on team work also gives a high team performance. It is important to secure that all HRM-practices are integrated horizontally, so that they support each other. E.g. a HRM practice that focuses on personal bonus agreement and rewarding individual target achievements might be in contradiction to HRM practices around organizing in team and rewarding team performance. It might be noted that the difference in standard deviation is calculated to be 12% between the two types of team members. This shows that face-to-face teams are more aligned with their scores then team members in virtual teams.

Hypothesis six stated that virtual team members would rate organizing work lower then team members in face-to-face teams. This result might be expected based on the suggestion that coordination problems might be more challenging in a virtual team (Yukl, 2013). Via work design, the business consciously or unconsciously is selecting how the tasks are combined to create jobs, and what methods are used to conduct the tasks. This might also include decisions regarding who is going to work together, how closely the work is monitored and controlled,

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and due to this also how much freedom each employee has in his/ her work. These decisions can have big influence on the employee's health and well-being (Mikkelsen, 2014c). Looking at the results, there is no significant difference between the two groups of team members. Seven out of fifteen questions are connected to autonomy of the work, and possibility for the employee to affect their job and way of working. From the results found, it might be suggested that none of the groups rate autonomy very differently from the other. Wärtsilä HRM-practice for competence development secures that all positions are connected to a global job position. The job description does not distinguish if the employee is part of a virtual or face-to-face team, but defines business needs from a strategic point of view. This might contribute to the result of no significant difference in scores between these two groups. The difference in standard deviation between the groups is calculated to be 6%, so the variation within the two groups is not that big in this case.

Hypothesis seven stated that the leadership index would be rated lower in virtual team then in face-to-face teams. This result might be expected since it is mentioned that diverse, fluid membership might lead to additional problems and special leadership challenges within a virtual team. Also to influence members are seen as challenging (Yukl, 2013). There is no significant difference in scores found between virtual and face-to-face teams. Perhaps the way to organize the virtual teams as matrix remote virtual teams, with both local and functional line manager has contributed in a positive way as well, to compensate expected differences between the groups. The difference in standard deviation is 10%, so less alignment is found in the scores of the leadership index among members of virtual teams.

Hypothesis eight stated that the scores for the employee engagement index would be lower for virtual team members then for face-to-face team members. This result might be expected based on the suggestion that coordination problems might be more challenging in a virtual team (Yukl, 2013). How the employee perceive the different HRM practices, will be essential for the employee attitude like satisfaction, commitment and engagement. From this it might be seen as more challenging in a virtual team to secure that all team members perceive the different practices as intended. In the end, it is the behaviour of the employee that affect the unit level, like the team, or business outcome (Mikkelsen, 2014a; Purcell & Hutchinson, 2007). One of the main reasons behind organizing in teams from a HRM point of view, is that the teams are to create a common engagement and commitment towards a common achievement (Mikkelsen, 2014a). No significant differences was found in scores between virtual and face-to-face teams for the employee engagement index.

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Both groups feel the same level of commitment and satisfaction at work. This might show that virtual teams within Wärtsilä do not experience obstacles connected to communication. Since both groups of team members are normally also part of different virtual teams, it can be expected that they are quite aware about communication challenges and that they work to overcome them in a constructive way. One strategy is to utilize Skype meetings for all team members, also face-to-face ones, to make the communication situation as equal as possible for all participants. The practice of having local managers assigned for virtual team members might also have a positive effect on the employee engagement index for this group. Difference in standard deviation for the two groups is very small for this variable, with a difference of 4%. The alignment in scores within the two groups of teams are quite similar.

Hypothesis nine stated that the scores for communication openness would be lower for virtual team members then for face-to-face team members. Building thrust is from the theory seen as one of the main obstacles getting a virtual team working well (Yukl, 2013). Looking at the scores for communication openness, no significant difference between virtual and face-to-face teams. Relevant theory describes that teams as a whole are responsible for managing themselves and each other. This is referred to as “distributed leadership” (Spillane, 2012). It means that the team members have to take the initiative for discussions, contribute with ideas and proposals, share information, ask others for information, clear up misunderstandings, summarize discussions and contribute to social community and support (Mikkelsen, 2014d). It might be that the context and internal way of working, e.g. how all team members join meetings via computer based communication tools, has contributed to secure communication openness also within the virtual teams. The difference in standard deviation is 11%, so it means that the scores varies more within the virtual teams.

Hypothesis ten stated that the scores of fairness would be lower for virtual team members then for face-to-face team members. Building thrust is from the theory seen as one of the main obstacles getting a virtual team working well (Yukl, 2013). This result might be expected based on the suggestion that coordination problems might be more challenging in a virtual team (Yukl, 2013). For this variable there was no significant difference found. Since HRM practices for performance managing, rewarding, resourcing and recruitment, motivation and engagement, learning and development and competence development aim to treat both groups in the same way, differences might not be expected in score for fairness. Looking at the difference in standard deviation between the two groups, again the virtual team members have the highest value which is 11% above face-to-face team members.

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Hypothesis eleven stated that virtual team members would rate communication quantity lower then face-to-face team members. Most questions connected to this variable or category ask if the employee find the communication adequate. Difference is not significant for this variable. It might be suggested also in this case, that the HRM practices and the way internal communication and meetings are arranged for the virtual team members manage to lower the difference. Maybe also the way to organize the virtual teams as matrix remote virtual teams, with both local and functional manager has contributed in a positive way. This result is in contradiction to what Gratton and Erickson (2007) found in their research, that as teams become more virtual, collaboration declines. The difference between the two groups when it comes to standard deviation is only 4%. By this, the two groups are quite aligned when given the scores on communication quantity.

When it comes to knowledge sharing, Wang and Noe (2010) argue that "a culture emphasizing thrust and innovation is conductive to knowledge sharing. It is also argued that "human resource practices including fairness in decision-making and open communication likely promote an organizational culture that support knowledge sharing" (Wang & Noe, 2010, p. 127). The results in this study show that there are no differences in scores for the communication openness, fairness or communication quantity between virtual teams and face-to-face teams. From the strategy of Wärtsilä it is evident that innovation is very important. Based on this it might be suggested that knowledge sharing is equally supported within both virtual and face-to-face teams.

According to Deci and Ryan (2000) and the self-determination theory (SDT), the three basic psychological needs for competence, autonomy and relatedness are currently considered necessary and sufficient to promote human growth and functioning. Also more recent research has shown that people need to feel both competent and autonomous to experience intrinsic motivation (Dysvik et al., 2013). The results in this study show that there are no significant differences in scores for competence and development (competence), organizing work (autonomy) and team work (relatedness) between virtual teams and face-to-face teams. From this it can be suggested that according to SDT, team members in both virtual and face-to-face teams have the same possibility to experience intrinsic motivation. From the work context, SDT-driven research has shown that performance management and compensation systems, job design and management/ leadership should influence the quality of employees' work motivation (Gagne & Deci, 2014).

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These HRM practices are also shown to be integrated in Wärtsilä's HRM-system, and in this study shown to influence equally in both virtual and face-to-face teams.

According to Hackman and Oldham (1976) and the job characteristica model (JCT), three psychological states was identified that trigger internal motivation while working on a task: To experience meaningfulness in the work, to experience responsibility for the outcome of the work and knowledge of the actual results of the work activities. The results in this study show that there are no differences in scores for the employee engagement index (meaningfulness), organizing work (responsibility of outcome) and the customer orientation index (knowledge of the actual results) between virtual teams and face-to-face teams. From this it can be suggested that according to JCT, team members in both virtual and face-to-face teams have the same possibility to experience intrinsic or internal motivation.

The MyVoice survey is one of the HRM practices used for involving and the participation of employees within Wärtsilä, and is seen as an opportunity for enhancing practice. Since the survey is conducted every 18 months, it gives valuable feedback to managers about current status within their team and also trends developed over time. The purpose is to collect employee feedback on issues related to well-being at work, the work environment, management and strategy, and to indicate development actions for improvement of practices. It is conducted as a part of the continuous development of operations, where empowered and committed employees are connected to efficient business performance and also satisfied customers. These dependencies goes both ways, as earlier shown in figure 3.3 (Evalua, 2015a).

5.1 Strengths and weaknesses in this study

One of the weaknesses in this study can be that the virtual teams vary when it comes to how they are organized, and some of them have only one virtual member. For this reason, the two types of team might be quite similar to each other. Some of the teams might even be closer to coacting groups, and the need for cooperation between team members not seen as that vital or important? It can be suggested that due to this, significant differences have not been possible to find for the variables in this study.

The lack of measurements regarding communication quantity, both towards customers and towards managers, can also be seen as a weakness in this study. Consequentlys it is not possible to understand if the amount of communication is different between the two groups.

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Questions and variables used are generally made to fit Wärtsilä Corporation. Wordings, like "line manager" and "customer" might be interpreted in different ways internally. E.g. is the line manager seen as the local manager or the functional team manager? Is the customer the end-customer, end-user or the yard? Or can the customer be interpreted internally as simply the next department in the activity chain, like the factory, services or the project manager? The possibility to interpret wordings differently might be seen as a weakness in this study.

By choosing teams working with project management, engineering and research and development, the functions of the teams and background of the team members are quite similar. The sililarity of the team members and their functions can be seen as a strength of this study, but on the other hand this might make it difficult to find significant differences between the two groups.

I find this study to be highly connected to the context in which Wärtsilä operates, and how the virtual teams are organized. It is seen as important how the different HRM practices within the company is integrated horizontally with each other and how the teams compensate to level out the obstacles seen and experienced in the virtual teams. From this it might be suggested that these results would be found if also other parts of the organization was included in this study. I see this as a strenght of this study.

5.2 Conclusions

The purpose of this study has been to see if different team organizing, virtual or face-to-face, has an impact on employee's perceived job situation. This is seen in the light of the company's selections of practices within best practice HRM and the AMO model, to create a high performance organization to operate in a global and complex market situation. As also mentioned by Paauwe and Richardson (1997), HRM-practices are implemented in a context. In a country, an industry or in a working group there are differences that can affect the choice of HRM-system and practice within the business, and the consequence of the chosen HRM-practices for the result of the business.

Wärtsilä has implemented a bundle of HRM practices to affect the employees' ability, motivation and opportunity to participate and perform. The performance is not measured in this study, but how the employees perceive the different practices, are seen as essential for the employee attitude like satisfaction, commitment and engagement. Same goes for employees' behaviour, like the will to develop their competence and attitude towards task behaviour.

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In the end it is the behaviour of the employee that affect the unit level, like the team, or business outcome (Mikkelsen, 2014a). From this thesis it might be suggested that both virtual and face-to-face teams have perceived the different practices in the same way. Despite this, it must be noted that members in face-to-face teams are shown to be more aligned with their scores.

From the above discussion it can be concluded that organizing teams in virtual or face-to-face teams have no impact on employees' perceived job situation. It can be suggested that the same HRM practices can be applied to people working in these different type of teams, without significant change in the employees perceived job situation.

5.3 Criticism and further research

In writing this thesis the interest for motivation in team, especially virtual teams, has increased. The author has gained a better understanding of what team is, why teams are used as an organizational unit and how people are motivated. On the other hand, it has also revealed how much more there is to know about these subjects. During the work on the thesis, multiple issues became apparent.

All survey data should have been available on team member level, and not only on team level. If they were, connections and dependences between the different variables would have been of interest to investigate.

To be able to use such a study as a more general reference, a bigger amount of teams should have been selected for the whole company and maybe also for several companies. The differences might have been more significant using this method, but on the other hand also the amount of possible variables to be considered.

It would have been interesting to go back to earlier MyVoice surveys, or even future surveys, to study the development over time of the variables among virtual and face-to-face team members. Where there any significant differences earlier, and will the groups remain similar in the future? If so, will the organization then only utilize sand dune teams for managerial and professional work that does not lend itself to the formation of fixed teams with stable membership? Such teams are suggested to have great potential, especially in fast-changing environment (Oldham & Hackman, 2010).

Theory presented indicates that it might be challenging getting team members in virtual teams as satisfied and engaged as team members in virtual teams. This study has shown that there

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are no significant differences between the two groups of team members in this context. Due to this, and the context and practices described to limit the obstacles or even compensate for them, it might be suggested that in the future it will continue to be no differences. What will be the situation in e.g. 10 years, when the millennials are fully entering the companies?

Implications for managers in business line Propulsion and 4-Stroke Engines, is that being member of a virtual or face-to-face team does not have an impact on the employee's perceived job situation. The same HRM practices can be applied to people working in these different type of teams, without significant change in the employees' perceived job situation.

Outcomes like team performance and customer satisfaction are not considered in this thesis. For future resurch, it would have been interesting to also combine these outcomes with the results from this study, to better understand the complete picture by organizing in virtual or face-to-face teams in this particular context. As suggested by Becker and Huselid (2006), has Wärtsilä with its strategy and corresponding SHRM and HRM-practices, including to organize in virtual and face-to-face teams, been able to build a company with a sustainable competitive advantage? Will it in turn create above-average financial performance? I guess only the future will tell.

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Attachment A - Codebook for IBM SPSS

Variable	SPSS variable name	Coding instructions and label, including values
Team identification	ID	Team ID
Team member identification	Idnumber	Teammember ID
Organization/ Business line	BL	1 = Propulsion
		2 = 4S
Team name	TeamName	10 = V1_P_ENG
		11 = V2_P_ENG
		12 = V3_P_ENG
		13 = V4_P_ENG
		20 = F1_P_ENG
		21 = F2_P_RD
		22 = F3_P_RD
		23 = F4_P_PM
		30 = V1_4S_ENG
		31 = V2_4S_ENG
		32 = V3_4S_PM
		33 = V4_4S_PM
		34 = V5_4S_PM
		35 = V6_4S_PM
		36 = V7_4S_RD
		37 = V8_4S_ENG
		40 = F1_4S_ENG
		42 = F2_4S_ENG
		42 = F3_4S_ENG
		43 = F4_4S_ENG
		44 = F5_4S_RD
		45 = F6_4S_RD
		46 = F7_4S_RD
		47 = F8_4S_ENG
		48 = F9_4S_ENG
		49 = F10_4S_ENG
		50 = F11_4S_ENG
Function of team	TeamFunc	1 = ENG (Engineering)
		2 = PM (Project Management)
		3 = RD (Resurch & Development)
Type of team	Ttype	1 = Virtual team
		2 = Face-to-face team
Questions Q1 - Q86	Q1-Q86	1 = Very poor situation
		2 = Poor situation
		3 = Neutral/ cannot say
		4 = Good situation
		5 = Very good situation
Organizing work	Organizing_work	Mean value score in team on dimension
Fairness	Fairness	Mean value score in team on dimension
Team Work	Team_work	Mean value score in team on dimension
Rewarding	Rewarding	Mean value score in team on dimension
Communication quantity	Communication_quantity	Mean value score in team on dimension
Communication openness	Communication_openness	Mean value score in team on dimension
Communication with managers	Communication_with _managers	Mean value score in team on dimension
Feedback	Feedback	Mean value score in team on dimension
Values	Values	Mean value score in team on dimension
Strategy and Targets	Strategy_and_targets	Mean value score in team on dimension
Customer Focus	Customer_focus	Mean value score in team on dimension
Engagement	Engagement	Mean value score in team on dimension
Workload and conditions	Workload_and_conditions	Mean value score in team on dimension
Competence and development	Competence_and development	Mean value score in team on dimension
Atmosphere	Atmosphere	Mean value score in team on dimension
Motivation and satisfaction	Motivation_and_satisfaction	Mean value score in team on dimension
Equal opportunities	Equal_opportunities	Mean value score in team on dimension
Customer Orientation Index	Customer_orientation_index	Mean value score in team on index
Change Management Index	Change_management_index	Mean value score in team on index
Employee Engagement Index	Employee_engagement_index	Mean value score in team on index
Leadership Index	Leadership_index	Mean value score in team on index

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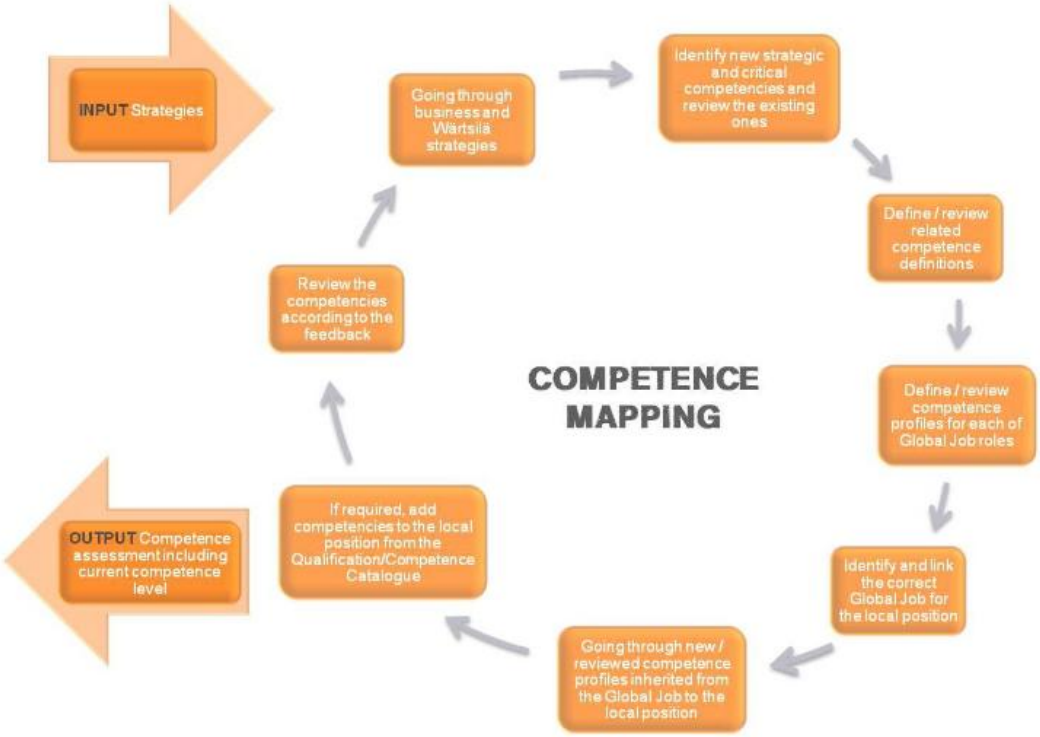
Attachment B - Process description of competence mapping in Wärtsilä

The process description is collected from Wärtsilä internal internet pages – Compass (Wärtsilä, 2016a).



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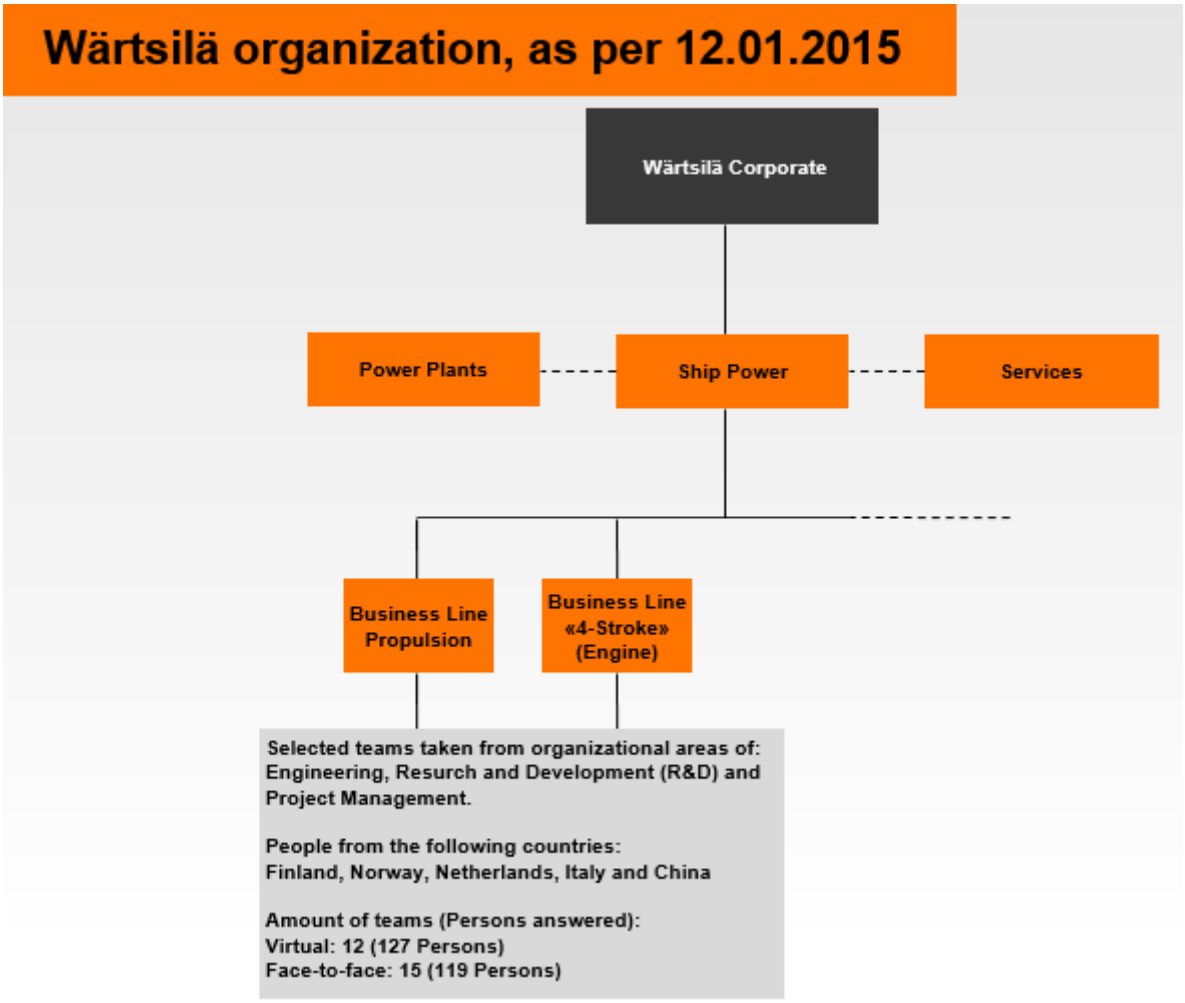
Attachment C - Wärtsilä organization per 12.01.2015



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Attachment D - Result from NSD Meldeplikttest

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

NSD

Harald Hårfagres gate 29
N-5007 Bergen
Norway
Tel: +47-55 58 21 17
Fax: +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr. 985 321 884

RESULTAT AV MELDEPLIKTTEST: IKKE MELDEPLIKTIG

Du har oppgitt at hverken direkte eller indirekte personopplysninger skal registreres i forbindelse med prosjektet.

Når det ikke registreres personopplysninger, omfattes ikke prosjektet av meldeplikt, og du trenger ikke sende inn meldeskjema til oss.

Vi gjør oppmerksom på at dette er en veiledning basert på hvilke svar du selv har gitt i meldeplikttesten og ikke en formell vurdering.

Til info: For at prosjektet ikke skal være meldepliktig, forutsetter vi at alle opplysninger som registreres elektronisk i forbindelse med prosjektet er anonyme.

Med anonyme opplysninger forstås opplysninger som ikke på noe vis kan identifisere enkeltpersoner i et datamateriale, hverken:
- direkte via personentydige kjennetegn (som navn, personnummer, epostadresse el.)
- indirekte via kombinasjon av bakgrunnsvariabler (som bosted/institusjon, kjønn, alder osv.)
- via kode og koblingsnøkkel som viser til personopplysninger (f.eks. en navneliste)
- eller via gjenkjennelige ansikter e.l. på bilde eller videoopptak.

Vi forutsetter videre at navn/samtykkeerklæringer ikke knyttes til sensitive opplysninger.

Med vennlig hilsen,

NSD Personvern

Avdelingskontorer / District Offices
OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no
TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no
TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@svf.uit.no

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