SUPPORTING EMPLOYEE ENGAGEMENT WITH INTERNAL COMMUNICATION FOR HIGH RELIABILITY

Master's Thesis
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Abstract This MA Thesis explores employee engagement in a high reliability organization via literature and an empirical research process. Employee engagement and the effect it has to an organization's performance have risen to interest both in practice and in academics, as it is one of the key factors in an organization's success. Internal communications can support engagement, and thus also affect organization's operational reliability. This thesis is a qualitative study with an abductive method of research. It has both theoretical and empirical sections. The theoretical part explains the terms employee engagement, high reliability organizations (HROs) and internal communications. The empirical part describes the research process, where data was collected via six expert interviews from an information technology organization and then analyzed to answer the research questions on the significance that engagement has in HROs, how it can be affected with internal communication, and how those together build an organization's operations in a reliable and safe way. The research shows that employee engagement is a notable factor in an HRO's success and that internal communication can have an effect on it, within a suitable organizational culture.	
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Tiivistelmä

Tämä pro gradu-työ tarkastelee kirjallisuuden ja empiirisen tutkimuksen avulla työntekijöiden sitoutumista organisaatioissa, joiden toiminnalle korkea luotettavuusvaatimus on edellytys. Työntekijöiden sitoutuminen ja sen merkitys organisaation menestykselle on noussut kiinnostuksenkohteeksi niin käytännössä kuin akateemisen tutkimuksen piirissä. Sisäinen viestintä on yksi väline jolla sitoutumista voi tukea organisaatiossa, ja sillä on myös merkitystä organisaation toimintavarmuudelle.

Työ on laadullinen tutkimus, joka toteutettu pääosin abduktiivisella tutkimusmetodilla. Työssä on sekä teoreettinen että empiirinen osuus. Teoriaosuus käsittelee työntekijöiden sitoutumista, korkean luotettavuusvaatimuksen organisaatioita (HRO) ja sisäistä viestintää. Empiirisessä osuudessa kuvataan tutkimusprosessi, jossa kerättiin aineisto kuudella asiantuntijahaastattelulla informaatioteknologian alalla toimivasta organisaatiosta. Empiirisessä osiossa pyrittiin vastaamaan seuraaviin tutkimuskysymyksiin: mikä merkitys sitoutuneilla työntekijöillä on HRO:issa, miten sisäisellä viestinnällä voidaan vaikuttaa siihen, ja kuinka nämä yhdessä rakentavat organisaation operatiivisesta toiminnasta luotettavaa ja turvallista.

Tutkimuksen tulokset osoittavat että työntekijöiden sitoutuminen on huomionarvoinen osa HRO:n onnistumista ja että sisäisellä viestinnällä voidaan vaikuttaa siihen kannustavassa yleisessä organisaatiokulttuurissa.

Asiasanat: työntekijän sitoutuminen, sisäinen viestintä, korkean toimintavarmuuden organisaatio, organisaatiokulttuuri

Säilytyspaikka Jyväskylän yliopisto, Viestintätieteiden laitos

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1 Introduction

It was a rainy, dark evening at London's Stansted airport on Wednesday, 22 December 1999. At about 6.30 pm on runway 23, Korean Airlines' Boeing 747 freighter on flight number 8509 was cleared for takeoff. The plane had arrived to London from Tashkent and was now heading to Milan. Soon after takeoff, a device called ADI comparator rang an alarm, implicating that the captain's view on the horizon was not correct. The unreliability of this device was already noted in the previous flight and was attended to by an avionics engineer at Stansted. The late departure apparently irritated the pilot, as he was heard speaking to his first officer quite harshly, which was definitely not inviting him to any extra conversation. (AAIB 2000; BBC News 1999; Halsey 2013; planecrashinfo.com 2015.)

As the pilot started to make a banked turn which would tilt the plane a bit, his comparator did not register that the plane was banked already, and continued to tilt the plane. The captain, a former military pilot, continued tilting, as the first officer, 20 years his junior and with far less flight hours, had his own comparator in front of him which accurately indicated that the horizon was in a strange position. A warning alarm continued to ring, but no discussion was started inside the cockpit regarding it. Less than a minute after, the jet's wing hit the ground and it exploded, killing all four crew members. (Halsey 2013.)

The reason of the crash was later determined; it was the unsafe organizational culture that existed inside the airline, combined with technical issues. This culture prevented the first officer from reporting his observation of the plane's dangerous position in the air, with fatal results. The hierarchical culture inside the organization suggested to submissive, humble attitude towards older colleagues in a higher position. No way could a young, inexperienced first officer have felt that he could express a concern regarding a mistake his captain was making. The official investigation report by British authorities made a formal recommendation for the airline to revise its organizational culture and to encourage for less formal atmosphere between captains and their crew. (Halsey 2013.)

The above example is to give a concrete reference in a nutshell on the topic of the research at hand. As it clearly shows, when working with complex technology in demanding conditions, trust, communication and awareness are a must: the person responsible must be engaged to the task at hand. If any of these fail, the consequences can be disastrous. Currently, more and more organizations have become highly dependent on complex, high-level information technology, which makes their operations also more complex.

This invites to the topic: what is employee engagement, especially in a high reliability organization, how it can be supported with internal communication, and why should it be attended to. The aim of this thesis is to provide a current view on the theoretical definitions of employee engagement and high reliability organizations; to explore on how employee engagement is formed; and to find out what kind of a role internal communication might play in the formation of employee engagement and subsequently what effects it might have on an organization's reliability.

Consisting of both a theoretical and an empirical part, this thesis will present the importance of employee engagement and functioning internal communications, focusing on organizations that face demands for high operational reliability. The empirical part of the thesis consists of data collected specifically for this thesis, its analysis and the results. First, the empirical part explains the research questions, research method and validity. The reasons and process of choosing the source for the data and the data collection process are then explained. In the final chapters, the data analysis is reported and findings from the data are presented. At last, final conclusions are drawn as well as suggestions for further research and a final summary.

The theory presents and explains key terms based on recent and recognized researches. The data for the empirical part was collected from the Finnish information and communications technology sector in 2015, via six expert thematic interviews. Further on, the data was processed and analyzed by conducting a qualitative content analysis, according to the qualitative research tradition. The theoretical part will explain theoretical framework and explore reasons why employee engagement matters to high reliability organizations, and why modern-day organizations should consider their reliability. The theoretical part will also explore the motivational theory which affects the forming of engagement, and why it could be beneficial for organizations to be aware of these.

2 Employee engagement

Employee engagement has emerged as a topic of interest lately among researchers and organizational professionals. Engagement to one's employer, to an organization, is a subjective experience which is influenced by an individual employee's internal and external factors. It is related to motivation and has a big effect on employee performance and thus to the entire performance of the organization. (Bridger 2015, 28; Riikonen, Tuomi, Vanhala & Seitsamo 2003, 35; Quirke 2008, 13, 297.)

Earlier interest into employee and work engagement has been present in the field of organizational psychology and motivational theorists, but during the past years interest into the topic has also risen in the field of business studies. Many organizations have done research regarding the engagement level of their personnel, typically via regular or irregular surveys. However, these kind of standard surveys tend to be just those - completed surveys, which are seen as the end result, when those should actually be the starting point. The results of these quantitative studies are often just received by the management and sometimes communicated to the personnel, but not taken in use resulting into actions. (Bridger 2014, 53-54.)

Engaging in an action accelerates gaining expertise in it, so for an organization, engaged employees are an asset as they can become better in their profession and thus produce more value (Swap, Leonard, Shields & Abrams 2001, 97). Employee engagement is a critical asset, constitutes a competitive factor and affects an organization's reliability and productivity. The personnel of an organization are a critical resource for all of its success, and engaged employees are willing to put in a true effort for the organization they work for (Riikonen et al. 2003 39-40).

Forming emotional engagement is natural for humans. People want to belong to something they care about and can be proud of. When new employees start to work at an organization, they care about the company. If this caring starts to vanish, this usually is due to lack of leadership and other organizational characteristics rather than individual reasons. People usually prefer to work for an entity that does well, but also is good and does good. (Sirota et al. 2005, 140.)

Doing good relates to an organization's moral character, how it behaves ethically and legally. People have a need to feel pride in what they do, be it saving lives as a fireman or producing excellent IT services. Most employees want to stand behind what their employing company does. (Sirota et al. 2005, 148.) Companies that have practices and policies that generate employee enthusiasm often have also improved business performance (Sirota et al. 2005, 44). Enthusiastic employees identify with their employer and eventually feel that the organization's success, or failure, is their own. This goes beyond calculation, such as that there will be a salary raise if the company does well. It is a psychological and economical phenomenon. Part of the employee's self-image is connected to their employer, and thus company performance feels like their own performance. (Sirota, Mischkind & Meltzer 2005, 39.)

The effects that employee engagement has to organizational performance have been learned long ago, but why has it become more interesting currently? The nature of work has changed radically in Western countries during the past few decades. Technology has developed rapidly, and the global economy has reached a new era of globalization. The ways and culture of working and living have changed significantly, and this has affected people's everyday life, not only in practical matters but also in their thinking and values. (Räikkönen 2007, 7.) Especially the new technological innovations in genetics, robotics, nano and information technology have an impact to the way work being done (Räikkönen 2007, 22, 24).

The increase in speed and competitiveness in the industrial and economical world has had consequences for working life (Räikkönen 2007, 8). The ideal employees of the future are multi-professionals who know the technology, have good social skills, can complete several tasks at once both independently and as a part of teams, adapt to changes fast, and are also aware of the environmental impacts of their work (Räikkönen 2007, 56). Moreover, they are fully engaged and willing to give their best possible performance.

Competition and ever-growing demands for professional skills and abilities put a strain to the meaning of work. While insecurity becomes an everyday companion in the working life, the amount of work and its challenges add up, and well-being at work becomes more important to maintain the strength to keep working. Experiences of success and significance are important in this and can help employees grow and develop themselves. (Laurén, Tenhunen-Ruotsalainen & Väisänen 2012, 31-33; Räikkönen 2007, 57.)

Many of the jobs in Western world have become *knowledge work* (Müller, Juntunen, Liira & Lönnqvist 2006, 2951). It is work that requires searching, receiving and handling information, problem-solving, and the use of different technologies and applications. These post -industrial working environments are also places for continuous learning and development of one's skills and abilities. Cognitive actions such as processing information and acting on emotions become emphasized. (Müller et al. 2006, 2951.) Knowledge work demands attention, genuine interest and enthusiastic attitude, in order for one to produce best possible performance in it. This means engaged employees, and thus employers should recognize the demands of knowledge work.

Joensuu (2006, 43) says that engagement in an organization's activities leads to higher satisfaction and efficiency. In the post-modern working life, the traditional models of engagement are no longer valid; an employer's demand for ever-lasting employee flexibility is becoming old-fashioned and actually might be a preventing factor for forming engagement. (Joensuu 2006, 23.) According to Joensuu, the discipline of public relations which this thesis also represents, has originally presented the employee as someone who has understanding and trust towards the organization; feels engaged with the help of communication; has an active desire to have an impact; can adapt fast to previous models of behavior, and should know that an employee is an important resource to the organization (Joensuu 2006, 43). However, the working life has changed, notes Joensuu (2006, 65-66); the amount of available information is massive, and there is an over-emphasized feeling of insecurity. An employee is expected to learn continuously and utilize these skills in favor of the employer, in order to keep their value as an employee (Joensuu 2006, 66). In this new situation, information, knowledge and communication skills become the employee's only capital, so organizations face a challenge in utilizing it to their own use (Joensuu 2006, 65-66). Other challenges are high turnover of employees, lack of engagement, commitment and loyalty, and the mismatched relationship between skills and schooling (Joensuu 2006, 66-67).

As a result Joensuu (2006, 69) draws a picture of new employees in the post-modern era. They feel no loyalty or engagement, but rather insecurity and adaptation. They want to develop to keep their value and find motivation from learning new matters, but are passive about joint matters and have only interest in what serves their personal development. These new kind of employees can also be critical of existing operational models, have no or only a little respect towards authority and hierarchy, feel their value being set by current market situations, use information and knowledge as power, and might present traits of narcissism, individualism, demoralization and lack of motivation in a life that consists of separate projects following one other (Joensuu 2006, 69). For leaders, managers and organizational communicators, these post-modern employees might not be easily motivated and engaged.

For more and more people, it is no longer sufficient to just go to work and get paid to do so. Similarly, it is no longer sufficient for organizations to just get the tasks done by their employees; they need to be done with full attention and with the utmost level of performance, hopefully generating better ideas and innovations at the same time.

2.1 Defining the term employee engagement

When considering the emotional bond an employee has to an organization, and the manifestations of that, there are several related concepts in literature, such as employee, work or organizational engagement or commitment. Many of these concepts overlap. In the following Table 1, the key concepts are explained based on theory. After this, it is reasoned why the term chosen in this study was employee engagement.

Table 1. Key definitions of employee engagement, as well as which discipline they derive from

Source, School of Science	**Keyword**	**Definition**
Kahn 1990, p. 694 Psychology	Personal Engagement (at work)	The harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during (work) role performances.
Macey & Schneider 2008, p. 6, HR, Leadership	Employee Engagement	Three types of engagement: State engagement: psychological state Trait engagement: personality Behavioral engagement: actions
Schaufeli and Bakker 2010, pp. 12-13 Organizational Psychology	Work / Employee Engagement	A particular mental state that assumable produces positive outcomes at the individual but also at the organizational level. Employee engagement is the personal relation to the specific organization, currently employing them.

Source, School of Science	Keyword	Definition
Bridger 2015, pp. 4-6, 7-8 Human Resources Management	Employee Engagement	An internal state of the employee: an attitude, a behavior and as an outcome. Emphasis on the employee's personal involvement in the existence of their employing organization, and the two-way process that forms engagement.

One of the earliest researchers interested in engagement was Kahn in 1990, when he studied the psychological conditions of engagement at work, as well as disengagement. Kahn defines personal engagement as the harnessing of employee's self to their work role. While engaged, "people employ and express themselves physically, cognitively and emotionally during role performances" (Kahn 1990, 694). There are dimensions in people that, in appropriate conditions, they prefer to use and express, in work also (Kahn 1990, 700). On the contrary, personal disengagement is the withdrawal and defense on the self, resulting in cognitive and emotional absence and passive, insufficient work performance (Kahn 1990, 701).

Kahn's (1990, 702) premise is that people express their preferred selves at work based on their psychological experiences of self-in-role, focusing on the conditions that should be met so people can become personally engaged. He defined three conditions: meaningfulness, safety and availability (Kahn 1990, 703). Meaningfulness is a return on investment of one's self: feeling worthwhile, valuable and making a difference. Further on, Kahn found three factors influencing psychological meaningfulness. These are task characteristics, role characteristics and work interactions. (Kahn 1990, 704.)

Safety refers to feeling that they are able to show their self without fear of negative consequences to their status, career or image. Employees want to trust that they won't be hurt by their engagement. This is a result of clearness and consistency in situations, consisting also the awareness of boundaries in interpersonal relations at work as well as organizational norms. (Kahn 1990, 708.) These are all organizational traits that can be supported by each member of the organization, but especially by line managers and leaders.

Availability is the notion of having emotional, physical and/or psychological resources to engage oneself personally. It can be influenced by physical and emotional energy, individual insecurity and outside-of-work life. Physical energy must be present in order to complete the tasks, but being engaged requires a certain amount of emotionality, too. Insecurity of one's self leads to anxiety and distraction, self-consciousness and ambivalence about fitting into an organization. Events in outside life can preoccupy employees' minds and act as a distraction. (Kahn 1990, 714-717.) As much as employers might hope that their employees have all of their thoughts on the job during working hours, unfortunately this is simply not possible, as humans can't control their minds completely. The employee is a complete person also in the workplace, and they can have times in their lives when their minds aren't focused solely on the work, even if they wanted so.

Macey and Schneider (2008) have concluded a comprehensive, widely referenced view on the term for academics. They start by noticing that as a psychological phenomenon, it is not precisely defined as it is used both related to a state of affectivity as well as to performance in one's work role (Macey & Schneider, 2008, 5). This ambiguity does not, however, make the concept short of practical or conceptual utility. It can be defined both from attitudinal as well as from behavioral point, and Macey and Schneider (2008, 5) present them both, just reminding that it should always be made clear from which point the concept is approached by practitioners and researchers.

Macey and Schneider (2008, 6) give the following framework for defining engagement: it can be recognized as *trait engagement*, referring to an employee's personality; *state engagement*, referring to employee's current feelings like involvement or commitment; and *behavioral engagement*, referring to the employee's behavior as a member of the organization.

According to Macey and Schneider (2008, 9, 11, 13) engagement as a state is the psychological, quite stable state in which employees feel committed to the organization, their self-worth is involved and they have willingness to invest effort. There is an investment of the self in work, and thus the outcomes of work, as well as the membership of the organization, are important to an employee's identity. They feel enthusiasm, alertness and self-presence at work (Macey & Schneider 2008, 14). As for the term organizational commitment, it can be regarded as an important facet of state engagement, but not equivalent to it, and the same applies to job involvement (Macey & Schneider 2008, 8-9).

When viewing engagement as a behavior, it should be clear what the frame of reference is: other organizations or other employees in the same organization. Macey and Schneider (2008, 14) find that an occasional, concrete extra effort is a limiting way to define behavioral engagement; it is more of proactively seeking opportunities of contribution, being innovative an initiative and notably going beyond of what is expected given in a specific frame of reference. Macey and Schneider (2008, 16-17, 19) also note extra-role behavior that is seen as an indicator of behavioral engagement, meaning the wideness of tasks one is willing to take on, as well as adaptive behavior, referring to behaviors responding to and supporting organizational challenges and changes.

The third recognition, trait engagement, consists of those personal, interrelated attributes a person may have that incline the possibility to experience also work in a positive, active and energetic manner. Such attributes are proactivity, positive affectivity and conscientiousness as well as general positivity towards life and work. (Macey & Schneider 2008, 6, 25.)

Tying all of their work on the term together, Macey and Schneider (2008, 24, 25) propose that behavioral engagement follows from state engagement. Trait engagement offers a ground for both, but is most critical in the early part of employment, where management-driven activities such as organizational orientation will relate to later development of state and behavioral engagement. From an organization's point of view, notable in Macey and Schneider's conceptualization is that engaged employees might very well be a competitive advantage, and that once the conditions for engagement are right, it is an asset very hard to imitate by others (Macey & Schneider 2008, 26). This organizational person-environment fit can be induced to certain extent, when knowing that for example organizational values consistent with the employee's personal ones will likely assist higher level of state engagement and wider adaptive behaviors. The organization and more particularly its values and goals can present a source of attachment and commitment, leading to identification with the organization which manifests as adaptive behaviors supporting its long-term interests. (Macey & Schneider 2008, 23.)

Schaufeli and Bakker (2010, 10) also note that the terms of work and employee engagement are used interchangeably, but make a clear definition between work engagement and employee engagement; employee engagement includes also the relationship with the organization that is the current employer, whereas work engagement relates to engagement with the individual's work tasks in itself. Therefore, even when the employing organization changes, the occupation and its related work tasks may remain a focal point for engagement. (Schaufeli and Bakker, 2010, 10-12.)

However, Schaufeli and Bakker do note that the above distinctions get easily blurred as no agreement among scholars or researchers exist on a strict conceptualization of engagement, be it work or employee one. As the topic has become popular in business areas, especially in human resources (HR) and organizational consultancy, this also brings new definitions, connotations and meanings to the term from practice. (Schaufeli & Bakker 2010, 11-12.)

In academic definition, Schaufeli and Bakker refer to Kahn's pioneer work. Engagement is not just being fully present psychologically, but showing a behavior that manifests one's presence, meaning that engagement is a particular mental state that assumedly produces positive outcomes at the individual but also at the organizational level. (Schaufeli and Bakker, 2010, 12-13.) In psychological sciences, engagement is sometimes considered as the antithesis of burn-out. This refers to an individual's work activity, not the role, which was a key point for example Kahn, as well as for Schaufeli and Bakker themselves.

Bridger (2015) offers a recent definition, from the HR practice point of view. According to her, employee engagement appears as an internal state of the employee. It is something that the employee might be able to offer, but that cannot be required by employers in a contract; although from a human resources viewpoint engagement has effects not only on people's attitude and behavior but also on business outcomes (Bridger 2015, 4-6).

As these sources present, engagement is not something that can be clearly defined. All of them recognize though that engagement is always somehow related to an individual's internal state-of-mind, and has an emotional aspect. It develops and evolves during the entire work life and career of an individual, and may be different with each employing organization. As the phenomenon has been approached by several academic disciplines, it may seem challenging to find a combining factor or general definition. Based on the sources explored on this chapter, in the following the chosen definition regarding this thesis is explained.

2.2 Employee engagement as the term of choice

As often in humanities, this is one of those matters where each research forms its own definition taking into account the context and the target. In this thesis, the chosen term is employee engagement, because the organizational and HR viewpoint should be clear; this research is about the engagement of employees who are performing the tasks at their workplace. Also, one other reason to choose this term was a semantic one, as it emphasizes the complexity of the phenomenon, and also the fact of it being an internally developed state. In this thesis, engagement is seen from an attitudinal point of view, as it is an inner state relating to an employee's motivation and feelings towards the organization – which of course still has behavioral manifestations, or so it is at least hoped in the demanding high reliability working environments (Macey & Schneider, 2008, 5).

This is based also on the same foundation as to why Bridger uses the words employee engagement: it is "easily understandable, accepts engagement as an attitude, a behavior and as an outcome, and it emphasizes the employee's personal involvement in the existence of their employing organization". And since there is a personal involvement, it means that the values of the employee and the organization must not conflict, so engagement is a two-way process between the employee and the organization. (Bridger 2015, 7-8.)

Based on the definitions by the scholars presented in this chapter, in this thesis an engaged employee is seen as someone who has a comprehensive feeling of attachment to a larger entity than just position, paycheck, or the concrete actions that form their tasks. A commitment can be seen as an agreement, as in when an employee commits to coming to work every day to receive their paycheck. Engagement is something that can grow gradually and form within a longer period of time, without a conscious decision and often within a unique community with a shared history.

3 Definitions of high reliability organization

The term "high reliability organization" (HRO) has been used since the 1980's, but it is still a bit vague and as modern society is changing, the definitions adapt along with it, as they should. The related research was started by a group of researchers of Berkeley University some 30 years ago, when they took notice that there are organizations that can and have operated reliably and practically accident-free for decades, even in very difficult circumstances and with a high risk. (Hopkins 2007, 3.)

The textbook examples of high-reliability organizations are nuclear power plants, air traffic controllers and nuclear military equipment (Weick, Sutcliffe & Obstfeld 1999, 32). The definitions are highlighted in Table 2 and opened in the following text. In Table 2 also the communications aspects are listed and opened later in this thesis, in Chapter 5.

Table 2. Definitions of high reliability organizations

Source	Definition	Note on communications
Compton, 2008, pp. 14-15, 20: High reliability leadership: Developing executive leaders for high reliability organizations.	Organizations that manage complex, demanding technical systems, and use demanding technologies; operate in an environment with a potential risk; and have previously proven to be safe and reliable. Further definition is needed according to Compton, as environments and risks are continually changing and new ones emerge.	Managing communications, managers' and leaders' (communicational) competences.
Hopkins, 2007, pp. 6-7: The problem of defining high reliability organisations.	An HRO is defined via it's processes and policies: best practices allow best possible perfomance.	Open and functioning communications, well-working leadership.
Lekka and Sugden, 2011, pp. 443-451: The successes and challenges of implementing high reliability principles: A case study of a UK oil refinery.	HRO's are defined via their operational environments. An HRO operates almost flawlessly in an environment where circumstances are challenging or dangerous and where a mistake would have catastrophic consequences.	Openness, learning from mistakes, two-way and dialogical communications, good introduction and orientation for new organization members.
Lekka and Sugden, 2012, pp. 544-550: Working towards high reliability: A qualitative evaluation.	Organizations which are able to maintain high levels of safety and reliability despite operating in contexts where the consequences of error could be catastrophic.	Senior leaders encourage to bottom-up communication of noted issues and bad news. Organizational culture that fosters open reporting and enables strong learning culture.

Source	Definition	Note on communications
Weick, Sutcliffe and Obstfeld, 1999, p. 81-123: Organizing for high reliability: Processes of collective mindfulness.	HRO's are defined via their operational environments: either according to the effects a risk has come true or based on the policies and practises an organization operates.	Learning from mistakes, culture where bringing up issues is allowed, being prepared.

Compton (2008, 15) described a high reliability organization as "an organization that uses a demanding technology, operates in an environment with risks but has proven that it can be safe and reliable".

Weick, Sutcliffe and Obstfeld (1999, 32) defined these organizations according to their operational environment relying on Rochlin's research in their literature review: should an HRO have a disruption in operations or encounter a crisis, it would cause one or more of the following: the error is unforgivable and unrepairable; there is a great chance of error; the consequences would be so great and serious that trial-and-error is not a possible learning method; the errors are avoided by acknowledging the several, variable possible weaknesses; and the organization operates in an environment with interrelated processes in order to manage complicated technologies.

Hopkins (2007, 7) has had a comprehensive look at the definition of HRO in the literature. He pointed out that it is difficult to define it via safety statistics, and that reliability is not always reliable to safety (Hopkins 2007, 4). Another way to define it that Hopkins found was by the technology used: if it is complex, tightly coupled, demanding and hazardous, it requires the organization to be an HRO. However this definition excludes some organizations that due to other reasons are considered an HRO. (Hopkins 2007, 6.) Thus, Hopkins further inspected Weick and Sutcliffe's definition about the processes that HRO's follow to "prevent the unexpected". This happens by being preoccupied with failure, not simplifying interpretations, being sensible to operations, being committing to resilience and being deferent to expertise, which is expressed with a flexible internal decision-making. These together can produce a state of collective mindfulness, which enables best possible organizational performance. (Hopkins 2007, 7.)

Compton (2008, 14), who studied leadership in HROs, says that according to research the following are HROs: nuclear plants and nuclear submarines; emergency rooms; organizations in nuclear weapon industry ans oil drilling industry; civil and military air control; fire and safety department; and military organizations. Based on literature review, Compton (2008, 15) defines HROs as organizations that use complex and interrelated technological systems, that are related with significant risk of an accident, but still can operate safely and reliably for long periods of time.

Lekka and Sudgen (2011, 7) defined HROs as organizations that can operate almost flawlessly in environments where circumstances are challenging or dangerous, and where the consequences of a mistake would be disastrous. Later, Lekka and Sudgen (2012, 544) drew a more comprehensive view on the different definitions of an HRO, based on their previous study and literature. HROs are organizations that can maintain a high level of safety and reliability despite operating in context in which errors could lead to catastrophic consequences (Lekka & Sudgen, 2012, 544). Characteristics of HRO are: problem anticipation; being learning-oriented; being led with mindful leadership; and having a just organizational culture as well as a containment of unexpected events. (Lekka & Sudgen, 2012, 545.)

Organizations that exist in demanding operating environments, either because of their processes, technologies or their industry, have to take a special interest into the risks they face to ensure their reliability in every possible situation. Of course, sometimes the risks do become reality. Several disastrous, different accidents have been reported in the news just during the past decade, and not all of those are related to nuclear sciences or air traffic. One example of a severe accident from the past few years is the explosion and the following environmental disaster of Deepwater Horizon's oil rig in the Gulf of Mexico in 2010 (Ocean Portal 2015). The oil rig exploded and sank, killing 11 people and leaking an estimated 3, 19 million barrels of oil into the ocean. The complete effects the spill has on the area's marine and beachline ecosystem and the human communities are yet to be seen. (Ocean Portal 2015.) An ocean oil rig is a massive constellation combining complex technology and challenging operating environments, where a possible error or accident is not only fatal to humans and organizations, but may impose a threat of complete destruction to the environment. As sustainability and corporate responsibility have risen to wider awareness, today's HROs have a responsibility of being reliable towards future generations also.

Defining high reliability organizations has been an on-going work. As many of the sources mentioned in this chapter state, the definition still needs some further work. However, from the practice and research point of view, it might be more beneficial to recognize that the definition is a flexible one and should stay that way, since the operational environments and organizations are constantly developing and facing new challenges and needs to evolve. A definition of an HRO might always have to be tied to the current time and the challenges and risks currently present.

3.1 HRO as a work environment

HROs have been studied also as demanding cognitive working environments, as they have a lot of technology and demand their employees of managing several tasks at the same time. The employees must often complete several tasks simultaneously, with sub-processes occurring on overlapping timelines; their attention has to be divided, transferred and focused smoothly from one task to another, not mixing matters that are unrelated. They also have to actively think of information regarding to other tasks that are not currently on the works, but will need attention later on. (Müller et al. 2006, 2953.)

Working for an HRO means working in demanding operational environments with complex technologies and ICT systems. This strains the human brain’s information processing, as the work includes passive monitoring, active routine tasks and sudden reactions when an issue or a disruption occurs, requiring processing of information and decision-making under time pressure. Humans, who are unique in their individuality and limited by their biology, are the only ones who can produce the solutions needed. (Müller et al. 2006, 2951.)

When working in an HRO, being engaged can, at very least, make the work easier, when no energy has to be used in actively staying focused and alert. Working for joint goals and having feelings of purpose can take out some of the strain of a stressful working environment. Sometimes engagement can even be the definitive factor of success; noticing and being able to react to sudden events may be a crucial factor in preventing crisis or accidents.

3.2 Challenges with information exchange today

Each individual has their own history and personal framework, shaped by personality, temper and abilities. People cannot have exactly identical views of the surrounding reality, as different matters rise to attention for different observers. With constant social interaction, people can however have the ability to understand others' point of view through their emotions and experiences. This is called *social cognition*, which is dependent to situations as it utilizes different non-verbal clues, such as facial expression and tone of voice. (Müller et al. 2006, 2953.)

The radically evolved working life challenges the possibilities for collective problem solving in a face-to-face situation, as global organizations have functions in several locations and countries, and their staff has to communicate via different technologies. ICT-systems filter out much of the emotional information, so the brain needs new abilities to process human messages received via artificial channels. The networks and teamwork of today's working life mean cross-generation and cross-cultural cooperation, demanding the ability to understand one's own intentions as well as others'. In addition, as there are constant changes to be faced, internal and external flexibility is a crucial ability. (Müller et al. 2006, 2953, 2954.) Employees are constantly faced with massive amounts of information, and not all of it is relevant; there is a constantly growing need for coherence. (Müller et al 2006, 2951; Quirke 2008, 255). Attention to information ergonomics has to be paid, as the risk of a mistake and oversight of relevant information grows if high levels of information are exchanged, especially if much content is irrelevant to the task but still claims attention, which is a limited resource in humans. (Müller et al. 2006, 2954.)

In an HRO, the delivery of correct information usually has to be impeccable, as everyone has to be on top of what is happening and know if there are any anomalies or changes. Information breakages or misunderstandings can pose a severe threat to the safety and reliability of operations. The conditions and technology should be as supportive as possible to an open information exchange.

4 Internal communication

Internal communication is a branch of organizational communication which sometimes gets lesser attention, especially today when it seems to be all about joined content, communities and social media platforms in the spotlight of communications practice. In this chapter, internal communication and organizational culture are explained conceptually, and the nuances of an HRO's communications are explored. Following that it is argued why an organization needs to have a functional, strategic internal communication.

Internal communication can sometimes be considered as something that happens by itself, e.g. when the managers are just talking with their employees. Smith and Mounter (2005, 12-13) describe it at its most simple form as an organization's two-way communication, needed to ensure day-to-day smooth running of operations. Corporate goals have to be shared, as well as information delivered to the workforce regarding what is expected from them (Smith & Mounter 2005, 14).

The traditional view of internal communication is management providing announcements and sending their views and decisions to the work floor. In reality, internal communication is the spearhead of leading change, and can help align employee efforts, share knowledge and engage employees, leading to strategic advance. (Quirke 2008, 3.)

Quirke (2008, 13) points out that if an organization wants achieve the best performance, its management must be able to show the connection between its success and employee performance. A strong link needs to exist between the leaders and those who implement the work, and that link can be provided by communication. According to Quirke (2008, 13), the desired overall result of this would be:

> A shared understanding of the organization's strategic business situation; what is needed, what it is and how come it is so.

Goals, values, mission and vision are often expressed carefully to the outside stakeholders, but it should be just as important to communicate these to employees, who are internal stakeholders. Often the manifestations of values, mission and vision to the outside can be faced with skepticism inside of the organization (Sirota et al. 2005, 154). Here again the internal communication would be a key function in explaining an organization's goals, values, mission and vision – and engaging employees.

Internal communication is crucial for organizations to function, according to Vos and Schoemaker (2011, 87). One of the general organizational communication objectives is strengthening cooperation in the organization and support of change processes, which naturally falls to the internal communication's slot (Vos & Schoemaker 2011, 33).

4.1 Organizational culture

Whenever a herd of people join together to reach a shared goal, they form an organization, as has happened for thousands of years to date. A modern organization is often viewed as a rational entity, but according to Juuti (1995, 72) it is in fact everything but rational. Organizations are formed by belief systems, which can have different views on everything: how the work is construed, tasks are formed and what presuppositions are set for the people performing them (Juuti 1995, 72).

Organizational culture means the typical models of thinking and acting inside an organization. It becomes visible in actions and in what the organization produces, and has different levels, such as from an individual to a team, or organizational, country or global level. (Juuti 1995, 72.)

Internal communication's quality is related to organizational culture. Two-way communication, listening to the employees and keeping staff accordingly informed are important to high-quality internal communication (Vos & Schoemaker 2011, 88). Communication is also in itself an expression of organizational culture. There is no such thing as a right organizational culture, but it can be a functional one. However, the organizational culture can be influenced only to a certain extent and that should not be the goal instead of improving efficiency and productivity (Vos & Schoemaker 2011, 100).

Schein's (1984, 3) formal definition of organizational culture is:

> Organizational culture is the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that worked well to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, thin, and feel in relation to those problems.

An organization's culture becomes visible via symbols, stories and practices. Some of these are material and visible, such as certain words used only inside the organization, or agreed ways of acting; some are immaterial, invisible and even preconscious. (Juuti 1995, 73; Novelskaité 2015; Schein 1984, 4.)

Juuti (1995, 73-74) says that a community "forms simplifications that are stored in the deepest layers of culture, in order to interpret situations and reach unified models of actions. If this did not happen, operations and actions would not seem reasonable and predictable, as a shared social code would not exist. This social code guides actions and is the basis for interpretation". People have a natural need for consistency and order, so assumptions tend to be set into coherent patterns, cultural paradigms, to structure what is happening. Organizational cultures have these too on a smaller scale inside the company or community. (Schein 1984, 4.)

Schein (1984, 5) gives an example of an organizational culture paradigm where truth can only be acknowledged if it is tested pragmatically, or where people with the highest status and best education can only express the truth. Defining these kinds of cultural paradigms, or borders and joint belief systems, helps regulate an organization's emotional state, and members can feel stability and safety, producing also joint social defense mechanisms. These mechanisms support belief systems and organizational culture, helping to protect individuals and the community from emotional conflicts. However, organizational social defense mechanisms have a con; they set some limitations to interaction and problem solving, by preventing freedom of thinking when problems or issues emerge at work. (Juuti 1995, 73-74.)

For an HRO, it is elementary that the organizational culture is the kind where these limitations can be broken, if the situation demands it. Questioning new ways of thinking and creativity in problem solving must be able to exist, in order for the organization to learn and continue reliable operations (Lekka & Sudgen 2012, 546). It would be highly damaging if, for example, such a paradigm that only highest-status staff are deemed right, was to emerge in an HRO, as the highest-status staff members are not always available. All employees should be able to express their concerns, observations and creativity. (Weick et al. 1999, 39.) Engagement can be formed only in a suitable organizational culture; it can't exist on its own as the relationship an employee forms is not only between the individual and the employer, but with the entire organization.

4.2 Practices of internal communication

As established in the previous, in order to succeed, an organization needs its internal communication to be taken care of. Learning about the factors that make people engage with organizational activities and considering them in the practice of internal communication would be very beneficial for every organization. All organizations have their unique culture, but some general internal communication practices can be applied in various organizations.

Modern day organizations are in a constant state of change, which puts a strain on the employees (see Chapter 2). Organizations need more than just the every-day working hours from their employees; they need energy, creativity and commitment (Quirke 2008, 101).

According to Quirke (2008, 101), committing employees happens by engaging them. Leaders need to be able to motivate, engage and lead their employees through the various changes occurring in the organization. This is a task and goal of communication experts; including employee insights in the process by arranging interaction and making sure that each employee understands the business situation, why the change is needed and what it calls for. It must be shown and explained how employees can contribute to organizational success. Through engagement, employees form a strong emotional bond towards their employer. (Quirke 2008, 102.)

Moreover, Quirke notes that employees' needs are numerous and much more complex than just their payment. A clear link exists between low-level employee engagement and poorly conducted communication by leaders and managers. (Quirke 2008, 104-105.) Internal communication experts' task is to keep people informed and create understanding, help nourish creativity and innovation, and make employees feel part of something, in the midst of constant change and ambiguity (Quirke 2008, 253).

For the planning and managing of internal communication, Quirke suggests viewing staff's capacity to absorb and process information as a strategic resource. He lists several ways to improve internal communication management: selective use of communication channels; fewer messages in quantity by prioritization and good planning; and finally, better quality in messages sent out to employees. (Quirke 2008, 254.)

As for the concrete practice of internal communication, Quirke presses the need for an integrated communication plan, prepared annually and reviewed quarterly; developing common planning methods and language especially in large, global organizations; and monitoring it. Providing a platform for dialogue is essential, as well as focusing on the goals of communication. A communication product, such as a newsletter or a new intranet page, should not be the goal, but rather raised awareness and understanding as well as improved engagement and involvement. (Quirke 2008, 262, 273.) Such goals cannot be reached by one-way communication and just sending out messages to the staff (Quirke 2008, 276).

Similarly, Sirota, Mischkind and Meltzer (2005, 131-133) say that a need-to-know-basis when giving out information is one the most counter-productive ways of communicating in an organization, as it usually leads to restricting the information flow. There are few limitations to full communication, according to Sirota et al (2005, 131). Truly confidential information refers to those pieces of information that have to remain confidential at least for a certain time period in an organization. Too much information means flooding the organization with irrelevant, unnecessary information, which costs energy and prohibits communication that is needed (Sirota et al. 2005, 133).

Planned, well-executed communication is crucial for an organization's success and survival. When it comes to external communication and messages to customers, stakeholders and the public, organizations are usually very precise in editing press releases and web texts (Quirke 2008, 276; Vos & Schoemaker 2011, 77.) Yet in internal communications, employees are often given difficult management or business. Poorly conducted internal communication may lead to misinterpretations and a sub-culture where the management language is mocked, and messages are greeted with distrust. (Quirke 2008, 276.)

Quirke sees (2008, 276) that internal communication is overlooked mainly because the upper management does not realize the severity of the risks when overlooking it, and internal communication is not getting the attention it deserves. This might happen if there is not enough information, data and feedback regarding employee communication and its results and, consequently, the impact of internal communication should always be monitored (Quirke 2008, 277).

5 Communicating in an HRO

A demanding operational environment also sets demands for the communication of an organization in it. This chapter explores theory specifically on HRO's communications aspects and the relationship between safety and communications culture. A reliable and safe HRO needs a reliable, open communications culture and processes.

In their literature review, Lekka and Sudgen (2011, 18) list characteristics of a successful HRO. They suggest that communication should be two-way, open and inviting to discussion. Communicating bad news and errors, also in bottom-up direction, should be encouraged (Lekka & Sudgen, 2011, v, 17-18). Later Lekka and Sudgen (2012, 545) added a qualitative evaluation, concluding that fostering open communication as well as reporting and learning from mistakes are key for a safety promoting culture, as well as maintaining visible management. These however may turn out to be challenging to implement (Lekka & Sudgen 2012, 549).

Compton (2008, 277) notes that one attribute to successful HROs is that the management sustains open communication, encompassing goals for both productivity and safety. Communication is important when the management sets up the organizational purpose (Compton 2008, 36). In Compton's model (2008, 315) for high reliability leadership, communication is especially present in the attributes of leading people to operate safely and reliably. HRO leaders should communicate and listen effectively; engage and connect with people; inspire, motivate and provide context, and empower and clarify expectations (Compton 2008, 316).

Collective mindfulness is a distinguishing organizational attribute for HROs. This is not only about noticing the relevant issues, but also about the quality of the attention paid. The noticing activity is as important as to what people do after that (Weick et al. 1999, 37). In an HRO it should become instinctive to communicate the notice onwards, to everyone involved. A climate that supports openness and reporting also supports learning, as the more aware an organization is of potential risks and errors, the more reliable it can be (Weick et al. 1999, 40).

Reporting errors and incidents is a part of an HRO's communication that must be encouraged (Hopkins 2007, 10). This situational awareness should be constantly maintained and especially front-line operators need to stay highly informed about on-going operations. With sudden events, the front line is where accurate decisions have to be made, so collecting and understanding information should be a constant process (Hopkins 2007, 9-11).

Situational awareness is dependent of individuals sharing information and interpretations (Weick et al. 1999, 44). Multiple and divergent views on matters, by separate individuals, give a broader set of assumptions and help form a comprehensive view on operations and surroundings (Weick et al. 1999, 42).

Marynissen and Ladkin (2012) have reviewed literature specifically regarding the communication of HROs. They use the term risk communication to describe an HRO’s communication, relating to the dual-concept of risk. Risk refers to the probability of an event, but also to the consequences of an event that occurred. Marynissen and Ladkin come to conclusion that the key aspect of an HRO’s communication is how it is understood in the organization that risk communication and the existence of risk are interrelated. (Marynissen & Ladkin 2012, 7.)

According to Marynissen (2013, 79) the basis to risk communication in an HRO is formed by the continuous process of reporting, discussion, policies and cooperation towards safe and reliable actions. Marynissen emphasizes the significance of a comprehensive communication in the organization and the promotion of its safety culture. An organizational culture that allows safety to be openly discussed enables a deeper understanding of safe processes. For this, Marynissen (2013, 79) presents two sets of concrete activities in the framework he created. The first one is mainly used by management, and relates to the methods, guides, training and exercises, as well as the general language used based on skills and experiences. The second one consists of a general mindset and reporting, which can be viewed as an initiative of employees, supported by the management. These actions are linked to each other via collective conversations about safety, which should form daily discussion topics in an HRO. This is aimed at including safety as an intrinsic part of the organizational culture. (Marynissen 2013, 80-81.)

In HROs, communication is an essential safety factor. When executing it, one important point is to be noted; each member of the organization is an individual and makes observations and decisions based on their background, knowledge and attitudes, which happens partly subconscious. Individuals also receive information from several different sources, via different channels – in addition to the official communication. Because of this, individual employees have their own, unique comprehension of why the HRO operates in a certain way, although everyone has access to the same information. (Marynissen & Ladkin 2012, 5, 9.)

In addition to individuality, the cultural background affects the receiving of messages. This difference in observations and cultural frame should be considered especially concerning the communication of an HRO. (Marynissen & Ladkin 2012, 5, 9.) In an HRO the operating environment demands for communication to be as false free as possible, and similarly it is a constant promotion and manifestation of the organizational culture.

However, with a nurturing organizational culture, a collective state of mindfulness can exist, where members of the organization know their responsibility to reliability. According to Weick et al. (1999, 57), collective mindfulness is "a complex and not easily achievable combination of experience, human observations, respect, skills, communication, negotiation skills, conflicted actions, bravery and carefulness". This is why a false-free state is very hard to reach, but functioning, effective HROs do exists, and they stand out because they learn from their mistakes and can prevent repeating them (Weick et al. 1999, 57). Engaged employees are willing to aim for this collective state of mindfulness, as analysis of empirical data showed in this thesis.

Marynissen and Ladkin (2012, 6) present two different approaches to risk communication. The traditional technical view sees communication as one-way information, notifying people that the risk exists. The democratic view sees communication as a constructive dialogue between all parties, with the goal of open, clear and honest discussion. (Marynissen & Ladkin 2012, 6.) Thus, communication can be seen merely as a tool that informs the employees of risks, policies and safety. But from a social constructivist view, communication is a process owned by all the stakeholders. In the case of internal communications, this includes the entire personnel. (Marynissen & Ladkin 2012, 6.)

Marynissen and Ladkin (2012, 13) give four communication factors, or interventions, that can enhance organizational safety and reliability:

> 1. Safety trainings and learning systems, adapted to all levels in the organization, and making sure these actions are not perceived as a "top-down" initiative in place.
>
> 2. Installation of a hierarchical communication, based on comprehensible content that resonates with the employees' problem domain familiarity and their beliefs concerning the perceived levels of control or luck.
>
> 3. Adding people to the decision process. This requires a "no blame, no shame" context where organizational members are respected and valued for their expertise and problem domain familiarity.
>
> 4. Introduction of a "Human Risk Management System" as it reveals the role social processes play when risks have to be communicated. The context in which employees in complex interactive and tightly coupled organizations find themselves and how they perceive certain risks, differ substantially from risk perceptions among members of the general population.

As an HRO's operations must be successful, it is crucial that the internal communications processes are in order. That means that the shared understanding of strategic goals and the reasons for those must be reached, otherwise it opens a window to risks due to the demanding operational environment (Quirke 2008, 13). Internal communications should be paid a great attention to in an HRO.

6 Theoretical framework of employee engagement formation

Engaged employees can be seen as a valuable and important asset for an organization. Generally, as Meyer states (2014, 36), an organization benefits from high engagement because of engaged employees perform better and are more likely not to change jobs. Moreover, in a competitive situation or in a change process, engaged employees may be willing to do a bit more than just the required (Meyer 2014, 36).

To better understand the competitive asset of engaged employees, Meyer and Gagne (2008, 60) suggest grounding the concept of employee engagement to *self-determination theory*. Self-determination theory shows basic universal, psychological needs for autonomy, competence and relatedness. Research on self-determination theory has shown that individuals who are engaged in their activities, experience greater well-being and this in turn benefits the employer organization. (Meyer & Gagne 2008, 61.)

Exploring employee engagement from the perspective of the self-determination theoretical framework, it is embedded within human motivation (Meyer & Gagne 2008, 62). In the following, self-determination theory and its close companion *intrinsic motivation* are explained and tied to the antecedents of employee engagement.

6.1 Self-determination theory as theoretical framework

Thinking about motivation, the first things that come to mind are goals or rewards, and a way to get to them. Human behavior has been seen motivated by a physiological drive, directly or indirectly (Deci & Ryan, 1985, 4).

When thinking about motivating people to work, the easiest goal they are offered is financial compensation. People need to eat, and they need money to buy food, so they need to work for that money. There is this basic motivation, and if a good motivation level is desired, it should be reached by adjusting the reward: good enough pay equals good enough work effort.

But it is actually not that simple, as modern employees ask for more (see Chapter 2). As the working life has developed, interest to motivation at work has risen and developed, too. Humans are active by nature, and do things also when they have no specific reason or goal for it. An action can also be carried out simply for the joy of the action, the joy of doing and being active (Deci & Ryan, 1985, 11).

This type of action is non-drive-based and called intrinsic motivation. It is not a mechanistic driving force like hunger or cold, but a need to be self-determining and competent. Such needs are related to experiences of previous actions and to emotions of interest and enjoyment, motivation in on-going interaction with the environment. (Deci & Ryan, 1985, 3-5, 39.)

Self-determination theory explains self-determination as a quality of human functions involving the experience of choice. It is the ability to choose and have those choices determinate one's actions. It is also a need: people need to be self-determining and master their actions, which leads them to engage in behaviors that interest them and subsequently bring them more competencies and help accommodating to their surrounding environment. The flexibility in managing oneself in the interaction with environment is key in self-determination. (Deci & Ryan, 1985, 38.) In working life, qualities such as flexibility, creativity and self-regulation are valued in co-workers and managers. Similarly, conditions that support self-determination, such as personal autonomy and meaningful feedback, are also valued. Thus, being aware of self-determination in organizations contributes to reaching organizational goals, as well as an improved working life quality. (Deci & Ryan 1985, 294.) However, organizations need to be aware that self-determination can be supported or suppressed by environmental forces. (Deci & Ryan, 1985, 38-39). In working life, self-determination is a desired state; if an employee is motivated by the action of working itself, it could take some of the motivating-burden off the employer (Deci & Ryan, 1985, 294).

6.2 Intrinsic motivation and work today

Much has changed in work places since Deci and Ryan published their self-determination theory. For the present day working life, Pink has continued thinking about what drives people and how to motivate them. Pink (2009, 29) notes that the work life has changed and work tasks became more complex, self-directed and interesting. They demand full energy, but at the same time, feed the worker's intrinsic motivation to do something challenging, interesting and absorbing. This is why traditional extrinsic motivational rewards do not work that well. (Pink 2009, 29-30.)

Intrinsically motivated workers see a goal they want to reach and enjoy the process of reaching it. An organization should just set a goal, communicate it and reap the benefits of innovations and new creations. But Pink (2009, 50) places organizational goals, such as quarterly returns on sales targets, to the extrinsic motivators' slot. Managers set these kinds of goals and their reward is not in the doing, but in getting it done. Such goals imposed by others may lead to unethical ways of reaching it, to get there quick and easy. (Pink 2009, 50-51.) However, in business, business goals are needed. But when an employee is an engaged one, it is easier to feel that the goal is a matter of fact their own, and less just something imposed by the boss. The organization's success becomes partly their success.

Pink (2009, 67-68) presents also evidence for the need of feedback from a motivational point of view: people want to know how they are doing; have they been successful; and is there something they can do better. Feedback that is specific and focused on the effort, the doing, feeds the motivation to do more and to do it well.

In matters relating to modern work, the notion of the *flow state* has to be taken into account. Pink ties this phenomenon, named and found by psychologist Csikszentmihalyi, to intrinsic motivation and self-determination theory: the flow state is one the intrinsic motivators. Most satisfying experiences can be reached while working in a flow state; goals are clear to see and one can feel being in control; being engaged to what they're doing. (Pink, 2009, 114-115).

For an organization that always needs the full 100% input and energy from its employees, such as an HRO, intrinsically motivated people working in a collective flow state would be an ideal workforce. Being aware of the level of motivation and the reasons behind it can help an organization to adjust its internal messages or other actions in order to motivate and engage employees.

7 Execution of empirical research

In this chapter, the process of the empirical research is explained. First, the pre-supposition and research questions are presented. Following that, the research gap for this particular research is explored.

7.1 Pre-supposition and research questions

The pre-supposition for this thesis is as follows:

> Employee engagement is important to all modern-day organizations but for high reliability organizations it is critical in order to sustain fault-free operations. Internal communication could have a crucial role in forming and reinforcing a sufficient level of employee engagement in high-reliability organizations.

This is tried out on empirical data, collected for this research from a modern type HRO and analyzed following the scientific tradition of qualitative research. This research is a qualitative abductive research, based on the philosophy of science of hermeneutics (Tuomi & Sarajärvi 2003, 34). As the discipline at hand is part of humanities, crucial to research done within this tradition are human experiences; sense-making and meaning; communality; and the scientific questions, which are understanding and interpretation.

Hermeneutical understanding is the human understanding the meaning of a certain phenomenon. (Tuomi & Sarajärvi 2009, 34-35.)

Research questions presented to the data are:

1. How is employee engagement strengthened in this HRO?
2. Which specific needs does the HRO have for employee engagement?
3. How can internal communication assist and affect employee engagement in the high reliability organization and thus help preventing and managing issues or crises that occur?

7.2 Research gap

Modern organizations are very interrelated and face new kinds of crisis, i.e. modern crisis events. These events are typically intentional, have wide impacts and consequences that are hard to predict, and solving and managing them requires large-scale recovery efforts that can be costly. (Wang, Hutchins & Garavan 2009, 25.) Thus, many organizations that might have not fitted the traditional view of an HRO before are now in fact facing same type and amount of risks and subsequently, need to consider their reliability demands again based on their changed environment.

Organizations that have to succeed in their operational reliability and avoid accidents, must take special notice on these kinds of new risks. In high-demanding operational environments and especially in risk and crisis situations, the significance of communication is emphasized, and organizations that operate in these kinds of environments thus have special demands on their communication. (Bajayo 2012, 32.)

Communication activities have a great effect on securing operations in HROs, but not many empirical studies have been concluded on the topic. In HROs technology and processes are typically very safe and secured, so when an accident or incident occurs, often the reason is human error, despite of comprehensive guidance and directions. In a situation like this, there may have been a disconnection between knowledge and actions. (Marynissen and Ladkin, 2012, 1.)

A research gap exists for a qualitative study on employee engagement and specifically on the impact internal communication can have to reinforce it. In addition, this research is specifically targeting an organization in a high reliability environment, where employee engagement can be crucial since a malfunction or disruption in operations could have immediate, wide and severe impacts to the everyday life and business of the public, so not only their customers and stakeholders. The empirical data was collected from a Finnish organization operating in an environment where for example the risk of a system attack has already become reality (Harke 2015; Hiiro and Halminen, 2015).

8 Empirical data and research validity

This chapter presents the arguments to why the target organization was chosen and describes the execution of the research thoroughly and presents the methods of research. With these, the validity of the data can be assessed being accurate.

8.1 ICT organization as an HRO

In today's societies, organizations from private companies to governments are highly dependent on ICT systems, which can make them vulnerable for modern crises such as cyber security attacks and system malfunctions. Subsequently, these ICT providers become an organization that can be considered as a high reliability organization: it is critical to infrastructure and operates in a turbulent environment. According to, for example, Compton's definition (2008, 15-20) of a high reliability organization as an organization that uses demanding technology and operates in an environment with risks, but has proven that it can be safe and reliable.

Since wide use of complicated ICT brings along new vulnerabilities, it is crucial that the employees are engaged to perform in the best possible way. Incidents of software service problems have appeared recently in Finland, e.g. in banks, due to issues with ICT technology and cyber security (Hiiro and Halminen, 2015). ICT organizations that supply technology critical for infrastructure, fit for example the definitions presented in Chapter 3 by Compton (2008, 20), Weick et al. (1999, 32), as well as Marynissen (2013, 79, 81).

8.2 Data collection

The data was collected via six face-to-face expert interviews, with the duration of approximately one hour each. The interviews were conducted as semi-structured or so-called thematic expert interviews (Hirsjärvi & Hurme, 2011, 47). Each interview lasted for about an hour. As the topic of the research and even one of the concepts is quite context-dependent, it was required that the interviews have enough time and thematic space.

The interviewees were chosen by their position in the organization and the business function their tasks are related to. The profiles are as follows: personnel from communications and HR functions, and white and blue-collar interviewees from operative, business front-end tasks. The target organization is a Finnish ICT company with over 10 000 employees worldwide. The organization operates globally, providing complex technology and IT services to private and public sectors. Some of these services are critical infrastructure services, such as IT-systems for national safety, health care and financial functions.

As the interviewees were all Finnish, the interviews were concluded in their native language. To be noted is that in Finnish language, both engagement and commitment translate into one word, *sitoutuminen*. This was the term used in the interviews. However, because the nature of the data collection and interview format, the topic and themes were not approached strictly via certain terms, but its linguistic form was personal for each interviewee.

Thematic interview is a comprehensive way to describe this type of interview as a method of data collection. It derives from the tradition of open interview that is loosely structured; thus it not just a discussion as it should serve the research aim of collecting information (Anttila 1998, 9.1.4.1). It does not limit itself to quantitative or qualitative research, nor to the number of interviews or the depth of the topic. It is relevant that the interview(s) proceed based on the chosen themes, taking strongly into consideration that people’s interpretation and the meanings they give, which arise in interaction. Thus, the interviewees’ message becomes clearer. Thematic interview is not completely unstructured, as the themes are the same for all, but in each interview, the formation and order of questions vary as well as additional questions and other matters. (Hirsjärvi & Hurme, 2011, 48.)

In the interview situation, language is essential. Those who participate have the goal of conceptually delivering their own mindful relation to the world. The researcher aims to find out how the meaning of something is construed by the interviewee. Similarly, the interview situation itself creates new and shared sense-making: the answers are always also a reflection of the situation, the presence of the interviewer, the way of asking and the previous questions and answers. (Hirsjärvi & Hurme, 2011, 49.)

The interviews began with an explanation of the research and the method of the interview and situation. Taking research ethics into account, each interviewee signed a consent form before audio recording started, and allowed the interview to be taped. The interviews began with background questions, which were an easy way for the interviewee to adjust to the situation. The aim of the researcher was to ensure relevant, valid information from the interviewee and thus not guide too much what kind of answers were desired. Questions were unstructured and asked along with the natural flow of the conversation; some topics emerged on their own by the interviewee and questions related to those did not need to be concretely presented. Questions were also slightly adjusted to the position of the interviewee, i.e. those who worked with internal communications were asked about their own substance area as well as those working in the business front-end. The researcher did not comment on the answers, but asked definitive questions, answered the questions the interviewee asked and guided the interviewee to stay on the topic. An example of the interview frame is presented in Appendix 1.

All interviewees were very cooperative and participated out of their own will. They were recruited by a representative of the organization's internal communications function, with little preliminary information. Two expressed some concerns about giving confidential information, but were explained that they could only give information they wanted, and should some confidential information be given, it could be asked to not be included in the data. After the interviews were concluded, no requests were presented to leave any part of the answers out of the data.

All interviewees were also interested in the study and were offered a chance to receive information on the results, and all did ask for that. One interviewee continued the discussion after the interview was finished by the researcher and the audio recorder was turned off, but as this discussion presented relevant information, the interviewee was asked if this information could be included based on the notes made by researcher. The interviewee agreed to this.

9 Analysis

In this chapter, the data description is given and the method of analysis is presented thoroughly. After that, the concrete execution of analysis of this data is opened, with example extractions.

9.1 Description of data

The analysis began already in the interview phase, and the data became familiarized during the transcription. After this a total of 70 pages of written data in Finnish were collected. It was actively read and the research questions were presented to it.

All interviews gave information that was relevant and provided answers to the questions, including also some irrelevant information. All business-related actual examples and information were removed from the data, as anonymity of the organization and individual interviewees was guaranteed.

In addition to the visible and spoken, features that are not straight-out readable in the text are sought out. Meanings were searched with ad hoc-procedure. (Hirsjärvi & Hurme 2011, 137-8.) As during the interviews it was already possible to make observations, meanings and even reactions, the ad hoc-procedure was found to be effective and notes from the interview situations were used as a support for the reducement and classification phases.

The textual data was divided into sections, classified and then, in order to abstract results, the classifications were synthesized again. In the synthesis stage, the classified entireties were revisited, interpreted and the phenomena was theoretically understood and outlined. In short, the data was read, classified, searched for connections and similarities, and results were then reported. (Hirsjärvi & Hurme, 2011, 144.)

9.2 Method of analysis

The data was analyzed qualitatively. As the research was conducted throughout by the researcher, the data analysis was started in part already in the interview situations. Typically, qualitative data analysis starts already at the point where data is collected, which makes the researcher naturally the one who is able to analyze the data (Anttila 1998, 6.4.1).

Hirsjärvi and Hurme (2011, 137) present several ways to analyze data collected via interviews, and also remind that in qualitative research there isn't much of standard techniques or only one, correct way of doing it. However there is a loose, general process to analyzing verbal data (Anttila 1998, 9.4.2.3) with the steps of transcription; combining phenomena and issues; listening the interview data; perceiving the general meanings; understanding the relevant factors relating to research questions; eliminating not-relevant matter; combining relevant meanings; defining the entireties of meanings; identifying general themes of the entire data and attaching them to context; and finally, gathering the summary of findings and conclusions.

In the research at hand the analysis approach is abductive method, with some traits of inductive method also (Tuomi & Sarajärvi 2009, 117). Inductive method is based on the data, which is approached with the research questions. The data is processed with tools provided by inductive content analysis method: it is first reduced, then clustered into classifications, and then abstracted to find the answers. (Tuomi and Sarajärvi 2009, 108-113). As the analysis starts already in the collection phase, it has also shaped the research questions and guided the research further (Anttila 1998, 6.4.1). Since the data was collected in semi-structured interviews, the chosen method allowed research to guide the research's direction already in the interview situations.

Abductive method is partly guided by related theory: when the empirical data is abstracted, it is connected with theoretical background and existing concepts (Tuomi & Sarajärvi 2009, 117). In analytic reasoning some theoretical leading ideas are sought out from the data. In this research, the theoretical concepts the data is connected to are employee engagement, the definition of an HRO and its organizational culture, and internal communication's ways of affecting those. Thus, the chosen method in this research is abductive. The analysis was done closely and in context of the data.

When qualitative data is classified, the phenomenon is construed by comparing the different parts. Classification gives the frame that helps to interpret, summarize and draw simplifications. Practically, classification is deductive reasoning. (Hirsjärvi & Hurme, 2011, 147.)

After the classification, the found compositions are reviewed and fathomed as theoretical and empirical. In the last, deductive stage, the data is examined from the researcher's point of view, with the goal of versatile comprehension of the phenomenon and developing a theoretical model or approach where the data classifications are placed. (Hirsjärvi & Hurme, 2011, 150.)

9.3 Classification

The data was listened and read several times over a period of about three months. It was processed with reducing and clustering. After this, the classification was done with theoretical guidance. Finally, the results were abstracted. This follows the general tradition of qualitative analysis of data (Anttila 1998, 9.4.2.3).

There were three major themes in the interview questions: the knowledge and culture of high reliability in the organization, engagement to high quality and ensuring reliability, and internal communication. At first, these three thematic topics were searched for from the data. Then, it was approached with the theoretical concepts.

The classification was formed from the information the data provided. Both concrete and abstract matters arose from the interviewees' answers. Notably, the abstract matters were just as easily discussed and naturally present in the data as more concrete things, such as the organizational culture, feelings of motivation, engagement and individual responsibility. Also the straightforward attitude towards communication and interpersonal relations between colleagues and customers appeared strongly.

For example, there were several occurrences in the data of reliability being just a self-evident truth, a predominant state to all of the work executed in the organization, indicating that the prevailing organizational culture was favorable to reliability and that there was a certain collective understanding of what is good quality work. Similarly, employee engagement was present in the data in such expressions like wanting to do one's work well; wanting to reach goals and further develop the processes; knowing and understanding the overall impact of one's effort; and feeling the responsibility one has of their own work, towards the customers and colleagues, and thus the organization entirely. Internal communication appeared as something that is a responsibility of all.

The data was classified with five (5) main classifications that are as follows:

1. Actions of internal communication that aim to strengthen employee engagement and organizational culture.
2. Actions of internal communication and other functions that aim to maintain high reliability.
3. State of mind that expresses existing engagement and organizational culture.
4. State of mind that ensures reliability.
5. Collective knowledge and actions that ensure reliability.

Classification 1 represents for example internal releases and other content, such as management’s approaches to personnel. Classification 2 means for example training and reminders of work quality. Classification 3 was the general expressions of communality and also ethics and feelings towards the organization. Classification 4 represents the morals and general ways of working that emerged from the data. Classification 5 is the expressions and explanations of attitudes, processes and ways of working that are followed to reach high quality and reliability.

These thematic classifications were then combined as follows: 1 and 2 present concrete actions, classifications 3 and 4 immaterial, abstract constructions that have visible expressions, and classification 5 presents both concrete and non-concrete actions.

Following are three examples of data extractions with their classifications. All of the relevant data was processed like this in the context of the data source, a global ICT-organization, and the theoretical framework presented earlier.

Example 1.

Original quote

> musta se [reliabiliteetti] on vähän niinku, voin kuulostaa vähän kliseeltä et se on vähän niinku bisnes as usual, et se on jotenki mandatory, se ei oo niinku mikään, joko tai, se on ihan must. Ja se kulkee niinku mukana siinä toiminnassa mitä me tehdään. Sit tottakai, vähän niinku eri teemotuksista, asioista riippuen kyllähän me tehään sisäistä viestintää myöskin niinku, ja koulutetaan ihmisiä näistä aihealueista.

Translation

> I found it [reliability] to be, I might sound like a bit of a cliché that it's like business as usual, it is somehow mandatory, it isn't anything, if or not, it's a must. And it follows along what we do. Then, of course, depending on different themes and subjects, we do also internal communication about, and coach staff regarding these topics.

Simplified expression after reduction

> The importance of high reliability appears as a part of organizational culture, and it is not necessary to be expressed and instructed with internal communication constantly.

Classification 2

Example 2.

Original quote

> se lähtee sieltä että on motivoitunu sillon pyrkii tietysti tekemään asiat myös huolellisesti ja silloin ei, ei tuu semmosia häiriöitä jotka esimerkiks

huolimattomuudesta helposti, tai siitä et välinpitämättömyydestä aiheutuu ja… Samaten semmonen että asiat tunnistetaan ennen kuin ne on… sillon ku ihmiset on motivoituneita ja osaa, osaa asiansa niin niin tyypillisesti huomataan joku mahdollinen, on riski jo paljon aikasemmin ennen ku se toteutuu. Se tuodaan esille ja sitä pystytään sitten riskinhallinnan kautta hoitamaan pois. Ei sitä sitten, ettei se toteudu se riski.

Translation

It starts with being motivated, then you of course try to do things diligently, and then there isn't, there won't exist such problems, for example from negligence-derived and... Also that of recognizing issues before... when people are motivated and know what they're doing, then typically we can notice a possible risk much earlier before it occurs. This is expressed to others and can thus be dealt with risk management. And it won't occur then, that risk.

Simplified expression after reduction

Motivated, skilled employees form organizational reliability collectively.

Classification 4

Example 3.

Original quote

[organisaation avoimuus-linjauksessa] annetaan niinku avoimesti palautetta ihmisille, kerrotaan mitä mieltä me ollaan asioista, ehm, kerrotaan, opitaan virheistä -- Elikkä tästä tulee aika paljon se niinku, challenge status quo, eli ihmiset uskaltaa sanoa et "hei, tää ois paljon paremmin jos se ois näin".

Translation

-- [the company's openness policy is about] giving feedback openly, expressing opinions, explaining, learning from mistakes. -- so from this it is largely derived that, challenge status quo, so people dare to say that "hey, this would be better if it was like this".

Simplified expression

The organization has a specific openness-policy which encourages discussion, learning from mistakes and challenging the status quo.

Classification 2

10 Findings

This chapter presents the findings from collected and analyzed empirical data. Findings are first presented according to the previously explained classification and then opened up further.

10.1. Findings according to data classification

In an HRO internal communication is a crucial function as it does have an effect on employee engagement and thus to performance. The organizational culture of an HRO has to be of certain kind, otherwise reliability cannot be sustained. Internal communications has a big role in this. What is crucial is that the organizational culture supports employees to take care of reliability and high quality. Table 3 presents findings according to the data collection thematics, formed classifications and related findings to those.

Table 3. Findings from the data

Classification and theme	**Related findings from data**
1. Actions of internal communication that aim to strengthen employee	Employees are informed of joint goals, mission, and vision. When those are clearly worded and communicated, they help to see the goals which

engagement and organizational culture. (Internal communication)	lead to engagement. Communications has to be understood as an important part of the management. It should be two-way, since authentic understanding is needed for engagement to form. Communications' messaging is truthful but has a positive and encouraging tone, adjusted to different target groups. Internal communications can offer ways and support for getting to know colleagues, as well as giving feedback. Feedback is recognized as an antecedent of engagement. Significance of strategic communications is recognized.
2. Actions of internal communication and other functions that aim to maintain high reliability. (Internal communication)	Internal communications and communicating keeps reliability present and as a discussion topic. Staff and especially managers receive communications training, and communications guidance is available to some extent. Communications function is trusted on keeping relevant information available, as well as giving assistance with finding it. Communications is understood as a crucial element in reliability; internal communications has to make goals on reliability and high quality known and approachable.
3. State of mind that expresses existing engagement and organizational culture. (Employee engagement)	There is a feeling of communality and camaraderie; colleagues are helped out if possible. Also when needed, individual engagement allows employee to give a bit more, to organization and to customers. Employees have a feeling of loyalty and responsibility regarding the quality of their work and their own motivation. Organizational culture is known and recognized as a concept and as the organization's individual internal culture. Organizational culture is seen as something that has to encourage employees to take individual responsibility and give feedback. Individual engagement is seen as a key element for the organizational culture to being functioning.

4. State of mind that ensures reliability. (Reliability)	Employees understand what they are doing and why it has to be correct. They are given trust and responsibility of working on a high-quality level. The consequences of their actions are also understood regarding the success of the organization. The significance of high reliability and "going the extra mile" is understood on a cultural level. In abnormal situations, the importance of relevant information is understood. There is an understanding that a motivated and engaged employee performs better.
5. Collective knowledge and actions that ensure reliability. (Reliability)	Employees share their knowledge and observations within the organization, and its open culture supports this. Employees are seen active in their work role and with seeking and sharing information and developing their skills and knowledge. When a problem or incident has occurred, it is understood why it is important to know the reasons that led to it and discuss about it openly. Also individuals are encouraged to communicate if a mistake has happened, so the whole organization can learn from it. The value of collective, organizational knowledge is understood and cared for, as well as internal risks for reliability, such as rapid employee turnover.

10.2. Conclusions from data

The following entities were found from the data related to internal communications, employee engagement and reliable operations: concrete actions of internal communications; immaterial and abstract constructions that have visible expressions related to reliability and high quality; and both concrete actions and abstract matters of reliability.

The relationship and linkage between employee engagement and internal communications became apparent from the data. Also the wideness of the concept of internal communication was a notable finding; it should not be seen as only a task for the organizational communications professional, but understood as a task of the entire staff, especially managers. The communication function could be a natural facilitator and developer of that, and it is their professionalism that can have a large impact on the entire organizational culture.

Internal communications function can and should play an important role with the forming of engagement and an organizational culture that encourages reliability. Managers and leaders are also crucial in it as they show an example of the organizational culture. Despite all of the technology, the data indicated that most effective form of communication is still considered the kind that happens face-to-face, as this is seen as the most fault-free form of communication. In a global corporation this should also be taken into strong consideration when choosing the channels and actions for internal communication, since technology, distance and different cultural backgrounds all challenge the delivery of a correct message. There is a correct concern about some information getting lost in translation and within cultural differences (Marynissen & Ladkin 2012, 5, 9). Employees should be provided with guidance of effective, clear communication with the new tools and channels, to ensure the correct delivery of messages. Communication about the joint goals and impact of one's input builds up awareness and engagement towards the organization. This is especially important in an organization with high reliability demands, as a breakage in communication may leave a door open to mistakes and risks.

In ICT businesses, the customer communication and briefing is done by different employees than the actual creation of software and systems, so communication has to flow seamlessly and carry all the relevant information throughout the internal chain of command. This is especially critical in incident situations, since the front-line does the work and gets the best information, but bigger decision-making is often higher in the organization. That being said, the front-line employees have to be trusted of being engaged and having enough awareness and sensitivity to operations in order to notice anything out of the ordinary. In a situation where operations are facing a risk of issue, malfunction or attack, some decisions cannot wait and have to be done in the front-line.

An open organizational culture and communications policy is a crucial matter for an HRO, sometimes even on a life and death-level. Internal communications should be viewed as a task for everyone in the organization, and understood of being an expression of the organizational culture. Reliability forms from individuals working together towards highest quality, and part of that is always staying aware of what is going on, so a possible issue is noticed early on before it can evolve into a major incident or even crisis.

Employees need support from their managers and colleagues in order to have a suitable workload, achievable, understandable goals and tasks that motivate them. A shared will should exist to develop organizational culture, and it is openly spoken about. Management and support functions need to stay aware of the current atmosphere and culture and internal trends in order to be able to support the formation of engagement.

As the tasks demand high quality, employees must be focused and understand the goals and the consequences of their actions and efforts. Thus, engagement is needed as it is crucial that employees understand the several impacts of their individual actions, and how important it is to work on high quality level (Marynissen 2013, 80-81). The work is knowledge work, which demands simultaneous performing of tasks, creating of new, problem-solving, and learning. This can be straining especially under time pressure, so being personally engaged can help reaching the goals, and understanding the wider scope of consequences an employee's actions have to the customer and the organization. (Müller et al. 2006, 2951.) Also as it is knowledge work and knowledge and information business, the engagement is needed for proactive development of processes, products and ways of working. That means caring enough to notice these things and voicing them out further in the organization. This is needed also from a risk and incident management point of view. Sharing information is crucial for organization's collective learning, especially in organizations and environments where learning can't happen by trying things out. In addition, the individual and organizational expertise grow as engaged individuals can and are willing to focus all of their capacity into their work while doing it (Müller et al. 2006, 2951; Swap et al. 2001, 97).

Internal communication can provide a channel for discussion, feedback and dialogue. It can also be a developer and expression of organizational culture, and inform the organization of goals and purposes (Vos & Schoemaker 2011, 88, 100). As it provides training and meta-level information of organizational actions, strategies and internal atmosphere, it can enhance the quality of work environment and thus the organizational reliability. Internal communication also promotes the values and processes to be followed, ensuring high quality and reliability. It is also an influencer on employee motivation, since it can provide success stories, promote communality and provide a feeling of general purpose of the organization and the work it does. Especially in matters of issue and crisis prevention and management, internal communication can be a big influencer and even a critical player, as it can explain the needs to certain processes and quality improvement actions. Internal communications is the voice of organization, so it has a significant role in employee engagement formation, as it provides the ways and platforms for an employee to get to know what their employer thinks and "feels". When implementing internal communications actions, this is important to keep in mind as employees are sensitive in noticing conflicts between actions and words. Internal communications has to be always truthful and based on facts.

11 Conclusions

A successful HRO understands the connection between employee engagement and their reliability, and does not only rely on quality processes, standards and “house-manners”. As employee engagement is partly based on intrinsic motivation, an HRO knows its employees and is willing to offer them tasks that satisfy their intrinsic motivation. Complex interrelated technologies lead to complex messages, which means that internal communications has to be strategic, continuous, open and acknowledged in the organization, relating to the risks of the operating environments also (Marynissen 2013, 79; Quirke 2008, 13). Should it fail in an HRO, it opens a door for great risk. Internal communication should not be viewed just as a task of the communications function but rather as a joint responsibility for all, especially also within the management.

Communication should be a two-way street, and within internal communication dialogue is critical, as it can help develop the organizational culture in a desired direction. With the evolving working-life, engaging employees may not be as straightforward as it has been. In an HRO this needs to be understood and successfully practiced on a high level, but it would be very beneficial to other organizations also (Weick et al. 1999, 34).

The reliability of an HRO is built on individuals that together can form a collective state of mind where everyone is engaged to work jointly to reach the goals they feel are their own. Internal communication has a significant role in this, with concrete actions as well as an enabler of a desired organizational culture and a platform for the antecedents of employee engagement, such as providing a meaning to the everyday work which is a motivating factor (Deci & Ryan, 1985, 3-5, 39).

The pre-supposition of this research was

> Employee engagement is important to all modern-day organizations but for high reliability organizations it is critical in order to sustain fault-free operations. Internal communication is a crucial tool for forming a sufficient level of employee engagement in high-reliability organizations.

Based on the conducted research on empirical data and the review of theories, this pre-supposition can be found tested as accurate.

The research questions were:

1. RQ1: How is employee engagement strengthened in this HRO?
2. RQ2: Which specific needs does the HRO have for employee engagement?
3. RQ3: How can internal communication assist and affect the employee engagement in such a high reliability organization and thus help prevent and manage issues or crises that occur?

Summarized answers to the research questions are provided below.

1. RQ1: Employee engagement is strengthened in an HRO by comprehensive awareness of building and maintaining an organizational culture and conditions that feed intrinsic motivation and thus engagement; challenging tasks, feedback, communality and a sense of respect and safety.

2. RQ2: HROs need to have a high level of employee engagement, as their employees work in organization where false-free, high-quality operation is a must. Employees need to be engaged in order to stay highly motivated; to commit to continuous development of both their

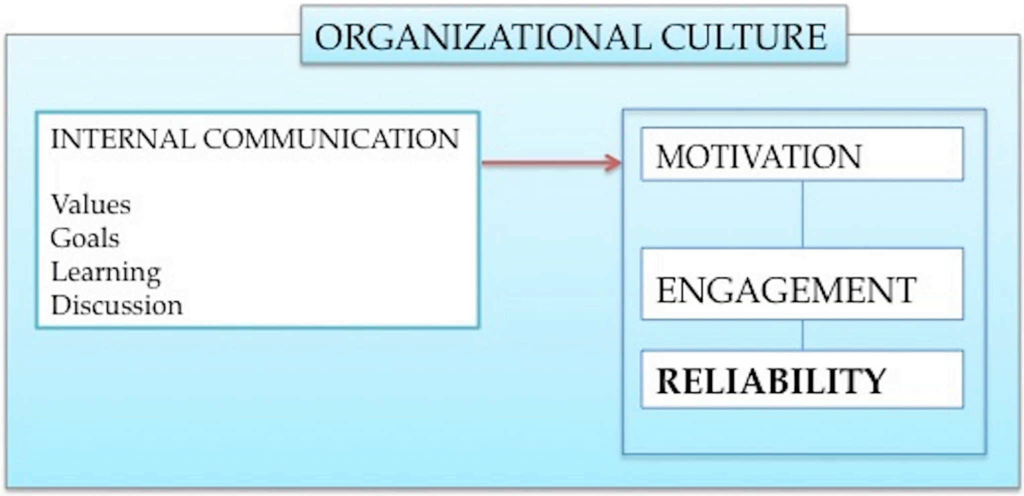
own skills and the collective organizational knowledge; and to follow the rules and policies of performing in the manner of high quality, reliability and safety.

3. RQ3: Internal communication can assist and does have an effect on employee engagement, thus promoting reliability and safe operations. Concrete actions for this are distributing information correctly; providing platforms for feedback, discussion and development; and verbalizing goals and the significance of reliability, as well as an individual's responsibility to it. Internal communication should also be seen as the expressive channel of organizational culture, and as a task of the entire personnel, especially managers and leaders. Even with a well-developed communication technology, face-to-face communication is still highly relevant and most fault-free, since it can provide human emotions with the message. Thus, internal communication can give guidance for reaching a level of good, correct information when face-to-face communication is not possible.

Figure 1 illustrates the role of internal communications for forming engagement and thus reliability. By familiarizing goals and values and facilitating learning and discussion, internal communication has an effect on employee motivation, which assists the formation of engagement. With engagement, a better work performance can be reached, leading to more reliable operations.

The internal communications actions, especially communicating values and goals and promoting learning and discussion, affect employees' motivation and engagement. When an employee feels motivation and engagement, they are more present in their work and have the abilities to perform reliably and notice possible risks and incidents early enough, and prevent and solve them. For all of this to happen, the organizational culture has to be one that supports this, both the internal communication's success and the formation of engagement, as well as the performance of the organization as a whole.

Figure 1. Internal communication affecting reliability via engagement, within the organizational culture



11.1 Evaluation of the study and recommendations for further research

This Master's Thesis topic was chosen as a combination of a current issues and personal interest. A lot of possibilities for the research target, type and topics was considered, but the final topic and target formed when actual risks realized with the network attacks in Finland towards the financial sector in late 2014 (Harke 2015; Hiiro and Halminen, 2015). The research type was of a qualitative, with abductive method which suited well with the topic and research questions. Also the data needed for this research was easily ruled out to being qualitative. Since it is a personal and abstract phenomenon, the amount of interviews was just sufficient enough, as there was good variety with the interviewees, the interviews were successful and useful data was received. (Anttila 1998, 4.1, 7.) However, more interviews would have of course provided more data and thus enhanced the research validity. With this amount and such a specific data from only one organization, the findings may not be generalized to a vast variety of organizations, and mostly to ones in the same line of business.

The research was executed following the traditional process of qualitative research. Abductive research type was found most useful, as this research combined both the theory on HRO's and employee engagement and motivation, as well as the practice of internal communication (Tuomi & Sarajärvi 2003, 34, 117).

The study was concluded in quite a compact time, in about six months, of which three months the focus was only on the empirical part. This intensive way of working was a productive choice since it allowed the data to be studied in a comprehensive and continuous matter, from the interviews to the analysis phase. It was beneficial in keeping the project together, but placed some challenges in reporting phase, especially with describing the results, as the analysis process was its own entirety and as well as the reporting phase, with some time between them.

As the study shows, HRO is a slightly vague term and since organizations' operational environment are constantly evolving, so it should be. Because the term is not crisply defined in academics, deciding on relevant sources was a challenge. New types of organizations are born, facing new kinds of risks and threats. An ICT company offering infrastructure critical services is one example of a new HRO that the Berkeley group couldn't have thought of in the 1980's. ICT organization was thus a relevant choice as a data source.

Theory revealed that a lot of paths could have been chosen when researching employee engagement, but with this particular research topic and research questions, the emotional and psychological point turned out to be the right choice. It is also relevant since the working life has and is radically changing and the traditional ways of motivating employees might not work that well anymore. However, as the term is so wide one with plenty of overlapping and related terms and phenomena, it was a challenge to limit applicable theory resources and find the most relevant line of research. Also challenging were drawing the connections between different theories and the relationship between internal communications and engagement and its antecedents, as well as tying the results into all of it and keeping the content relevant.

As employee engagement and its effects on organizational performance are getting more widely known, further academic research on the topic would be interesting, even demanded both in the fields of HR and leadership as well as in organizational communication. Qualitative, longitudinal research of the links specifically between internal communication with its fast technological evolution and employee engagement could provide a wider insight of the phenomenon.

Observational case studies from HROs would be very insightful, as organizational culture and employee engagement develop over a longer period of time and continually evolve. Particularly this aspect might give important information concerning all phases of an issue or crisis that occurred, including its management and aftercare. Promising methods could be, for example, ethnographical observational studies on organizations on critical incidents or intensive interviews using narrative analysis. Since there are questions of security and business confidentiality, there would probably be some challenges to this type of research and it might be feasible that the research is conducted from within an HRO, perhaps even by an employee. This would require specific guidelines of ethics and practices to ensure validity though.

For the practical and academic organizational communication, this research offers more thorough view into the meaning and functions of internal communications opens a window of towards understanding the current and future working life and explains the variety and significance of employee engagement. It is hoped that organizational communications professionals can gain further knowledge and understanding to the significance of their work as an organizational culture influencers as well as a crucial part in the operational quality chain of any organization, be it an HRO or some other organization.

11.2 Summary of conclusions

In today's working life, employee engagement should interest every organization, but especially HRO's where the environment requires excellent quality, safety and reliability. If there is a lack of employee engagement, a non-HRO pays the price of it on its balance sheet, but for a HRO that price might be human lives and the entire existence of the organization.

Correct, high-quality internal communication can assist greatly with employee engagement in all types of organizations. As it has been a rather under-valued branch of organizational communication, now is the latest that its value and major role should be recognized. Internal communication's core operations should be viewed beyond just the concrete actions of internal news and intranet, but as a state of mind, something that builds and expresses the organizational culture and is a responsibility of the entire organization, not just the communication function. Internal communication can and should take a great role as an influencer of employee motivation and engagement, especially now in the times of work-life turbulence and more demanding operational environments. The value of internal communication to the organizational culture and its results cannot always be easily measured by numbers and hard data. But as this research has shown, there are some matters even in business that never will be fully measurable, as we humans make that business function and form the essence of every organization.

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Appendix 1.

Example interview frame. This frame was loosely followed, depending on the interviewee's role in the organization and the situational flow of the discussion between the researcher and the interviewee.

Background information

(Explanation of the research, signature on informed consent form.)

What is your title and position? What exactly do you do? How long have you been working here?

Part 1: High reliability and incident prevention

Why is reliability of ICT critical for your company and its clients?

How is reliability ensured?

How can you help prevent ICT system failure in your work for a client company?

How can you help prevent or react to cyber-attacks directed to (your company or) client companies? What can be done?

What is needed in your organization to increase and ensure reliability of ICT?

In what ways are you prepared for a problem situation? Is there some kind of crisis plan in your IT company, when a client company has a crisis, for example because of a cyber-attack clients can't use the bank's services?

Part 2: Engagement for high reliability

What does reliability of ICT ask of the employees?

Is it easy to inform when you see there could be risks/ mistakes in products/ operations?

Are you motivated/ what would motivate you to be (more) precise and add to high reliability?

What makes you do more than required? If possible, please give an example of an actual situation where you had to/decided to walk the extra mile?

Part 3: Internal communication

How can good internal communication help engagement for high reliability?

For comms interviewees only:
How do you consider engagement in internal messages?
Do you state the goals to reach reliability clearly in internal communications?

What is the most important information to you about your employer in order to reach best possible reliability in your task? Where do you receive it from?

Who do you need to communicate with in a problem situation?

Can you describe good internal communication that helps ensuring reliability.

Have you noticed a conflict between actions and words of your company regarding reliability and best possible performance?