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Accountability without hierarchy: How to engage and commit employees to decisions without enforcing authority.

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ABSTRACT:
Traditionally hierarchy and structure has determinate how organization create and implement decisions, but because of the modern business environment organizations have to adopt to more flexible and agile way of working, often by flattening the hierarchy. Since lack of structure leads often to decreasing accountability, commitment and engagement, this thesis focus on how these attributes can be harnessed in this new environment. This is observed by a retrospective analysis data of a start-up organization's behavior, which they have recorded digitally on their own platform.

The measured attributes: engagement and commitment are regarded by research highly important in different phases of decision-making from designing a decision to implementing it. Problem with studying it retrospectively is that individuals have a bias on remembering their own logic and behavior. This quantitative study focus on analyzing records of this behavior rather than memories of it to eliminate this bias.

Statistical correlative analysis of these data records indicate that there is negative correlation with being accountable to oneself and committing in doing one's own actions, more precisely individuals were more committed to action when they were accountable for someone else. Also the statistic shows that individuals who were in active role in a decision were more committed to it. Thirdly the relationship of general engagement and activity in a decision and its effect on individuals' commitment was analyzed, this showed some correlation, but because of the small sample size and spread of data, this result can't be accepted as scientific significant.

KEYWORDS: Decision-making, Organization, Commitment

1 Background & Introduction

A bad decision can leave a company to ruins; it can leave to long-term effects that can paralyze the whole organization (Nutt 2002). And when these companies fails, its collapse is blamed on a single or a string of failed decisions, but when a company is striving, the glory of its success is given to its strategy, innovation, product, culture or pinpointed to a hero like individual.

During period of success these decision are seen as a part of the progress. A natural outcome or a part of chain, where great strategy, personnel and culture provides spontaneously great decisions that are implemented and executed. The failed decision is viewed as an outcome failed outcome of these factors or a deviation, a step away or a mistake from the company's direction or guidelines.

Failed decisions are usually pinpointed to individual, group or the culture of the organization. Even though the first pioneering organizational structure and behavioral theories and works emphasized the decision-making, its role and structure of organization to empowering it (Barnarnd & Simon 1947; March & Simon 1958).

Around the same time with these first organization theories, with automatization, mass production and industrial management was raising and developing the business. Efficiency became the goal and measuring the mechanical work, process and outcomes. These became the norm in business and industries, while the organizational and knowledge, therefore decision-making was left for the social scientist.

As workforce was mainly focusing on mechanical and industrial labor, this emphasizing in tangible, outcomes and work hours were justified and valuable, but modern business environment have moved forwards towards know-how and knowledge work, where the content has become more intangible and immeasurable. Significant evidence points out that organizations that cherish human capital performance better compared to counterparts (Crook, Todd, Combs, Woehr & Ketchen 2011). As decision making can be seen as an outcome or a key factor in knowledge work and the current hype on transformation of modern leadership, one could think that managing an organization, would mean managing decisions with a holistic approach, as March and Simon's already suggested in 1958 (March & Simon 1958).

A survey in 2012 by Harvard Business Review and SAS Institute, created a survey with 646 executives, managers and professionals, about data driven decision-making. The answers were drastic; little bit less than three quarters of the companies didn't have companywide policies for decision-making, so that over half of the responded told that they don't have transparency of how the organization is doing it (HBR & SAS 2012).

As the Nobel awarded behavioral research suggest humans have numerous of biases cognitive and external, which influence our decision-making, more scarily even without us noticing them (Kahneman, D. & Tversky 1984; Kahnemann 2003). Transparency and organizational policies are two salvages to detect individuals biases, it is no wonder that over half of the organizations decisions fail (Neal & Spetzler 2015; Nutt 2002).

Not only to does this lack of focus on decision-making lead to bad decisions, but also the result will be merely good decision instead of great decisions that could make the organization to outperform its rivals (Neal & Spetzler 2015). So why is the decision-making been neglected, especially with a first glance in the research it seem simple, all the major frameworks in decision-making consist of data gathering, choosing, execution phases or small variations of it.

When one takes a more holistic view, it starts to get more complex and interesting. Is the decision an answer provided to a question or defining a question itself (Weick 1995)? Who is responsible for decision-making? Currently it is trendy to talk about decision-makers. Being part of decision-makers elevates one from the others, giving him or her qualification to be responsible of these decisions. Literature has made a distinction between executives and managers; it can be seen as a big difference in changing from management to executive, hence changing your decision making from quantitative to qualitative (Hayashi 2001: 61). Research has shown that complexity of decision and lack of time makes executives dependent on intuition (Isenberg 1984). This intuition versus rational-decision making raises another dimension to the decision-making. Also, the decision-maker aspect limits the view. Who should be a decision-maker, doesn't everyone make decisions in a modern organization or even more futuristic - will it even be "who" in the future?

Big data and artificial intelligence is developing and raises also questions in decision making, with all the major frame works of human decision-making emphasizing our limited cognitive capabilities, will machines take our place in decision-making or one of

its phases: data gathering, making the decisions or executing it. Simon's (1969) raised these questions as early as the 60's, but with the current technology development its coming relevant question in near future. Also, Technology has enabled another modern new way of decision-making, a rather opposite to the artificial intelligence, a more social and collaborator style, best known as crowdsourcing. In decision-making it is most seen as a tool for the information gathering part, especially in business situation, where it is social and democratic style, with ownership issues can be seen too unpredictable and uncontrollable.

Decision-making is a huge weakness of too many modern organizations, but it can be turned into an opportunity (Nutt 2002). It can require a lot of steps and changes, too many to cover in one Master's Thesis, so I have chosen to concentrate on the individual level and the question who is a decision maker, with the view of responsibility and how this responsibility affects the individuals and his or her peers behavior in creating, engaging, executing and evaluating decisions.

Although, the original research of decision-making is quite old. The base of the research is done by Simon, March, Barnard in the 40's and Travisnky & Kahnemann in the 70's cognitional studies and organizational theories in 70's from Mintzberg et al and Vroom et al, but the topic is more prominent than ever, if you read any newspaper or business journal the word decision pops up more and more. The theories of the 40's such as bounded rationalism still works as a frame, but as earlier I explained the whole concept of work has changed; with the output (knowledge work), how it is structure (flat organizations) and tools (digitalization). In this study I will go through the prominent theories and more present research to compliment them and how the modern business environment has changed the decision-making and organization structures.

I would like to thank the whole Fingertip organization, especially the founder and CEO Jaakko Pellosniemi for trusting me with this data and for all the support. Also I would like to thank Pia Erkinheimo Kati Järvi and Seija Kulkki for the discussion about decision-making, innovation, organizational culture and other exiting topics, which challenged my thinking and views, and of course my professor and supervisor Olivier Wurtz for the support and understanding for my thesis.

2 Scope of the Study

Current literature and research of decision-making shows that it has various dimensions, views and methods it can be studied and viewed. Even though there is plenty of research on the subject from various fields of science, however there are still dark unexplored areas in this still evolving subject.

Papadakis, Thanos and Barwise went to through the current research on strategic decisions and found that the research is heavily concentrating on What? And How? The context and the content of decisions and if the findings focus on effects of these variables on performance, research prioritize financial performance, not others such as learning, innovation or other benefits (Nutt & Wilson 2012: 33, 35-46). Two of the seven priorities they identified that research had been evading were: Individuals impact of the context and decision-making process and they emphasize putting cementing implementation to the core of the strategic decision research (Nutt & Wilson 2012: 60-63).

This thesis will concentrate on the decision-making process as a whole and how the social and organizational context affect it. In collaboration decision-making the potential for better decisions is higher, since more members offers more resources and know-how than individual alone, producing better results (Nijstad 2009). Fear of collaboration and consensus decision-making is that it slows down the decision-making speed, which is seen as a virtue in management, although its correlation with performance is largely unknown (Perlow et al 2002).

This thesis and its research questions focus on two highly important factors especially in group decision making: Engagement and Commitment (Vidaillet 2008:422; (Rojot, 2008:144).). Traditionally position in hierarchy has been seen as a way to enhance these, but as modern organizations are more compelled for more flexible and flat organizations, hierarchy model roles can’t enforce these attributes. The scope of this study is to focus on how these attributes can be developed in a modern organizational environment a flat organization with highly digitalized behavior. The first research question focus how engagement can be created on individual level in decisions, second research question focus how commitment can be created in individual level and finally the last research question focus on can general engagement inside the decision enforce

individuals commitment to the decision.

Simon's model rational decision-making (1960), with his theory of bounded rationality is viewed as the foundation for decision-making research, this normative model focus on how a rational and best possible decision should be done. This normative view was criticized by organizational and behavior scientist, especially in the 70's when the modern organization and process thinking emerged. One of the prominent critics was Mintzberg et al (1972) concluded that this normative model was far away from reality since it doesn't count the social activities in the organization, which were irrational by nature.

Mintzberg et al created a descriptive framework of how decisions are done in organizational context. Another prominent research field merging in 70's was the contingency models, in organizational decision-making Vroom & Yetton (1973) created a model with different kind of decision-making styles depending on the situation. This thesis doesn't focus on comparing these theories or there quality, but the work as the foundation for the research and all of them offer value when the data is analyzed. The literature review goes through these three theories. Since the theories are quite old, this is combined on more modern research on these subjects and how they support the data and statistic used in this research.

Data for the research is taken from a company named Fingertip's own software were they track and measure their employees' actions. This software is the organizations own product and this thesis is part of their project to try to start measure and develop the data analyze of knowledge-work. Analyzing retrospective behavioral data of individuals and how they have behaved and analyzing these statistics with research literature on decision-making, organizational theory and behavioral research offers a fresh scope to how decision are made in the modern business environment and how the quality of them could be developed further. So even this thesis scope is on small organization and its behavior the results can be generalized to various situations, to give this thesis more value on the view of business and economics; only tactical and strategic decision and behavior in them is studied in this thesis. Since the sample focus on one organization and its software, the organization and culture is explained at the end of the literature review to give a better insight of the data.

3 Literature review

3.1 Decision making

Herbert A. Simon's model of processing data has sustained time and is still considered an essential part of various researches concerning decision-making. It contains three phases: 1) Intelligence, 2) Design and 3) Choice. In the Intelligence phase problem or opportunity is detected. Solution outlines and alterative problems are created in the design phase. In the third phase the best choice is chosen from the solutions (Simon 1960, Newell 1972).

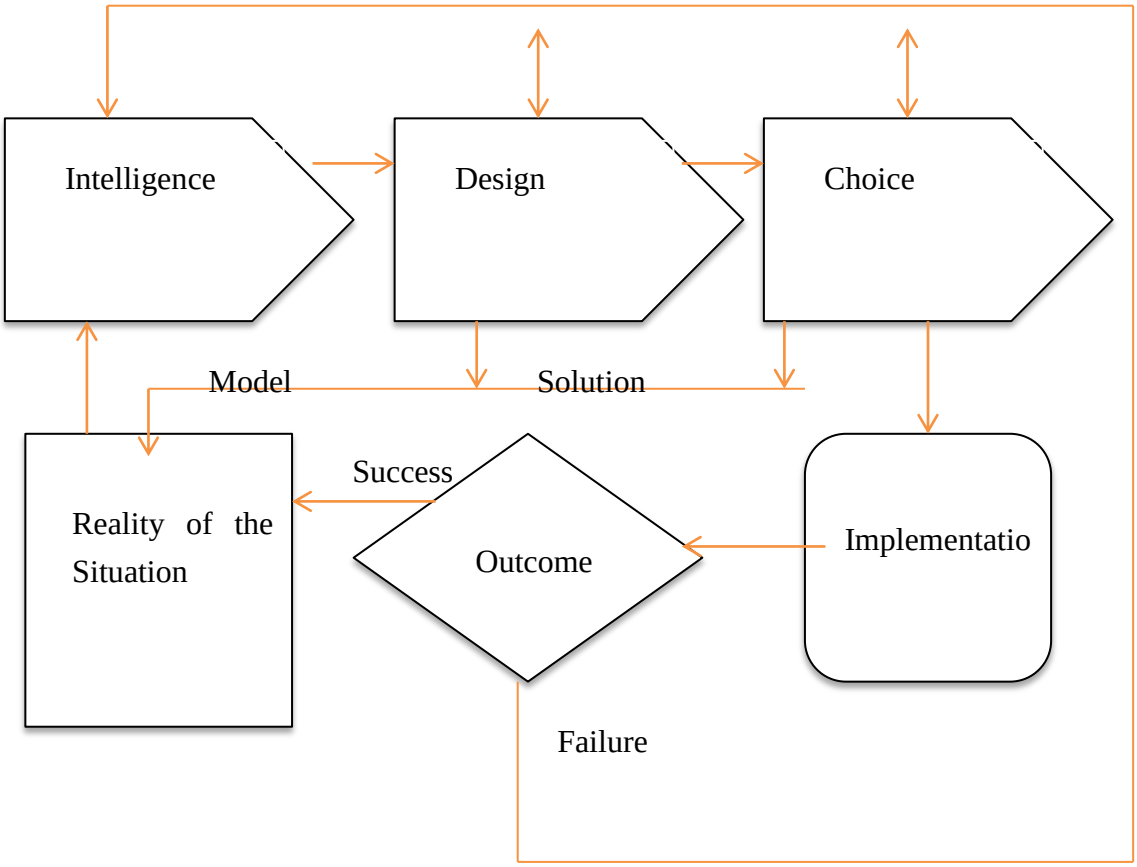

Figure 1. Rational decision-making frame Adopted from (Simon 1960, Newell 1972).

The way modern science community views individuals' decision-making process shaped during the 50's, when Simon's challenged the traditional view of "rational

man", that saw the person as a rational agent seeking for the best outcome (Simon's, 1955a: 100). Simon's suggested a theory of bounded rationalism, thus person makes rational decision in the boundaries of 1) information available, 2) how we can process that information and 3) Time in use (Simon's 1955a).

The world have transformed from the 50's, so that persons and organizations have access to vast amount of data, because of the development of information, communication technology and big data (Hilbert & Lopez 2011: 61). Also the expansion on the capability of process this information has affected the way we can work and form decisions (George et al. 2014). Since availability of information has greatly increased and processing it has been made simpler, it could be argued that the boundaries of the rationality could be removed or at least extended more normative approaches could be available to find a perfect formula for a decision. But as the capabilities and processing of information has grown, so has the challenges (Manyika et al. 2011).

Simon's himself noted about the information abundance in the future, devouring persons or organizations focus, this makes attention the most precious resources (Simon 1957: 167). Time will be the scarce resource, since our attention is limited with our own ability and motivation process the information (Cohen & Levinthan 1990). Even with all the dramatic changes in micro and macro issues of decision-making, with the swift from limited information to abundance of data and qualifying it, the basic concept has staying the same. "Bounded rationality" idea frame specially well the modern digital and global business world where scarcity of time comes even more prominent.

Complexity is another aspect of modern business world. Decisions have to take on account a larger number of stakeholders, overlapping goals and strategies in their decisions than ever before creates paradox conflict situations (Smith & Lewis 2011:384). Especially this is seen in executive roles where decisions are complex with large amount of stakeholders and outcomes (Hayashi 2001).

Earlier organizational scholars also considered these dynamics, but they focused on performance by emphasizing commitment to the decision and its execution (Barnard, 1938; Thompson 1967). Scientific community has also reacted to the paradox dimension and number of articles concerning the subject has increased approximately ten percent a year during the past 20 years (Smith & Lewis 2011:382). But the complex

relationship between decision-making and action during and after it is still relatively grey area in organizational research (Vidaillet 2008:421-422). This is one reason why this thesis doesn't only concentrate on the knowledge transfer inside the decision, but the actions that are necessary for the knowledge transfer and the decision itself.

3.2 Decision-making: More speed, worse results?

Speed is seen as a lifeline of businesses. From Taylor's Principles of scientific management published in 1911 to any modern management framework, organizational structure or process, speed is a means to an end or otherwise an important factor.

Speed is seen as one of most important competitive advantages, but going too fast can lead to various problems; decrease of performance in task in individual and organizational level (Payne, Bettman & Luce 1996; Pewlow 1993; Waller Zellmer-Bruhn & Giambatista 2002). In the complex environment the pressure, creates stress, cutting rules and cracks in the organization (Rudolph & Repenning 2002). Management views speed as a virtue, but in organizational and structural sense there is very little to explain how it affects performance (Perlow, Okhuysen & Repenning 2002).

In decision-making aspect, studies have found that pressure can boost individuals processing of data (Kerstholt 1994; Edland 1994). Also, research has detected coordination improvements within groups under pressure (Gersich 1988; Gersich 1989). So although Decision-making is traditionally viewed as balance between the time used and the quality of decision. (Dane & Pratt 2007:33), less time doesn't straight forward correlate with worse decision and there is a great pressure in research to find the shortcuts in decision-making (Eisenhardt 1989). The problem with the fast time decision is linked with the communication problems and time constrains combined with the information abundance. This research focus on how these problems can be tackled with individual level, with the current pressure for organizations to be more faster and agile (Kulkki, 503), decision-making must be speed up by the members of the decision

3.3 Intuition, faster and better decisions?

Human intuition has been offered as an answer to this dilemma between time and quality (Hayashi 2001). Especially research highlights intuitions importance handling

complex projects quickly, or in uncertain environment (Hayashi 2001; Isenberg 1984; Katri & Ng 2000). As earlier mentioned in modern era business executives are facing a complex environment with paradox decisions and it is seen as a decider between well performing executives and board (Agor 1989). Also, this can be seen as a large gap between decision-making of middle management with large amount of more simple decisions to executives with more complex and intuitive based decisions (Hayashi 2001).

Intuition on individual level can make the whole organizations decision-making more efficient, when it is used and nurtured right (Dane & Pratt 2007: 34-35). Some authors even suggest, that better performance is generated by following intuition solely over rational thinking in individuals' decisions (Gladwell 2005). But trusting intuition exposes one to various BIAS and other issues (Kahneman 2003:34). In organizational research organizations can user more rational or intuitive based decision-making process, but in general the rational decisions tend to lead to higher performance (Nutt & Wilson 2010: 47; Goll & Sambharya 1998 Goll & Rasheed 2005; Mueller et al 2007).

Context where or in what environment the decisions are made makes a huge difference in intuitive and rational decision-making. A study of 159 US manufacturing companies suggest cohesion of better performance with companies with non-intuitive decision-making models in fast expanding industries (Goll & Rasheed 2005). Stability and the dynamics of the business environment where the decision are made reflect the performance, rational decision-making losing value in more unstable environments (Mueller et al 2007). Thus, intuitional decision-making process impacted positively performance, in high uncertainty situation (Khatri & NG 2000). They call intuition as unbiased state, not controlled by emotion, but past experience and expertise. Not compare it as contradiction to rationality, but as a faster way to come to a conclusion, consisting of; reliance of judgment and experience, combined with gut feeling (Khatri & NG 2000).

One big problem comes from the term intuition itself. Since intuition has such a prominent part of decision-making the term hasn't been framed exactly. It can be seen as an outcome or a process of swift reaction in cognition, usually the in earlier research have focused in outcome perspective and with development of psychology and measurements tools of neuroscience, research has focused in intuition as a process (Dane & Pratt 2007: 34-37). Studies suggest that intuitive is best used when individual has expertise of the field and it is not the final judgment, but the intuitive ideas are

analyzed in collaboration (Sadler-Smith & Sparrow 2008: 308). This is why commitment and engagement, which are measured in this study are highly important to ripe the benefits of intuitive side of decision-making.

3.4 BIAS, Emotions and Politics

Simon's models and theories offer a solid ground for decision-making in organizations, but it has also been challenged with critic from various directions. As Simon's limited the rational decision with boundaries of time and cognitive capability of gathering and processing the information, other authors have also highlighted other limitations. Research in the field of psychology and new research in neurology have argued that feelings and emotions play a great role in decision-making and that the social environment affects these emotions (Cohen 2002: 506; Davidson 2001). Not only do our cognitive abilities limit our capabilities to process and gather right data as Simon's argued, but during 70's Kahneman and Tversky argued that contradict to social science dogma that human decisions making, behavior and goals were somewhat rational in the bounded rational context and irrational decisions were caused by feeling such as fear, hatred or outside pressure (Kahneman 2011:8-9).

With behavioral studies Kahneman and Tversky revealed that even during normal behavior individuals' decisions were not rational, but their behavior and thinking was affect by systematic errors, various cognitive biases affect our decisions-making (Kahneman & Tversky 1972, 1974, 1982). Even when these had rewards for right answers and even test with professionals irrational behavior was part of their decision making (Kahneman 2011:8-9, 222). Even with experience, skills and knowledge, professionals tend to make irrational choices, because of the cognitive biases, over confidence, risk aversion and confirmation bias are example of biases affecting decisions in business environment (Beshears & Gino 2014:).

Kahneman viewed the problem from the view of dual-process theory, which was created by Jonathan Evans, who divided decision-making in two processes: Heuristic in which relevant information is chosen and analytic process where the relevant

information is used to judge the situation (Evans 1984). Kahneman describes his dual-process model by system 1 and system 2. System 1 works as a work as an automated memory system, where one can quickly retrieve solutions, just like intuition. System 2 is more analytic and calculating, making it slower. As system one is more efficient it is used more often and only harder and more complicated task are done by system 2 (Kahneman 2003).

Because "System 1" or intuition is a more efficient and faster higher level management and executives rely on it and it can be the difference between success in middle management role compared to executive (Dane & Pratt 2007: 34-37). (Hayashi 2001). This is explained by recognized-prime decision model, were people intuitionally using their previous experience to create a pattern and make a decision (Klein 2008: 354).

Since these intuition-based decisions come from your deep memory, it has its issues. Same cognitive factors that lead to the intuitions effective and fast, also creates cognitive biases that can harm the decision-making (Tversky & Kahneman 1974: 1125). Also, these biases are deep in our system and can be hard to detect and even harder to change, even if they are noticed (Kahneman 2008: 34-37). Rewiring our decision-making process to exclude biases, is viewed such a hard task, that solution is usually not to exclude the bias, but recognize them and include the change of human error in both individual or organizational decision-making (Beshears et al 2014). With collaborative decision-making these bias can be limited, since expertise and views of others detects and limits individuals biases (Sadler-Smith et al 2008; 305-313), this is the reason others in the group are also active, committed and engaged.

3.5 Emotions in Decisions

Emotions can affect the decision-making in various ways. From the previous chapter about the intuitive decision-making, emotions can play a role in the cognitive process of the actual decision, by affecting our thinking and intuitive senses, as Burke & Miller defined intuition as a cognitive decision-making based on past experience and emotions (1992:92). Also, our perception about the information received changes by our current emotions, this was for example tested after 9/11 event and how people processed and viewed the situation, was intact with the emotions they had (Butt 2008).

Emotion role in intuitive decision-making in general has being researched and a

correlation is found (Chen & Chaiken 1999:87). Specific group a lot of studies focus is stock traders and their decision-making, since their hectic environment, forces them to make decisions under emotions and trust on combination of intuition and data. Controlled lab studies have indicated that emotions play a big part in these financially large and risky decisions (Lo 2002; Fenton, Creevy, Soane, Nicholson & Willman 2010).

Herbert Simon saw emotions and motivation also affecting ourselves in decision-making, by that by our feelings we control were we use our attention, time and thinking, with bounded rationality and the limitation we have our feelings would control what we use our energy in. In the bounded rationality theory, our cognitional capabilities and limit of time compared to the abundance of the information, limits our rationality in decisions, so our emotions control partly the attention we can offer to a subject. From business point of view, managers' attention in the other hand can be seen as our restriction of awareness and focus we can offer a subject (Helfat & Peteraf 2015). From the organizational point of view emotions of individuals should be harness to the goals organization wants to achieve (Simon 1997: 89-91). Emotions provides valuable information about others, roles and the environment itself, so emotions help clarify the reason (Buck 1984). Particularly since attention is needed in strategic decision-making and how to balance between ones effort on decisions (Laamanen & Wallin 2009).

During the digital age emotions meaning can be interpreted two ways: from the Simon's way the studies show that emotions and feelings of large population can be effected with the social media and the herd action it creates (Coviello at al. 2014; Kramer et al. 2014). On the other side studies have found that as email has enabled much more communication and interaction between colleagues, it has decreased the number of other communication between colleagues, especially the informal interactions, which has led to lower engagement and involvement between employees (Byron 2008: 309; Sarbaugh-Thompson and Feldman 1998). Also can online and virtual reality mimic the emotions of real life and also do the emotions shown in online predict same kind of behavior as real life emotion do psychologically and virtual environment. There is also overconfidence on us that we can show our feelings and see others emotions virtually, for example this was found as a reason of miscommunication in email communication (Kruger et al: 2005). Digital communications also allows one to conceal emotion compared to in real life interaction, which can be useful in work where individuals might have to adjust their personalities to their roles in work life (Koles & Nagy 2014: 293). But as Simon and the research says that emotion are used to determinate what we

want to prioritize and what we think others should prioritize, it's a good to turn in how we decide in an organization (Simon 1997: 89-91). This is why in social situations such as collaborative decision-making emotions play are important role to communicate and engagement between individuals.

3.6 Organizational Decision-Making.

Barnard wrote (1938), "The decisions that an individual makes as a member of an organization are quite distinct from his personal decisions" (Barnard 1938: 77). One reason to this was already mentioned earlier when the roles individuals have to take in an organization and these effect their emotions and feelings they can show (Koles & Nagy 2014: 293). Most often in a role in organization individual has to suppress ones feelings and emotions (Kahneman & Travisky 1979), it should lower the amount of bias thinking, and thus more rational decisions should be reached.

In theory organizations should be the perfect place for decision-making, by theory organizations are structured to support decision-making, offering information to the right persons at the right time, decision would be done rationally without emotions interfering and good decisions and decision-makers are rewarded. As Henry Ford designed the modern factory to produce with full efficiency, modern organizations where the knowledge is the input the output should be high quality decision In reality, research points out that half of the decisions fail (Nutt 2002). The prism of reason and causes for this is large, since basically everything influence the decision and in reality decision isn't an individual process, but a sum of horizontal and vertical levels, big decisions are construct from various small ones (McGrath & Tschan 2004). Decision could be seen as outputs of knowledge-workers, but since humans don't operate as machines, these mechanical types of management and control tend to fail (Zweig, Webster & Scott 2010: 117).

The decision-making in organization can be set to three groups: 1) Rational decision-making, 2) Bounded Rational and 3) non-rational. As organizations pursue the rational decision-making in reality is that they are usually stuck at least in the bounded rationality. As bounded rationality states the decisions are always bounded by the resources and time. Organizations, especially with modern digital analysis, communication and data system, should be able to offer resources, but the time is a limitation in organizations (Kulkki 2002: 502). Some authors argue that organizations

decision-making is often actually non-rational. A theory in this area is the "garbage can theory". The name itself doesn't give a lot of credit to the organizations structure. This model sees the organization as a garbage can, a melting pot where decision are made not in proactively, but as reactively to different factors (table1). It is revolutionary idea in this model is that, comparing it to other decision-making theories it breaks the links between problems, solutions and the decision-makers, but views them as independent actors that meet (Nutt & Wilson 2010: 575).

Four original streams in "Garbage Can" framework	
1. Problems	Needs attention, can be external or internal. Most decision-making theories state that problems triggers action, such as decision-making. This can also happen here if the problem is sever, but the view in this framework is that the problems will float and someone will go to the "garbage can" where the solutions are hoped to be.
2. Solutions	The view of solutions is interesting, since it differs from all the others theories, by not being the natural continuum of problem, but it is a object of its own that, could have been developed before the problem, but had been left to the garbage can. There can be various reasons for this, such as lack of resource, commitment or interest. Idea is that the problem is not only seeking a solution, but the solution is actually seeking for problems to solve actively.
3. Participants	Traditionally it is also viewed that the decisions have a responsible or that individuals are committed to finding the solution to a problem, but in this framework, individuals are seen as participants who come and go. The influence to the decisions of participants comes from the resources the individual is able to give for the decisions, not what is expected or demanded for.
4. Choice opportunities	This is the expected behavior, the actions or the opportunity, that were it is expected to make a decision. When the traditional models go straightforward from problem → Solution → decision. This framework sees the decision part, as an opportunity was the decision can be or is expected to be shown visible, so that others notice it. For example launch new strategy, hire new person.

Table 1 Four streams of the "Garbage Can" Decision Framework explained. Adopted from: Garbage Can Framework for organization problem solving was ordinary developed by Cohen, March & Olson in 1972. (Cohen et al,1972:3)

The authors of Garbage Can model see the model more descriptive than normative. It is

more to describe the decision-making and problem solving in organization situations, where the rational decision-making models are not met for a reason or another. The authors themselves that this is not the optimal way of making decisions, but it's a way decisions are made when three factors are in met in organization or a situation: 1) The preferences and standards are not set or adopted perfectly. It structure is more set from clusters of ideas than a structured decisions. 2) Secondly the technology is unclear and processes are not clear, the operations are more or less worked on past experience and trial-and-error based. 3) Is the participation; individuals participation depends on the time and resources they currently can spend on it, so also the participation is on ad-hoc basis. The authors identified this especially in public and educational organizations, but it is also found in any organization in various situations and times. (Cohen, March & Olsen 1972: 1-2, 20)

The opposition of this is the rational system theories. There are several rational decision-making models and frameworks. Such as rational decision-making model (Robbins &Timothy 2002:8) or a very similar rational planning model (Brook 2006 :175), which is designed for public entities. Problem with these are the same problems discussed earlier with the bounded rationality, limited with time, resources and our cognitive limitations. Organizational decision-making also opens a new dimension of politics and politics is described as a module that prevents organizational decision-making from being rational (Eisenhardt & et al 1997).

In organizational context politics is seen as major threat for rational decision-making (Nutt 2010 123: Harrison 1999; Elbanna & Child 2007.). Once again bouncing back to bounded rationality, as the complex situations are handled with imperfect information, the decision are made of selective perception and the identification of problems are more set on the political goals than the real goals (March & Simon 1958). Combine the strains of bounded rationality, with the reality of modern organizations, that are set up by different functions, with differing goals, culture and values, the only way to influence across them is politics (Mumford and Pettigrew 1975: 57) This influences every part of the decision-making process from sharing the imperfect information (Cyert and March 1963), slowing the decision-process down (Pffer 1992) and the outcomes can be used to satisfied inside powers rather than external environment that the organization should serve (Nutt 2010:121). Mintzberg describes the difference between his organizational decision-making and the rational models, is that his framework concludes the process as whole and his hence more descriptive in its philosophy, trying to explain what happens in reality in the organizations, compared to

normative philosophy of rational models (Mintzberg et al 1998). This thesis concentrates on the descriptive side and especially on these social factors and how they affect the quality of the decisions.

For these reasons decision-making in organization is inflicted with politics and politics is accepted as a natural state of organizational decision-making and although it is mainly seen as a negative subject in research (Nutt 2010:121). Politics in decision-making can be seen as an own frame of how decision are made in real life (Eisenhardt and Zbaracki 1992). In reality organizational decision-making is balancing between the rational and political models, between organizational goals and individuals' goals. As the general view in research resembles the public view of negativity of politics, it has also been seen to have positive impacts. As the normative decision-making research focus on the rationality, politics in decision-making research is mostly seen in the implementation of the decision (Nutt & Wilson 2010: 211). Academics has also suggested that politics should be understand more broadly and not only from the view of serving one's own interests, but also as ways to serve the organization (Mintzberg 1985; Nutt & Wilson 2010; 123). Simmers would split the politics in two categories: 1) Competitive politics; Win-Lose mentality and self-interest versus 2) Collaboration politics; Supporting each other even in conflict, interest are transparent in the competition, searching for win-win situations (Simmers 1998: 38). Politics done right can be seen as smoothing the way for the organization to adapt to the implementation phase of the decision (Mintzberg 1998) and also politics helps rally individuals behind your decision improving quality of the decision (Mintzberg et al 1976: 261). For this the group political and collaboration activity is important for the decision and the research questions one, two and three concentrate on what are the qualities that could enhance the quality of the decision-making process.

Mintzberg et al (1976) studied 25 big strategically decisions from stimulus to the execution and as anticipated they found them complex, dynamic and very political. With deep analysis they found an underlying framework, which formed a concept that unites all these otherwise different decisions. This frame consists of 12 elements; three phases quite similar to Simon's model (identification, development, selection), three set of routines that support these phases (decision control, decision communication and politics), and six dynamic factors (interrupts, scheduling delays, timings delays and speedups, feedback delays, comprehensive cycles, failure cycles). Decision were also started by three different kind of stimulus, that start from the recognition, at the one end opportunities, that triggers a decision process to achieve something, next are the

“problems” which trigger decision to react and fix them, totally opposite of opportunities are “crises” which trigger decision to counter these crises under pressure and intense moments. These basic frameworks focus on the interrelationships between them. (Figure, 4)

The three phases are similar to other rational decision-making models. Identification, that starts by the recognition of the problem, crisis or opportunity. In recognition the issue or opportunity becomes visible. Not only is various factors affecting the recognition of the signal, such as environmental and time pressure, resources in use, the way organization gathers the data and time, but also the fact that who has detected it and how does this person interpret it, this is also affected by the social environment and context it is and the discoverer is in, for example organizational culture (Noorderhaven 1995; Smircich and Stubbart 1985).

So even the signal is recognized it doesn’t mean the problem is understood correctly (Noorderhaven 1995), this is why huge emphasize is put on the second part of “recognizing phase” formulating of the problem. First question is about the social and organizational aspect, is the decision forwarded informally or is there a formal diagnosis (Mintzberg et al 1976:266) (Figure 4. First decision point, marked by circle after “Recognition” lines going either forward or upwards to “Diagnosis”. In general these Circles represents the points that require an action; this can be dependent on the person himself, the organizations culture and structure. Two ways to advance is suggested in the original framework, either the fast way of using known solution “a routine” or diagnose the problem. Even if the problem or opportunity is diagnosed in formal way, the function and specializations of the people involved affects the way the issue is approached. For example legal and marketing divisions will have very different ways to process a decision or the objectives are very different if you consult the R&D or Sales department (Vermeulen & Curzeu, 2008; 35). For this reasons the social decision making part is important to offer different views and expertise from the start to the end of the decision, not only in certain point of the decision. Variety of decision-making research have found that heterogeneous groups create better decisions, by more cognitive advantage, improved creativity, because of different viewpoints, also implementing more complex decision and problem solving (Nutt & Wilson, 2010: 404). On the other hand commitment and communication problems, that can lead to more conflict and leadership challenges when multidisciplinary teams are created and the potential advantages have never materialized (Nutt & Wilson, 2010:404-405; Mannix & Neal, 2005). In addition to the rational decision-making models, the substance itself is

not the only important part formulated, but also who to involve to the process (Nutt, 1993). In this thesis concentration is on how these chose individuals are engaged to the process better, since the research has found a lot of benefits in involving heterogeneous group, but also the threats concerning it can be devastating (Nutt & Wilson, 2010:404-405). Since this phase requires a lot activity, most of the resources are allocated to this phase and it dictates the two other phases, it is no wonder Mintzberg et al called the development phase, the heart of the decision-making process. The most important part of the phase is the decision between Search or Design, which depends of the complexity of the issue and the past experience and knowledge in the organization and personnel (Mintzber et al, 1976; 254).

Most often first solution is to search for ready-made option or already used ways. This can be active search of organization data, from for example IT or use of human capital, past experience and knowledge of the employees, or even external stakeholders, consultants, suppliers. It can also be passive, which was discussed more on the "Carbage Can" theory (Cohen, March & Olsen 1972: 20); also the solution might be looking for the problem or the organization, rather than always thinking that the organization looking for the problem is the only active one. According to the research most of this is done in hierarchy fashion starting from actively searching, with a passive period starting after it and ending with expanding the search to external sources. Also this expanded horizontally first from subjects close to the individuals and their expertise and then expanding this further to more unknown areas (Mintzberg et al, 1976; 255). If the search for ready-made solutions isn't fruitful a design routine is needed, where the solutions is either a modification of a previous solution or a custom made solution. This usually takes more resources and activity, than using a ready-made solution (Noordhaven 1995). So, usually it is more convenient to seek ready-made solutions, use them or modify them, than use custom made solutions, although in minority of the cases process went straight to design routine, so it is kept in different line in with search routine in the figure 4. In the ordinary study Mintzberg et al identified seven different variations of these depending how it's triggered and by the characteristics of the decision, more about these will be discussed later, but one point where there was clearly differences between the phases, was the Search and Design. If organization chose searching for ready-made solutions they could, cycle this part several times, looking for the best answer before moving forward. Vice versa if the organization chose the designing of a custom made solution, it would do it only once. If this is observed from rational view of decision-making the logic goes against many findings presented in this thesis in chapters 3.1-3.4. Since with ready-made solutions the organization should have

more previous knowledge, experience and more simplicity, increasing the possibility to do it right on the first time, compared to custom-made solution at where in general more complex and the organizations were more unfamiliar. This is explained with the dark side of politics, since the design routines are much more costly in both resources and time compared to the ready-made and the decision-makers are politically stuck with the design after using the time and resources. Hence, they have to move forward with the first solution. (Mintzberg et al 1976; 255- 256). This is why collaboration is highly important in the design phase, to either find the right ready-made solution or to design the best possible solution for the decision. In the identification phase the selecting of right people was important, but that is not enough because keeping the chosen individuals committed to the process is crucial and for that reason, this thesis will concentrate on hypothesis 2 how the commitment of the individual is kept alive. This has been proved problematic and political issues rise when heterogeneous teams are created (Nutt & Wilson 2010:404). Fingertip's social decision-making culture concentrates on the early buying of the stakeholder and the commitment that leads to the collaboration (Jaakko Pellosniemi 2015:61). (Mintzberg et al 1976).

Selection is the last phase. In normative theories of rational decision-making models it is described to consist of: 1. Choosing the criteria, 2. Evaluating the different solutions by these criteria. 3. Making the best rational choice of the alternatives. Argument is that these don't describe the reality of the organizational decision-making process. They suggest that the process is more multidimensional and repetitive. From the decision studied they named these three routines in the selection phase: 1) Screen, 2) Evaluative choice, 3) Authorization (Figure 2). (Mintzberg et al 1976; 255- 257)

Screen routine is a continuum of the search routine. If the process ends up with various solutions to choose from, the Idea of screening routine is to select the best options found from the search routine, so that these can be evaluated. Politics come in when the evaluating criteria is select, since unlike in normative models in reality various stakeholders have different goals even in same organization (Noordhaven 1995). Mintzberg et al study describe it as superficial routine, since in the cases studied screening wasn't done by rational phase, but rather after each time a single solution is found, it is quickly screened and this is often done by separate criteria compared to the other solutions in the same process (Mintzberg et al 1976; 257). Screening wasn't necessary if the design routine is used, since the first custom-made solution is used.

Biggest discrepancy between the strategic decision-making research and the reality is

that the research focuses often on the evaluation part, but as discover in the empiric research in reality the evaluation part, particularly when a custom-made solution is used, the stakeholders are already concentrating on implementation of the decision. Mintzberg et al divide the evaluation to three routines: 1) Judgment, 2) Bargain and 3) Analysis. As rational decision-making focus on the analysis part and its importance, the empiric research show that it was the least used routine of these three. Judgment was the most used routine, it is an evaluation that one individual does alone; by reasoning that isn't necessary explained or can't be even by explained. In bargaining group of decision-makers bargain about the best choice by comparing the solutions they have chosen themselves, with the individual judgment. In analytic routine first the experts or technocrats carried analytical part of the solution evaluation, continued by a judgment or bargaining routine to finalize the rights solution. Even though comparing to rational decision making the judgment, has great risk of failing, because of the bias and individuals own cognitive restrictions. When the politics is taken in to account, it is selected the most because of its simplicity and speed. Thus, even though the research have evolved from the 70's, there is still immense debate about decision outcome and measurement of it, but one thing is sure, if the decision doesn't implement action, there is no result (Nutt &2010:450-455). (Figure 2.) (Mintzberg et al 1976; 257 -279)

The last routine is the authorization routine (Figure 2). The name already suggested its political nature compared to the rational mode, where the last stage is the selection of the best choice. In this framework, it has more seen as checking the acceptance of the solution from high-level stakeholders, rather than choosing between solutions. This routine was also used only in 14 of the 25 cases, total of 33 times. So there was political resistance quite a lot, usually it was a binary process of acceptance of rejection. Also the authorization was seen problematic for several reasons, since usually the resources were already used and time was scarce. Combine this with the usual case were the person responsible for authorization, hasn't been involved in the process and hast to make a yes or no decision, with minimal time and information. This is why engagement and commitment is needed from all the stakeholders throughout the process not only in the steps they are responsible for. (Mintzberg et al 1976; 279)

Three supporting routines were identified that supported the progress of the decision process through these phases. These were 1) Decision Control routines, 2) Decision Communication routines and 3) Political Routines. Control routines, starts when the decision-maker starts to map out the resources, persons and time for the decision and how to structure it, a kind of informal guide to the decision-process. It has been hard to

measure since it its informal and often happening in the decision-makers mind. It has been split in two categories: planning and switching. Planning is a vague plan how the decision should go forward; this usually changes during the different phases of the decision and is in general flexible. Switching is more of developing the decision one phase by phase, allocating resources for the next phase and after than concentrate on the next one (Mintzberg et al 1976: 261).

Decision communication routines were seen as the most dominant of the supporting routines, it was detected in every phase. This isn't really surprising since stakeholders have to communicate together to work. The communication routines were split to three sub categories: 1) Exploration that includes scanning information for generating a concept and data base to use. 2) Investigation, it focus on searching and confirming information, concentrating more on specific information opposition to general information in exploration, this is usually done on informal way, with verbal communication means. Older study concludes that most human resources is devoted to gathering the information and evaluating its consequences (Cyert, Simon & Trow 1956; 247). 3) Dissemination, this is the time spent communicating information about the progress of the decision to stakeholders. Often the more persons are involved or if the outcome is significant, more time is used on dissemination between the persons involved. The research questions 2 will concentrate on how the commitment of the users affects the communication process of decision. (Mintzberg et al 1976: 261-262).

Third supporting routine is politics. From the start of organization studies to modern day decision-making research, politics has been seen as a big influential factor in decision-making (Bower 1970:68; Nutt & Wilson 2010: 105). In short it could be described as tension between different stakeholders and their own goals, compared to the goals what would be set for it in the rational point of view (Nutt & Wilson 2010: 105). Earlier in this chapter politics and political behavior in organization was described in more detail, but as a repetition: it is mostly used to determination of the allocation of resources, outcomes and to enforce the commitment and implementation of the decision and its process. So its effect can be dramatic and as many authors argue it almost make the "rational decision making" view obsolete (Miller & Wilson 2006:471). Politics plays interesting role in the study, but has a more indirect role in the hypothesis, since it is counted as how committed users have been comparing decision where they are accountable or in another role. Comparing modern flat organization, that is used in this case Fingertip, where the role is taken rather than given as in older hierarchy organizations, politics should be shown by the difference how users behave in their own

decision compared to decision made by others. Hence, the political view in this thesis resembles the political behavior and how it is described in Mintzbergs et al study, for example in the framework (Figure 2.) the lightning symbols shows the various locations were heavy political action is spotted. It has a huge role, but its spread across the process, so the total contribution of politics is hard to capture. (Mintzberg et al 1976: 265).

When writing this literature review I though it as a great discrepancy, when I tried to write about decision-making and searching for a framework to base my assumptions and hypothesis on. During the time of writing my thesis about collaboration and decision-making for example Harvard Business Review has published an edition of the magazine focusing on decision-making (Harvard Business Review 2015 May: How to outsmart biases and broaden your thinking) and also an edition focusing on collaboration (Harvard Business Review 2016 Jan-Feb: Collaboration Overload). With this emphasize in the topic, I still basing the framework to a study done in 70's, but when going through the decision-making, especially meta-data, there is a lot authors talking about the lack of real research on the topic since the breaking of the normative and descriptive view. Many have pointed out the organizational behavior authors has abandoned the topics (Hodgkinson & Starbuck 2008: 405). It is suggested that the development of the field and the word decision, from a simple decision to a process with abundance of factors affecting it has slowly deluge the research (Hodgkinson & Starbuck 2008: 405). With the growing amount of factors, relationships and causalities combined with the growing complexity of decision in modern business world, Mintzbergs et al model has been used as a framework, especially in the empiric research of the decision-making, adding or focusing on some of the key parts (Nutt et a 2010: 458). Since the complexity of the decision-making has made it hard to study it as a single entity (Daniels 2008:335). The thesis focuses on few communicational and political aspects suggested by Mintzberg and other authors after him. As communication function and work environment are social entities, that have develop during the decades, this thesis will focus on the politics and communication in modern flat and more transparent organization, which is suggested as an interesting topic to expand the research of decision-making in the Oxford hand book of decision-making (Daniels 2008:335, Kopelman, Rosette, & Thompson 2006.)

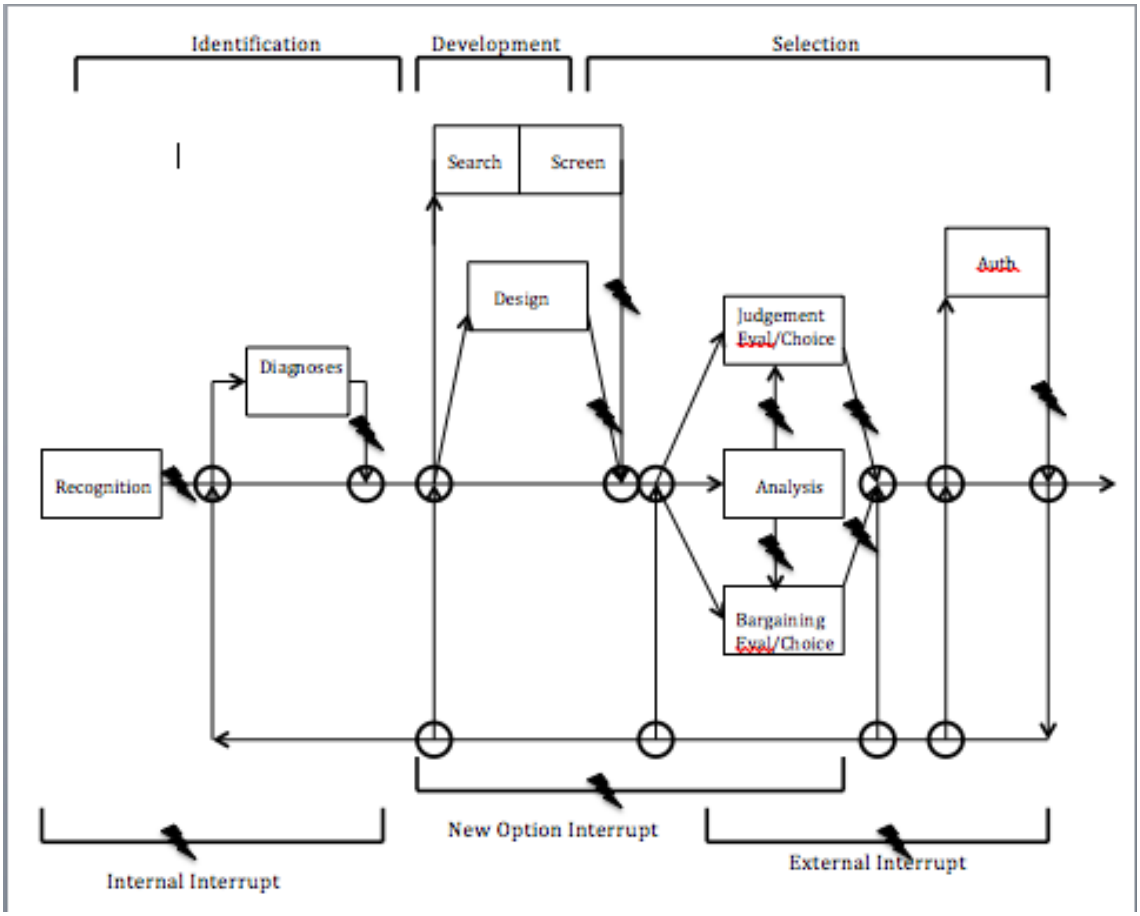

Figure 2 Unrational decision making process, Adapted from Mintzberg, H., Raisinghani D. and Théorêt, A. (1976). "The structure of "unstructured" decision processes." Lightning pictures presents places where conflicts emerge.

The irrational decision making process, takes the political part to the decision-making offering more realistic view of the situation. However, even though it takes in count the irrationalities in political sense. The decisions model is still build on the paradigm that the decisions themselves are made rationally. The view that only external and unordinary matters are criticized by Kahnemann and Travisnky, that argues that also the cognitive boundaries limit our decision-making (Kahnemann & Travisnky 2011:8). Criticism have gone back to the cognitive and bounded rationality, especially in the situation where time is scare, for example in entrepreneurial decision-making (Vermeulen & Curseu 2008:31-32). Mintzberg didn't refuse his view of rational decision, but expanded the model with new approaches to decision-making. First approach is the rational way, which was names "Thinking first" (Table 2). . Thinking first is closest to the traditional view of decision-making and to their own model; problem triggers the process, recognizing the causes, designing solutions and implement it. This is used in complex and unknown situations, where there is time and resources to

invest in. (Mintzberg & Wesley 2001,88-89)

Second approach is heavily linked to the intuitive decision-making that was described earlier chapters (Table 2). This intuitive based approach called "Seeing first" intuition is called unbiased state, not controlled by emotion, but past experience and expertise (Khatri & NG 2000). Khatri and NG don't compare it as contradiction to rationality, but as a faster way to come to a conclusion, consisting of; reliance of judgment and experience, combined with gut feeling. However for example Kahneman, critics that the intuition is biased and the bias are harder to detect, since they are hard coded to our cognition (Kahneman 2003:34). Mintzberg & Wesley referred to Graham Wallace's "ape test" in their article; when they ape couldn't reach the banana in the roof, until the box was discover at the corner and it realized to use it to lift himself up. This lead to the logic of preparation as first step followed by incubation, illumination and verification by Graham Wallace the conductor of the study. Preparations in their case were the years of experience and expertise; after these are acquired people can see the upcoming problems before hand. This kind of intuitive was seen as a requirement for managers to reach the executive level, from making quantitate decision, which is closer to the approach number one, than in the executive level were more intuitive decision are required (Hayashi 2001). (Mintzberg & Wesley 2001:90-91)

Third approach is doing first and then evaluating and thinking of the consequence. This "action oriented" attitude is used best, when rationality is unusable and lack of knowledge or vision of the subject is thin (Table2). This is more forward way of thinking and making the implementation part of the decision-making process rather than the end part of it (Mintzberg & Wesley 2001; 91). This is approach is rather new in research and lacks specially empiric research around it (Vermeulen & Curseu 2008: 33). But in modern dynamic environment and digitalization has made it potential, because of the fast result and quick feedback loop enabled by digitalization, for example in A/B testing in digital marketing. Also for entrepreneurial and start-ups this approach is seen as viable, because of the fast paste and lack of resources of large organizations (Vermeulen & Curseu 2008: 34). However, it is suggested that large healthy organizations should mix up all of the approaches, since all of them have their benefits and problems, so it is more about knowing when to use each of these approaches rather than choosing one (Mintzberg & Wesley 2001; 90). This thesis focus most on the rational and intuitive approaches, since the collaboration idea and communication effect most the information gathering and sharing part. The thesis also studies actions during the decision-making process, but rather from the commitment side and from the view of

how the communication and social context affects this commitment to action.

Name	Rational	Intuitive	Action Oriented
Characteristics	Scientific	Art	Craft
	Plan, program	Vision, imagination	Venture, learn
	Verbal	Visual	Visceral
	Facts	Ideas	Experience
Example	Improving current processes	New product development	Disruptive technology
Works best in	Issue is clear	Creative solution	Confusing and new situation
	Data is reliable	Combined various elements	Complicating matter and specifications slows down too much
	Context structured	Cross border communication	Going forward can be guided with few simple rules/relations
	Thoughts can measured		
	Discipline established		

Table 2 Comparing the characteristics, best situations of use and examples of the three approaches to decision-making, by Mintzberg & Wesley. Adopted from Minzberg & Wesley, 2001: Desicion-making; Its not what you think. MIT Sloan Management Review; 41:3. Pages 89-93. Combined tables from the article pages 91 & 93.

The Mintzberg's et al original "Unrational decision making process" was a framework, to offer building blocks to describe real decision-process in organization. They discovered seven variances that went through this process, but had emphasized in different sections. This thesis won't focus on these different models, but on the emphasize of communications, politics and engagement, which is required to implement these decision. Also how these politics and other social context drifts the reality of decision making away from the normative theories. Earlier mentioned problem is that the politics is viewed as negative thing and that politics and rationalities relationship is contingent throughout the research field (Nutt 2002). Research debates about the interdependencies of these two contexts. In this thesis politics is viewed more as an

socio-political processes, consisting different social interactions, that tries to influences individuals in good and bad ways, this way is closer to behavioral and political decision making (Fahey's 1981) rather than the view common in organizational decision making (March & Simon 1958; Nutt 2002) where it is viewed as mainly bargaining and self-interest, a negative factor that adrift the decision away from its maximal rational benefits for the organization.

Earlier in the thesis the benefits of political behavior was discussed. Benefits of political behavior were the allocation of resources and man power, engaging and committing individuals to the decision, so that the implementation and other activities were done in time. In this thesis the focus will be in the generating of the commitment and engagement in individuals. In hierarchy models this responsibility of leadership has been appointed by role and position, but when the organization is leaning to shared or horizontal leadership, the burden of engagement and commitment falls on the shoulders of everyone in the decision. (Bolden 20011)

The development of flat organizations and horizontal hierarchy has developed a paradox: management is seen less relevant, but since teamwork and groups have become more essential part of knowledge work value of leadership has risen (Carson et al 2007). Leadership challenge raise especially in team consistent of multiple members that are experts in their own functions (Williams 2001). Collaboration and communication suffer in heterogeneous groups (Barrett & Oborn 2010: 404). This thesis focus on how this leadership can be achieved by social means, so that vital components: commitment and engagement can blossom.

3.7 Leadership in leaderless organization

Creativity and innovation are seen as the lifeline of modern organizations (Kulkki 2002: 501). The bureaucracy of hierarchical organization is seen as a big obstacle for the knowledge sharing that is central requirement in innovation. Large blame of this is put on the shoulders on the managers and managers' inability to lead teams is most often blamed for failure (Bergmann et al 2012). Coming up with the new idea is not enough, but individuals has to sell it to his or her superiors to create activity and engagement from the organizational perspective (Pandza 2011).

Recent study by Järvi & Välikangas (2016) focuses on non-managerial cognition in organization. This study was done in a hierarchy organization, but it found out ways non-managerial employees could pass their managers, ways to create "circulating cognition" inside the organization, transferring knowledge without leadership (Järvi & Välikangas 2016:34). Knowledge itself is a vague concept (Ståhle & Grönroos 2000), but this thesis focuses efficiency of its us, since decision-making research has pointed out that now-a-days the information abundance is threat for rational decision making, rather than lack of it (Simon 1976). Hypotheses two focus how this kind of "non-informal" information sharing and getting acceptance to this can be enforced without the authority and role.

Vroom & Yetton created a contingency model on group decision-making model for organization, they identified five decision types, best decision-type should be chosen by answering seven questions with binary "yes" "no" answers. The questions are on the three areas, which are discussed in this literature review: decision quality, time constrains and politics/commitment (Table 3). (Vroom & Yetton 1973; Vroom 2002)

Decision Style	Description
Autocracy 1	Leader makes the decision on his/her own, with his/her own information. Minimal output of other members
Autocracy 2	Before making the decision leader obtains information from subordinates and constructing the answer alone, but using this information if necessary.
Consultative 1	Leaders shares the decision with relevant people, which give their opinion of the situation, the final decision may include their opinion.
Consultative 2	Leader shares the decision to the group, opinions are given, but the leader finally makes the decision alone.
Group 2	Leader shares the decision with the group. Together the group will attempt to create a consensus, which the leader accepts and then its implemented

Table 3 Five decision making styles from Vroom & Yetton's research. Adopted from (Vroom & Yetton, 1973)

The first question is about the nature of the decision and its quality itself. Is it crucial, complex and is its quality highly important (Table 4). Figure 3 shows, that if this is required the decision is almost certainly done by collaboration, decision styles: Consultative 1, Consultative 2 and Group 2. Since this thesis focuses on strategy and

tactical decisions, this supports well the collaboration and social context of the requirements of these decisions. Latest the question four cuts the autocracy model out. Since as previously discussed in the review, also more recent studies support the model that engaging users in decision phase activates them in the implementation. (Vroom & Yetton 1973; Vroom, 2002; Nutt & Wilson 2010; Vermeulen & Curseu, 2008:34).

1. Is there a quality requirement? Is the nature of the solution critical? Is the decision complex?
2. Do I have sufficient information to produce high quality outcome?
3. Is the problem structured? Are the alternative methods?
4. Is acceptance of the decision by subordinates critical to its implementation?
5. If I were to make the decision by myself, is it reasonably certain that it would be accepted by my subordinates?
6. Do subordinates share the organizational goals to be obtained in solving this problem?
7. Is conflict among subordinates likely in obtaining the preferred solution?

Table 4 The seven questions to map the best decision-making style. Adopted from (Vroom & Yetton, 1973)

The contingency framework also emphasizes the need to connect the rational theory with political theory, since this suggested that for high quality decision group communication and work is needed. This thesis hypothesis focus on how these connections are done and how do it actually happen in real life conditions, with statistical analysis on empiric data.

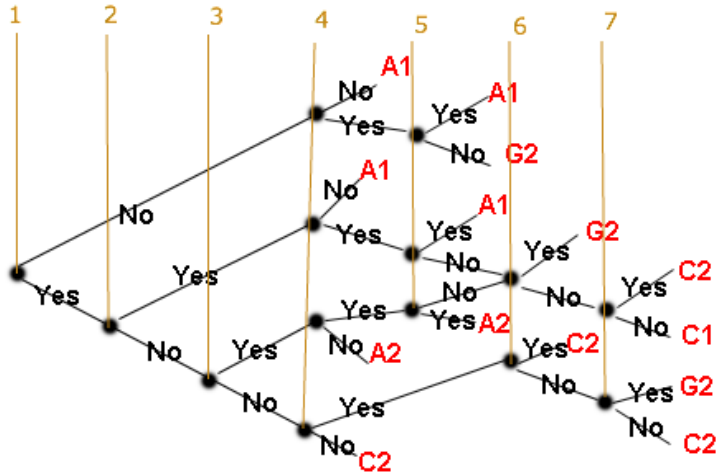

Figure 3. How to choose the best decision-making style. How the answers to questions (Table 4), effect which style to choose (table 3). Adopted from (Vroom & Yetton, 1973). (Yellow numbers indicate the question number)

This contingency theory suggests that grouping of individuals affects the quality of decision. Other researchers have backed it up, since it increases the creativity, total amount of knowledge and the implementation of decision (Swan et al 2004). One extra aspect is that studies have pointed out it helps with the abundance of information. Since the best way to filter relevant information from irrelevant is the expertise of individuals (Woods et al 2002:25). When the decision gets complex, several of experts is required to work together (Swan et al 2004), but this leads easily to leadership challenges (Williams 2001). This brings us back to the importance of engagement not only for the implementation, but because of commitment, because human commitment follows its actions and not our decision-making (Jacques 2008:144; Salancik 177:26). This is specially emphasized in social context were trust is needed to create engagement and commitment (Williams 2001).

3.8 Implementation of decisions

Innovation and creativity is one of the important things that collaboration raises, but other one is the implementation of the decisions how is this done without the role of authority? How is the engagement and commitment set towards implementation, without hierarchy, also because the commitment comes from the action itself (Jacques 2008:144).

There is a great discrepancy between the researchers and the business in one particular part of decision-making; most decisions research focus on the data gathering or deciding phases of the decision and neglect the implementation. However, the business focuses on measuring the implementation of the decisions. For example implementation wasn't part of Simon's original model of rational decision-making. But the implementation is very intertwined to decision-making and it has its own pitfalls. First one is the resist of implementing the decision, especially decision with large impact in the organization (Child, Elbanna & Rodrigues, 2008:106). Second, especially in the modern fast pace environment the time that it takes implementing of the decision and thirdly getting the management abroad, since they have large influence (Noordenhaven 1995, Vermeulen & Curseu 2008:34-35).

These problems lay once again in the politics and one great way to get stakeholders to implement is to add them in to the decision-making process early enough, so they feel engaged (Nutt & Wilson2010; Vermeulen & Curseu 2008:34). Vice versa in smaller

companies, were politics isn't as large obstacle problem isn't connecting the initial decision to the implementation, but that the implementation and decisions are done concurringly; decision and implementation are done without planning ahead (Levander & Raccuia 2001). Olson and Bokor (1995) study on entrepreneurial decision-making concluded that half of the start-ups didn't develop planning. In simple start-up organizations don't have the time to create rational decision, but rely on opportunistic ideas (Busenitz & Barney 1997). This behavior can backfire when the decisions and their consequences complexity raises (Levander & Raccuia 2001). This is why this thesis takes in account the implementation part of the decision-making process, which is so often neglected as a part of the process, but has high influence to the end result. One great problem with implementation is the communication. Being either the communicating problems of larger organizations or the time strains of larger organizations digitalization has been seen as an answer to both of these issues. Next chapter is about how digitalization relives or tries to relive these pains.

3.9 Digitalization of Business Environment

When I realized that I countered the digitalization in each of the other chapters of literature review I realized it has a large part in communication, since it changes the medium which we use to communicate, that brings variety of factors that influence the study I decided to add a chapter of itself, although it is not main focus of my study, but as my data is collected behavior from and digital environment, it should be taken account and its effects should be highlighted in the study.

Tasks in modern work life can require enormous capabilities not from individual, but from the team as whole (Grant and Hofmann 2011). To achieve these goal balances teamwork, which requires teamwork with dynamic communication and clear roles to work (Bart and Carroll 2001;Belanger and Watson-Manheim 2006). Combining the modern work life's complex problems, with the ongoing mega-trend transforming modern work from production based to knowledge/service oriented work with the more global environment (Townsend et al 1998).

Virtual work and teams has spread to organization and there is evidence in their success although there are numerous problems recognized in them, but with IT and telecommunications solutions and tasks can be completed with better success (Malhotra, Majchrzak & Rosen 2007). One of the best benefits of the virtual teams is

that it takes away many of the restrictions of whom to use in the projects and organization can include the most prominent experts of the subject (Hunsaker, P. & Hunsaker, J. 2008: 87-88).

Multidisciplinary decision-making that was discussed in the last chapter is also an area. Data pooling was discussed as a great way to share information around different disciplinarians. IT support between different disciplinarians of experts has been studied specially in medicine and clinical environment, since a lot of knowledge and comments is needed quickly from various expertise and sometimes this needs to be acquired fast for the decision (Lanceley et al 2008). IT helps the sharing this pooled information and help the process of communicating this to the right persons and for example electronic patient registers are seen to support decision-making in several ways (Zigurs & Buckland 1998; Berg 2003; Geissbuhler & Miller 2000). Three main benefits from a system is that first the information gather for the particular project is stored and help the project itself, also this information is gathered from various sources at once, second these information coordinate the work towards the individuals who need to operate with it and to the problems that need addressing, third the computing power can arrange and organize the already archived information, that can used in upcoming decisions (Berg 2003). Digitalization's positive effects and potential in multidisciplinary communication is also noticed in business world, engaging users with other functions, for example modern CRM systems combines users from marketing, sales and service (Lipiäinen 2015; Beirne & Cromack 2009).

Third aspect in digitalization is the creation of virtual environments. Usually the first though about them is 3D environments, but these can be seen as digital social places for example chat rooms in organizations environment. Research has seen these virtual environments especially useful for learning and development purposes (Koles & Nagy 2014). A meta-research on virtual environment found that it helps with experiential learning, collaboration with communications, simulations (Hew and Cheung 2010). Virtual environment are seen as cost-efficient, innovative and compelling alternatives for real-life knowledge sharing offering productivity and flexibility compared to real-life settings (Jang and Ryu 2011; Greenfield and Davis 2002).

Digitalization offers many great benefits on various levels and almost every organization has adopted IT system in different forms and functions. With the enormous potential IT system offer, they still tend to fail, especially when it is supposed to cover the whole organization or large parts of it. Harvard Business Review studied 1,471

enterprises IT projects and not did they only fail often, but the consequences could be sewer (Flyvbjerg & Budzier 2011).

Reasons for this vary, but concentrating on ones that effect decision-making. Abundance of information is one obstacle and also that the information is difficult to digest; For example on a research on stock exchange traders, who have to make decisions quickly, complexity of the news that was delivered to them correlated with bad decisions (Liu, Govindan & Uzzi 2015). Also the human behavior, that was discussed in previous chapter, how people from different groups or functions is a leadership challenge with increased amount of conflict and decreasing social integration, hence the great potential of multidiscipline knowledge-sharing hasn't fulfilled its potential (Williams 2001; Mannix & Neale 2005). Decision-making and communication sharing should also be considered already in the implementation stage of the project, since this is the modern knowledge workers production (Crossan et al 2005). Another Harvard Business Review wrote, "An enterprise system imposes its own logic on a company's strategy, culture, and organization." (Davenport 1998), meaning that when a larger system is integrated, also the organization itself has to evolve to implement the change. For an organization to turn for example for more decision making oriented, the culture has to change and new software itself doesn't do the transformation itself. In the end the IT tools performance to support decision-making relies on how it is practically used by the users (Crossan et al 2005).

Low engagement is one of the major for the failing f IT services and adoption process and there is few root problems. Even if in theory digital systems helps us to communicate, they still usually mimic only the verbal communication, still most of our communication is done by non-verbal ways. Especially feelings and emotions are expressed by non-verbal ways (Ekman et al. 1980). Already in 1872 Charles Darwin highlighted the importance of expression in our communication (Darwin 1872; 44). Perfect example of this is a study made in 2003 about knowledge workers email behavior, the findings were that the persons themselves didn't need training on detecting feelings in emails, but their colleagues needed it (Dawley & Anthony 2003), meaning that we are not able to receive and diagnose the communication without the showing of emotions.

Digitalization has surged the amount of data we have available, it have even helped to sort and analyze it, but with IT systems as communication medium has decreased our ability emphasizing what is really important to us and what we expect from the others,

by the form of decrease expressions, emotions and the deeper connection we have with others that is sprung from these. Once again reflecting that to Bounder Rationality the overwhelming information abundance is the problem and when the clues we receive from emotions are disappearing we are trapped with even more data to go through.

3.10 Background of the empiric data: FINGERTIP

Help to understand about the environment and concept the data for this research is done here is a small review of the product in technical and conceptual sense:

In technical terms Fingertip is a cloud-based application, which runs on Salesforce CRM platform. It is a hybrid of traditional programs such as Customer Relationship Management (CRM), Management Control network, project management software and intranet. How it differs from other software is its holistic focus on decision-making. Meaning it doesn't treat decision as a separate part of a process, for example from execution or elevation, but the whole process is done under the same object "Decision". This model fits well in line with Mintzberg et al. pioneering study about Decision-Making processes, where they framed seven different decision-making process that start from the revelation of the stimulus to the committed execution (Mintzberg et al. 1976: 246). In Fingertip the Decisions is opened to Seven phases: 1) Draft 2) Share 3) Propose 4) Decide 5) Execute 6) Evaluate 7) Close. (Figure 4).

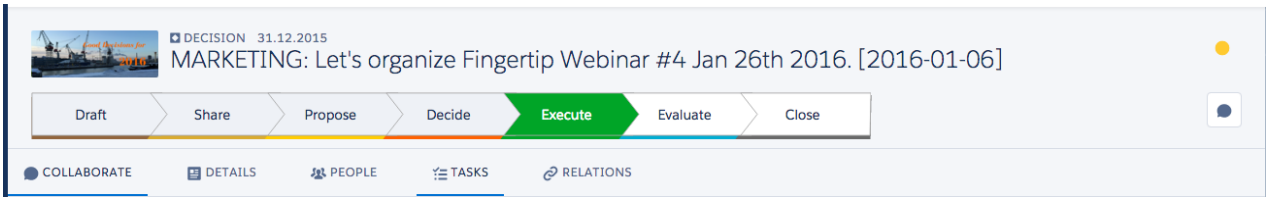

Figure 4. How the decisions phases are shown in the system. This current decision is in the execution phase.

In short: Draft is the start phase that can be a problem or opportunity that has arose or identified and recorded it to the system, in this phase only the user accountable of the decision sees it. On share phase the accountable shares the decision to other users, whom he or she feels relevant to the decisions. On propose phase a solution has been raised and relevant people can offer their stance if they are for or against it (Figure 7). Decide phase is about give the final go for the proposition, if the decision will be executed, modified or cancelled, it varies for the organizations decision-making style how they choose to go forward, the votes can be counted, or the accountable will make

the ultimate selection based on facts, support or whatever the criteria are. Execute phase is all about implementing the decision. Next step is to evaluate the decision in Evaluation phase; users give their view of their own effort and outcome of the decisions. Finally the decision is closed, when it is archived for later view, use or for example copying it for new decision.

To fit this with Simon's model of problem solving: The draft phase would be when the reality of the situation as a trigger pulls an idea or problem, that a user's turns into draft of a decision. Share Phase would hold the original Simon's model of decision making: "Intelligence", "Design" and "Choice" Phase. Since it is the phase where the most information is gathered, discussion is raised of the topic and the alternatives are developed. The most decisions in the organization are in this phase and a lot of decisions also end here. "Propose" and "Decide" phases are set at the end of the "Choice "Phase of Simon's model, since if the conversation and knowledge share has been good and a decision is reached already in the share phase, these two steps can be over fast. Otherwise new proposes and issues can be raised here and it takes a longer time. "Execution"phase in Fingertip is similar to Implementation Phase in Simon's model. Also "Evaluate" phase in Fingertip is similar to the Simon's models "Review". In "Close" phase the decision is made inactive and turned to archive, it relates on the Simon's model when the decision comes status quo, part of the reality of the moment (Simon 1960, Newell 1972; Figure 4, Figure 5).

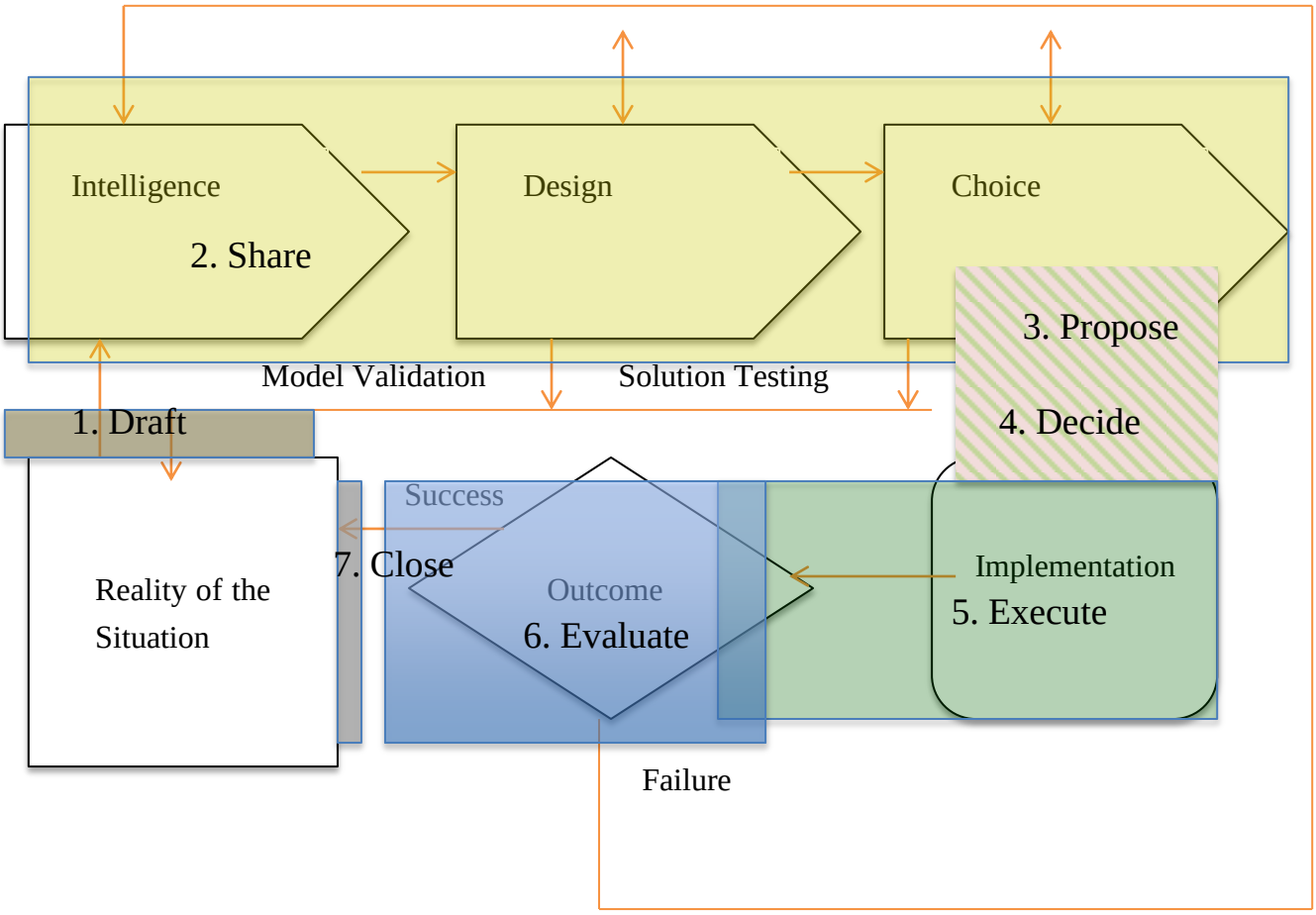

Figure 5. How Fingertip's decision process compares to Simon's Decision-making framework

There are four common ways to interact with the decisions commenting, tasks, stance approvals, and filling preset metrics. Each decision has a feed for information and knowledge gathering, where users can comment the decisions, share your thoughts, information, motions or basically anything in a basic text box comment or it is possible to upload files, add links and questions to the feed on comment box.

Tasks can be created with task object, to individual users related to the decisions; simple things such as deadlines, complexity, and skill level can be added to the tasks. These can be added in any phase of the decisions, so the tasks can be part of for example information gathering or execution (Figure 6). Figure 6 shows how the transparency is implemented, everyone in the decision sees all the tasks that are assigned and the status they are in, also the due date is revealed if it has been set. This is also shown in Figure 7, everyone's stance and opinion of the decision is reveled to everyone to increase transparency and reduce politics (Pellosniemi 2015: 76).

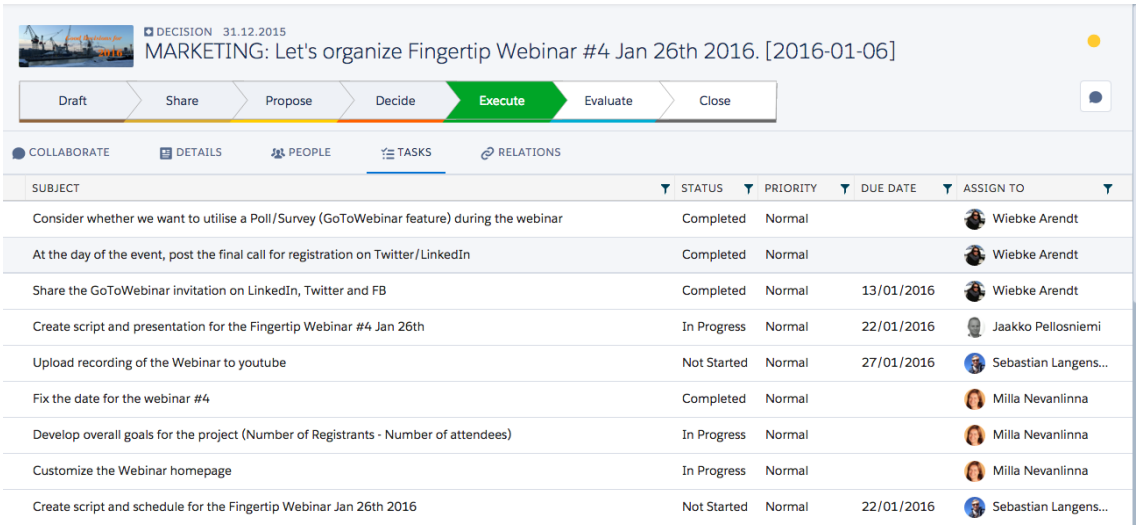

Figure 6. This is the transparent view of tasks under a decision.

One important way to engage is giving stances and approvals showing are users against or for the decisions, as the Fingertip system is promoting transparency everyone's stance is shown for everyone in the decision, also comment can be written with these stances how the persons views or feels the situation and why did he give that stance or approval (Figure 7). Fingertip regards transparency as one of the most important aspects of the social decision-making, this is why program is set to promote it, since lack of transparency is seen as a problem in flat hierarchy organizations (Pellosniemi 2015: 76;Hendricks 2005). These three engagement types are rather similar to our face-to-face communication and engagement, making tasks, social interaction and exercise authority and feelings, by assigning task to others, giving stance and approvals.

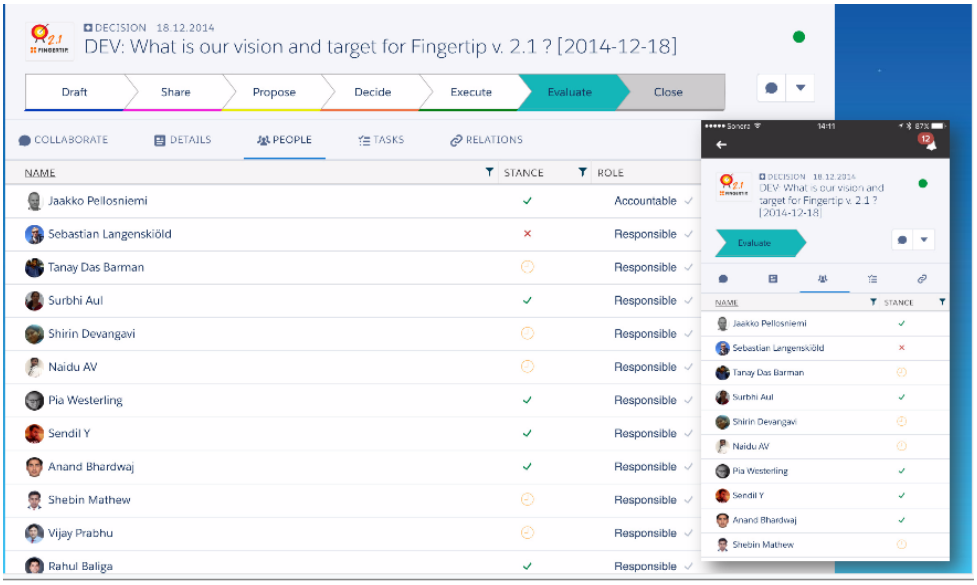

Figure 7. Stances given in decision. Both on desktop and mobile version.

Fourth way to engage is more virtual and measurable type, by giving mood, evaluation, relevancy, or other information that is more easier to quantify and qualify the decision or phase of it: Why type of decisions is it? Micro, operational, tactical or Strategic. What is the priority? High, normal, low. These are either drop box type of information with ready-made answers or Likert scale from 1-5. Enabling users to see quickly what other users feel and think about the decision. This could be described as metadata for the decision.

RACI model

Responsibilities and accountability are essential part of organizational structure and they order the organization's behavior and organizational structure should be encourage efficiency in decision-making (Sine, Mitsuhashi & Kirsch 2006). Traditionally titles and job functions gives or pushes an individual the role, accountability and benefits, but in modern more flat and free or even holacracy organizations the roles can be more ambiguous. As an organization Fingertip has a flat organization structure and the responsibility and accountability is tied to each decision, the saying in the company is that "Each person is the CEO of their decisions", but one main problem with flat organizations is that it doesn't set accountability and doesn't encourage transparency (Hendricks 2005). To counter this Fingertip has set one accountable for each decision to oversee its progress (Pellosniemi 2015:51).

In Fingertip this is addressed with the digital documentation of all the action related to the decision. The concept is called RACI model with four levels of responsibilities. Accountable is the highest level, this person is the accountable or "the CEO" of the decisions, to make it clear there can be only one accountable, other roles don't have any limitations, but this role can be changed during different phases of decisions. Accountable has all the rights included moving the decision forward to next phases, commenting, add people, making tasks, giving stance and approval. Responsible is the second highest, it has all the same abilities as accountable, but he cannot move decision forward, responsible ones are the "workhorses" of the decisions and their job is to push the decision forward and contribute to it actively. Consulted is the next role, they can write comments, give stance, but cannot add new people. Informed are people who can view the decision, but cannot interact with the decision anyway, they also don't see these decisions in their main view, but have to search them separately. All of the users that are in a decision and their roles can be seen on the person page, if user doesn't have any role he is unable to see the decisions, it is also possible to create groups of users and

add them to specific role on a decision (Figure 7).

Fingertip has also tried to embed the emotions to their decisions, it is quite simplified versions and users can't expressed a single desired emotion, but from a Likert Scale type of selection, where 1 is Angry, 2 Sad, 3 Neutral, 4 Happy, 5 Very happy, to reflect their current mood of the decision. It is important to notice that this is the current mood and only to particular decisions. Although it doesn't reflect the whole variety of human cognitive emotions, it offers a way to reflect the current mood and users are also able to see the timeline of moods in a decision, where they see their own moods and also the average mood of the decision. Figure 8 shows the two lines orange and green. Green is individual personal moods reported in the decision and the orange is the average mood of users in the decision, also in the top right corner you can see the command center where the mood and other qualitative metrics can be given in a decision.

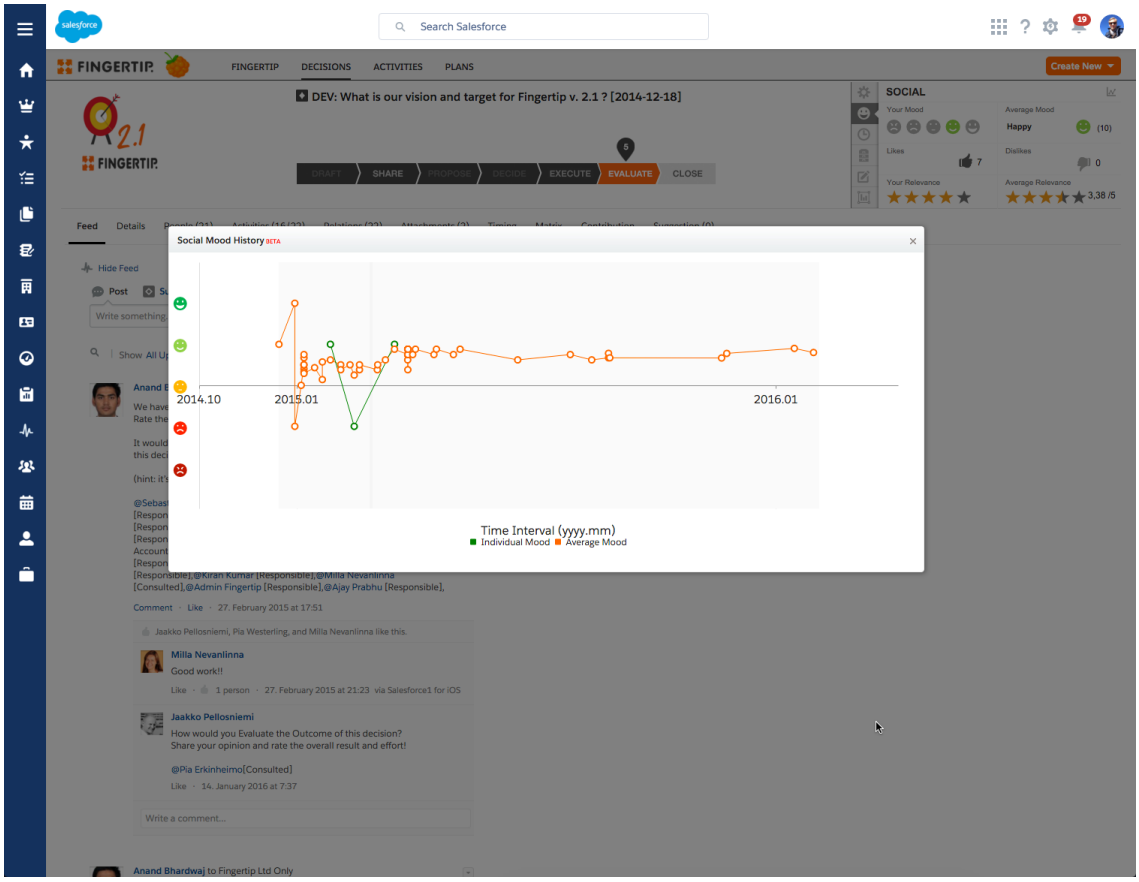

Figure 8 Mood history of a decision.

This thesis focuses on mostly on the activities, such as tasks done, comments given and stances given in decisions. But basically Fingertip measures and tries to capture various

side of decision making and make this transparent. The Fingertip concept and software focus around decision, which makes it a feasible platform for this study. During 2014-2015 821 decisions (Figure 9) was recorded in the software. It would be interesting to

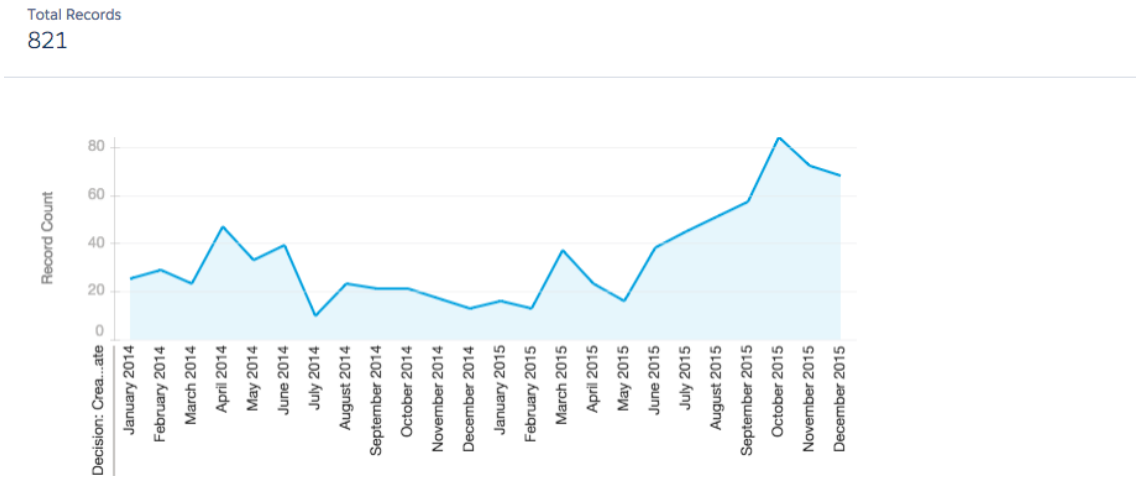

Figure 9 821 Decisions were recorded in Fingertip organization during 2014-2015.

observe the data of all of them, as an experiment of human behavior, but to keep the study focus on the business side I chose only to include business critical decision. I filtered this by only taking decisions with classification of "tactical" or "strategic" (Figure 10). Since these are also the most critical decision for business, but also often highly political (Child et al 2008: 105). Although studying behavior in all decisions could be interesting from the point of view of behavioral science.

During 2015, 35 individuals made decisions and interact in them. Also, the sample is heterogeneous culturally; there are seven nationalities included in this 35: Finnish, French, German, British, Irish, Indian and Bangladeshi. Also the individuals are in various positions, education, functions and work cultures, since the group includes summer trainees, board members, coders, marketing, human resources and sales, also people who don't work anymore at the organization. For the size of the organization it represents a large variety of individuals with different backgrounds.

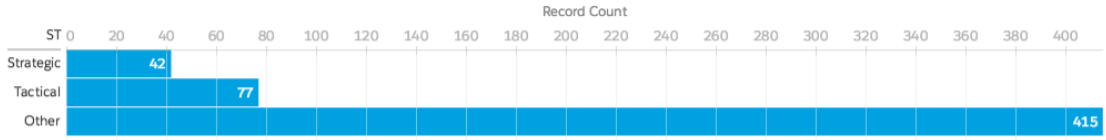

Figure 10. 42 strategic decisions and 77 tactical decision was recorded during 2015. 415 decision were unclassified or operational level decisions.

Although the small sample of individuals, this data gives a large sample of behavior and also the individuals represents a heterogeneous group, because of various demographic and social backgrounds. Also the company culture and the software offer good setup to study data of behavior in decision-making, since it focuses on transparency, collaboration, measures various activities and focus on the decision-making process. The low hierarchy model and virtual environment gives it also a modern view, since for example virtual environment is seen to decrease collaboration (Straus 1997).

4 Research Questions

The aim of the study is to view individuals' part in collaboration decision-making. How his or her given, perceived or self-created position or status affects his or her participants, perception, engagement emotionally and mechanically in the whole process from creation to execution. Founding out how the motivation and engagement varies, by studying individuals' behavior in different positions in various decisions.

Engagement, influence and cohesiveness are all important parts of collaboration and decision-making (Nijstad 2009), but research has shown that for example cohesiveness is lowered when groups work in virtual teams (Straus 1997). Thus, for the performance it is crucial, that the engagement is high and communication is viral, since individuals don't usually share as much information as expected lowering the quality of decision-making (Van Ginkel & Van Knippenberd 2007: 82).

The leadership research has not kept up with the raise of team-based decision making and work in organization (Van Ginkel & Van Knippenberd 2011: 94). Although leadership and influence can be viewed as a characteristic, for example talkative persons often gather more influence. This won't focus on individual's characteristics but how their own engagement changes, when they are given different status and responsibility in a decision. The focus is on how to ensure the engagement and commitment, which are recognized to be two important factors for individual's contribution to decision, whether not looking at ones qualitative or characteristics. In traditional organizations ones commitment and actions were enforced with his role in hierarchy. In traditional organizations the "who controls" the decision is seen as more important than "what is accomplished", this kind of attraction to power behavior in decision-making, destroys the trust and collaboration inside the decision (Simon 1997, 2007). In modern more flat and agile organizations the old roles based authorization and commitments are not as fortified, but the commitment is more often expected to come from social aspects. These social and friendly environment mantras are heavily used by modern organizations marketing and recruitment, and also in business consultant's sales pitches, but hardly tested by empiric data and research shows that the lack of hierarchy reduces the accountability (Hendricks 2005).

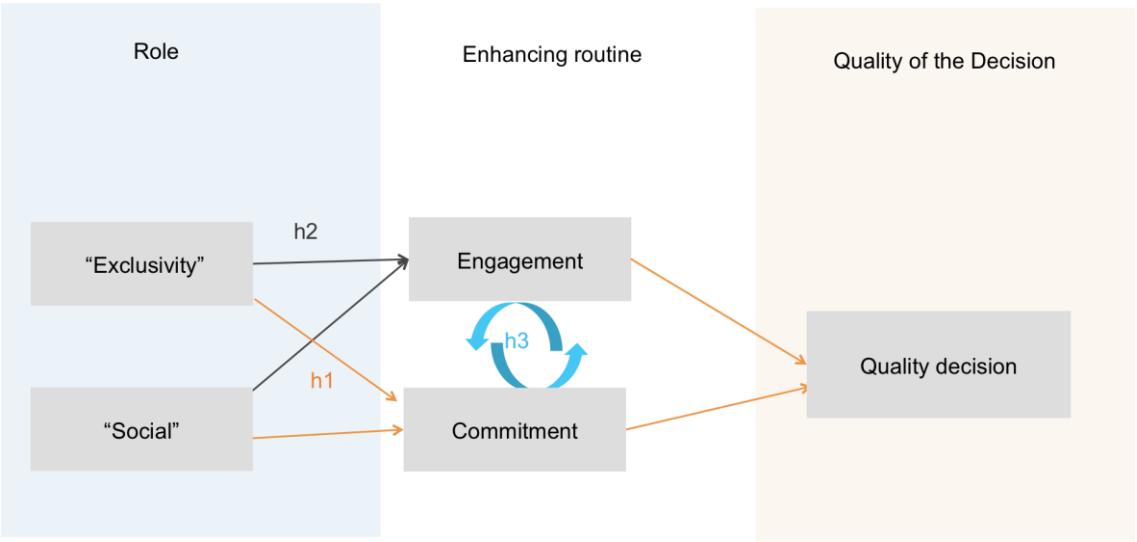

Figure 11. How the roles affect the routines.

One of the negative consequences of political thinking and behavior is that individuals focus on their own activities, interest and goals (Child et al 2008:106). Since the politics is related to power and hierarchy (Child et al 2008, 108-109; Mintzberg & Waters 1985), the first research question focus on how does this political theory work when the power distance and hierarchy is minimal and the pressure comes from horizontal than vertical, since the current research points out that on low power level collaboration should be more easy to achieve (George et al 2008: 372).

RQ1. In low hierarchy environment: Are users committed more to their own causes than to the activities set by others?

Responsibility is strongly linked to decision-making and decision makers (Vidaillet, 2008:422), but this responsibility is mostly seen as coming from an external source, how people outside the situation view the responsibility of the decision, retrospectively searching for blame or honor for the decision (Gephart 1993). Contradict to this research in behavioral science shows that on individual level commitment to decision doesn't come from the decision itself, but from the individual's action for it (Rojot 2008:144; Salancik 1977:26). Hence the second research question focus on how is engagement coming from the structure or one's own actions.

RQ2. Do the social factors affect the engagement of the decisions more than the

role?

One approach in the literature review part was the widening of the word politics, not only to associate it with negative, but view it as socio-political process, meaning it its looks the process from human interactions (Royer & Langley 2008: 250). The engagement and commitment were found crucially important for the quality of decisions (Nijstad 2009; Child et al 2008:110) and they also intervened with each other (Rojot 2008:144). So the third research questions looks could these two factors empower each other in the decision-making process.

RQ3. Does the general engagement in the decision, enhance users' commitment to the decision?

If a less power and hierarchy environment would lower the negative side of politics; one's focus on own activities: the activities done for others and how well they are done should have better quality than on activities on own projects. The first hypothesis test this by comparing how tasks are done in decisions were the task does is not the accountable, compared how tasks are done in decisions were the doer is accountable in the Fingertip software. This is important since the organizational structures main ideas are to support the efficiency of decision-making through roles (Sine, Mitsuhashi & Kirsch 2006). Traditionally it has meant the role in the organization, in here the role is rather the role in the decision or project.

Research Hypothesis 1: With lower hierarchy the social factors should affect more on the commitment to the decisions, than role.

If the behavioral scientists are right and individuals are commitment to the actions not the decisions (Rojot 2008:144). Individuals with roles that require activity should be more committed compared to ones with a role were they are just approving or rejecting the decisions. The RACI model separates "Responsible" who are the workhorses in the decision, whom have activities to execute and "Consulted" role, which requires only comments and approvals.

Research Hypothesis 2: With lower hierarchy the social factors should affect more on the engagement to the decisions, than role.

If the actions generate more commitment (Rojot 2008:144), does this engagement need

to be from the person itself? Or would the engagement in the group itself create more action and commitment from the individuals. The last hypothesis measures if the number of comments in the decisions affect the rating that approvals are given in the decisions. So if people interact inside a decision the hypothesis would show that in these decisions the approvals would also being given.

Research Hypothesis 3: Increasing engagement should enforce the commitment and vice versa improving the quality of the decision at the end.

Figure 11 represent a picture of the relationships this thesis focus on. As prior research has suggested engagement and commitment of individuals pushes the decision towards the rationality and to better outcome, also the engagement and commitment can be seen as the few positive sides of politics increasing the likelihood of successful implementation of the decision.

5 Research Methodology

In following Chapters I will go through the methods, technics, analytics and data, which will be used to observe and find the relationship between individuals' roles and their performance and engagement in decisions and in different phase of decisions. This research is done by longitudinal quantitative analysis of 129 decisions and roles, engagement and individual relationships inside each of these decisions. Aim is to find causalities and positive or negative relationships between individuals roles, individual activity and their effect on individuals' commitment and engagement with the decisions.

Aim is to reveal valid and reliable information about how different roles and responsibilities a person has affects the commitment, engagement and emotions they have in deciding and implementing decisions. Also, how the general engagement and activity inside the decision affects individuals commitment to it.

This perspective to research was selected because of my personal interest in decision-making, its impact and usability in business or even in behavioral science and also it is quite unorthodox method in research sense. With this statistical method using primary data of user behavior in the system, I try to eliminate the very bias, which is written about earlier in this study. As research shows people are unable to detect their bias in decision-making and cannot make rational decision. How can they answer questionnaires or analyze their own decision-making rationally.

5.1 Research Design

A scientific method, that positivism paradigm is sometimes described as an objective, rationalistic and empiric view of the subject (Mertens 2005: 8). This thesis tries to follows this kind of objective and rationalistic view and I chose this because of the biased setting of the topic itself, which is explained in literature review chapter. Since human's decision-making process is influenced by various external factors and internal biases' that can be hard to detect even for professionals. As positivism paradigm views the world in an objective ultimatum and this is impossible to achieve, since even if the data could be neutral, selecting and producing is always done by the view of the person in charge. Thus, even I try to be as rationalistic and objective with my choice of data

and research methods, that I base on statistical analysis on retrospective data on human behavior rather than asking persons about their view of the past situations, my own choices such as limitation and scope of the research and data; What to include? What to exclude? Are influenced by my own bias and interest that I cannot conclude this research to be fully on positive paradigm.

I would describe this research's paradigm to be post-positivism. This view evolved from positivism, highlighting its objective ontological assumption that reality exists as an independently, but when I as a researcher take this data I inflict it with my own subjectivisms with my own choices; it combines the quantitative and statistical objectiveness, with the possibility of subjective perception that should be taken in account in human behavior and specially in decision-making which relates to cognitive. Even as post-positivism accept that there is no absolute objectivism, the goal is to understand reality with objectivity, by recognizing the bias with strict data analyze and collection (Erikson & Kovalainen 2008; Robinson 2002).

Generating generalizable findings from a sample and data are they key aspects of post-positivism. Combining unbiased and coherent measurement and theory, developing reliability and validity needed (Malhotra, Birks & Wills 2012: 196). Empiricism epistemology is associated with positivism & post-positivism paradigm, which constitutes reliability and validity from observation of natural and real objects (Erikson & Kovalainen 2008). Hence, an objective view can be pursued for the study with quantitative and statistical data offering reliability and validity to the study.

I share myself the view of the philosopher David Hume, that causality is not an object or outcome itself, but it is a way for us humans to observe and categorize the world around them and social science can only "probe not prove the causal hypothesis" (Campbell & Stanley 1963). Still most social science is done by probabilistic view of causation (Cook & Campbell 1975:15). Two main reasons for this are that social situations are affected of several of variables and finding a rule, which essentialist view requires explaining the situation is nearly impossible (Cook & Campbell 1975:15). Also these phenomena's cannot be isolated to be observed individually, as essentialist view requires (Bhaskar 1975), but even if the phenomena's relationships can't be proven empirically, these causalities based on variances are seen as useful tools in science (Blalock 1969:6). Hence, even I know I cannot prove the relationships I found ultimately, but merely observe them. I'm sure that this different view of testing decision-making process related variables with actual behavior data is helpful to push

the research further. Especially since during time the means and understanding of the subject expands. In this thesis the relations between variables will be tested by variances analysis, for example T-test and Levene's Test, which test them possibility of randomness between variables of the sample (Fadem 2008; Howard 1960).

5.2 Research Data

One of the most important choices considering the data is the choice between heterogeneous and homogenous sample. Four guidelines are offered when choosing the sample data, which makes the study interesting, reliable and do able. 1) Go to Extreme situations; choose cases that are unusual, important and/or visible. 2) Go to polar types; choose cases with various backgrounds, factors, processes. 3) Go for experienced levels of the phenomenal; choose cases that have expertise in the area. 4) Go for more informed cases, take cases you know you can get, so you don't find yourself without data (Pettigrew 1990: 275-277).

This Data is collected from a small Finnish startup company Fingertip that focuses on decision-making and in creating a decision-making application for other organizations. They have developed commercial software for decision-making and have holistic view on how to deploy the decision in a social way in the organization. This has been developed during the past four years. So the Pettigrew's rules one and three would be covered, since the organization is taking the decision-making with extreme holistic view and have the expertise on the subject. They use their own software in their decision making, with their holistic approach, they document all interaction: discussion, person's stance, emotions, effort, and evaluation of result and did individuals process their duties on time. Since decision-making studies are also usually conducted to larger organization and there is only few studies concerning startups decision-making (Vermeulen et al 2008:38). So this would also fit on Pettigrew's first guideline.

The organizations social and transparent structure is combined with open and transparent culture. Fingertip views itself as a laboratory for its own product and this thesis can be seen as prove of that since I am allowed to use all the decisions they have created in this thesis, so they revealed all their organizations information from the board level decisions to should we get a recycle bin to the office. Fingertip is also starting to reach the level of learning organization, which is done by evaluating and learning from

old decision. So it makes this data extremely interesting from research point of view, since the flat and transparent organization is one of the key points of recent debate in organization management studies.

Until now they have been missing business intelligence unit and this research is part of the action of creating a holistic measurement structure, process and culture to the organization. This is also a disclaimer, that for the organizations security I have to conceal some data, for example the name of individual decisions.

From past 2 years, 847 decisions were created with over 27,000 interactions. This data for the research is gathered from the Fingertips own software, from these decisions. During the past year 35 individuals have used this system in various roles, as employee, trainee, outsource personnel, board members or advisor. To reduce BIAS the data is taken out without modification raw, as it has been used in their everyday work. Hence, the data is primary data and it is taken straight for this research, without any body modifying it. Only action I have done to the data was the decision of including only decision that were classified as tactical or strategic, this decrease the number of decision to 127, but gives the study more relevance from the business point of view. Since these decision have more impact in the organization, are more complex and political (Child et al 2010:105-107).

Tactical and strategic decision are also regarded the primary value decisions the Fingertip program is focusing on and where it is creating value for themselves and customers. The research will focus on engagement in the decisions and how the roles effect this engagement and commitment, since engagement is identified as one of the main success factors in decisions. In this study the engagement is counted as various interactions with decisions: Comments given to decisions, tasks done in decisions, stances and approvals given on decisions and moods associated with the decisions. Different metrics is used to analyze how the roles affect the use of these interactions depending on the data available of each metric.

5.3 Validity and reliability of the data and research

Validity of quantitative research is set on three criteria: Measurement, generalization and variables. Since the data is primary data straight from measuring the retrospective behavior of the users, without anyone modifying it, it can be considered valid, since the

users own bias can't affect the research, which can happen in questionnaire and interviews. Because of the data quality, this research should be repeatable if other organizations have a measurement system of same kind. Since the tasks, decisions and other activities that are done are universal and with the data measurement system uniformed, this research can be generalized, even though it has its limitations being on a start-up and flat organization. On the other hand research is showing that more and more larger organization are enforced to move towards smaller company agile environment because of more dynamical environment (Kulkki 2002:501). Statistical analysis and measurement methods that are common in research are used to enforce the study's validity concerning the measurement.

Usually retrospective research is done with interviewing or by questionnaires. A problem with these specially in research that target cognitive and or behavioral subjects is that humans tend to defend their selves and their choices, also they tend to see their behavior as more rational than it was in reality, individuals tend to talk about their thoughts and actions closer to the ideal view than they have in reality intended (Argyris 1999). These bias answers irresistible affect the results, lowering the validity of the research, since the validity is measured how the research reflects the reality (Willnat & Manheim 2011: 105).

Currently there is a movement questioning the reliability of research. Various meta-studies and critical reviews have shown that repeatability of research is failing, because of data errors, bias of samples and also bias of the researchers', especially in subjects such as psychology (Nosek 2012; Open science collaboration 2015). This supports the post-positivism claims, that the bias of the researchers him- or herself makes the perfect objectivity a utopia. As the modern digital evolution offers us better ways to record, analyze and produce behavioral actions I wanted to experiment with this possibility in this thesis by using digitally recorded behavior and social actions as data and analyze statistic created from this data to provide more objective information. Hence, offering a direction to increase the reliability of the research. Of course this offered its difficulties, because of the lack of resources and that the data is gathered for business purpose rather than originally for this research, so I have had to limit my study by the data I have had available.

5.4 Statistical Analysis Methods

Since the analytic part is focusing on several different type of sample and variable types, using both categorical and continuous, various different statistical analysis methods are needed.

In the first hypothesis relationship between categorical and continues samples are analyzed. This is by testing the means and standard deviation by using Levene's Test to test the samples homogeneity and T-test to test their significance to support the T-test also ANOVA test is used to variance between the means (Fadem 2008; Howard 1960).

The second hypothesis contains categorical samples. Hence, Pearson's chi-square test is used to observe if differences rise between categorical samples and do the statistic support that these differences come by chance or systematically. Other test that is used to analyze two binary samples is Phi coefficient test to study the significance of the relationship.

Third hypothesis contains continuous samples; Pearson's correlation test is used to observe the significance between the relationships and in the case of highly distributed data range Spearman's rho.

6 Findings

6.1 Accountability in decision, how it effects commitment in decisions?

One neglected area in decision-making research is the implementation as a part of the project or process (Nutt & Wilson 2010:80). Traditionally, decision-making research focus on decision-making as an own separate process or an outcome of the decision-making. If you look at the decision-making holistically, it has to be viewed as a start or a part of the process itself. Good execution can save a bad quality decision from turning worse, but good decision is useless without proper execution. This is why in this paper I include the execution of the tasks related to the decision to my research, being either part of the decision-making phase or the execution of the decision.

Modern digital technology should enable dynamic project and teamwork that could be done remotely even from different countries and time-zone. Reality in modern business world is that these systems lower the engagement, commitment and participation, which is also seen in the research of the field. The systems are not able to simulate or replace a real life face-to-face contact. This is why the study's one focus is on the accountability aspect of the decision-making. Accountability can be found in roles and hierarchy in traditional organization settings, but also individuals look leadership and responsibility in persons who have advocated action and created the decision (Hodgkinson & Starbuck 2008: 12). The following data shows how this accountability of owning a decision affects the execution of the tasks and action, that are necessary for the decision, either in decision-making process or the execution.

Research has also social factors such as affect and feelings also effect the engagement and commitment (Daniels, 2008 238;Harkness, Long & Bermbach 2005). But this kind of relationship is hard to be drawn in research since it requires retrospective analyze and memorize of the individuals about their actions, emotions and other factors (Dewe & Cooper 2007). Hence, research has come up with mixed results, because of these various factors that are self-reported and retrospective (Todd, et al 2004). Research based on daily diaries of employees has concluded that collaboration and support from colleagues have enforced their performance of daily activities and decreasing performance from control (Daniel & Harris 2005). The findings chapter focuses on could these social factors affect more on the commitment and engagement of decisions

compared to the role.

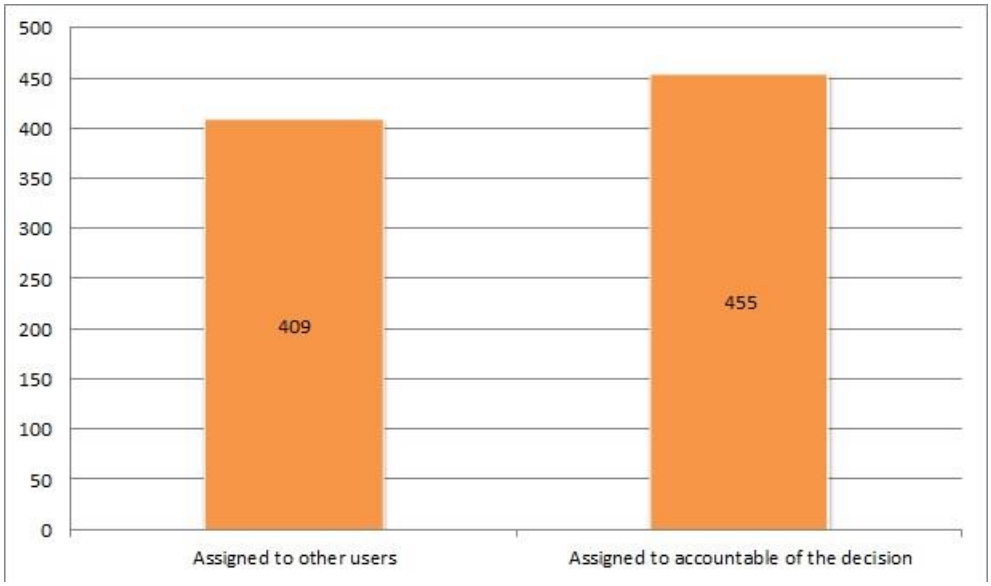

Chart 1. Tasks assigned to individuals,

In the year 2015, Fingertip Ltd. the company in the study recorded 864 task and actions related to strategic and tactical decisions they made. They 119 strategic and tactical decision in total so in general there was approximately 7,2 task per decisions, but ……. Of these 864 task's 517 were recorded as fully completed, which rounds to 59,83 % of the total tasks. Interestingly 409 of the tasks were assigned to the user who was accountable of the decision and 455 was assigned to users in other roles in the decisions (Chart 1.). From the entire tasks 47,3 % were assigned to the accountable of the decisions and 52,7% was assigned to persons in other roles.

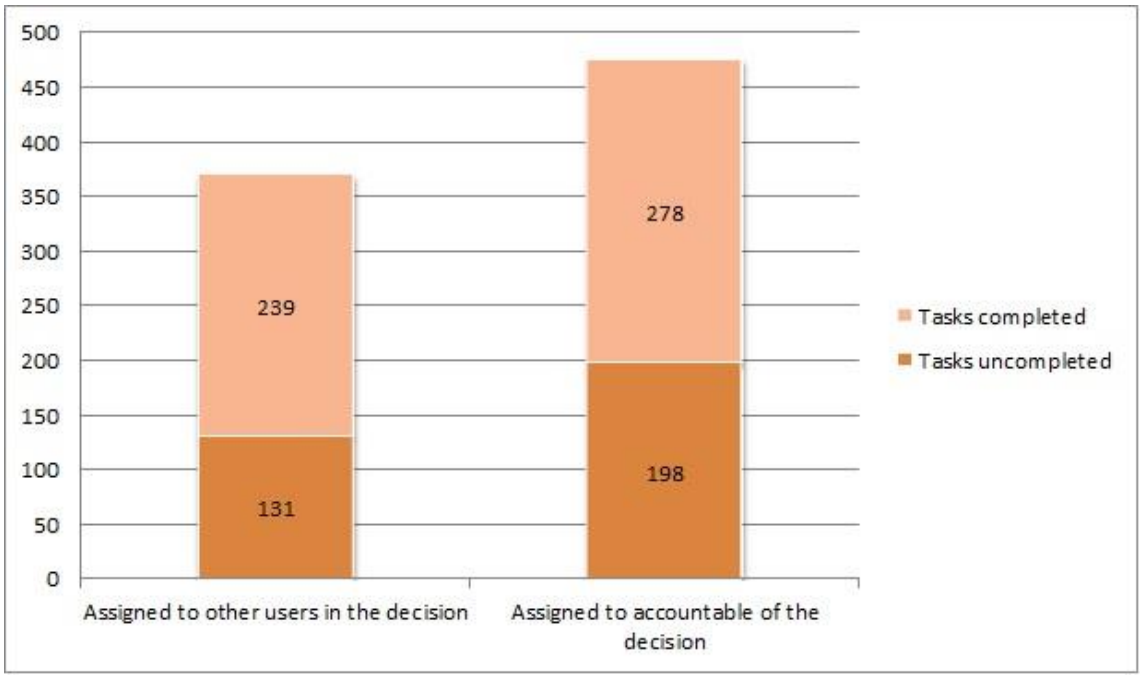

Chart 2. Amount of tasks completed.

If we look at the tasks other users have completed in the decisions. The amount of tasks assigned was 409 and 239 of them were completed. So the completing ration is approximately 58,44 % (Chart 2). There were tasks assigned to accountable of the decision was 455 in total. The completing ration was approximately 61,1 %. Hence, when looking at the percent's only, surprisingly the commitment levels didn't different significantly between accountable and users in other roles. The fact that almost half tasks (47 %) in general was assigned to the accountable person (chart 1) could imply, that users tend to think that the task would be completed more surely, but in general the tasks were completed with the same ration regardless of the users role.

It is also possible to give due dates for the tasks and usually the tasks were given one, since it is believed that the deadlines boost the chance of finishing the task. This is why most of the task had being assigned one. There were 241 tasks without due date and from these only 82 were completed, so only approximately 33,61 % task without due dates were completed. Compared to task with due dates, which was 623 in total and which 435 were completed, so with tasks that had due date approximately 69,82 % was completed (Chart 3).

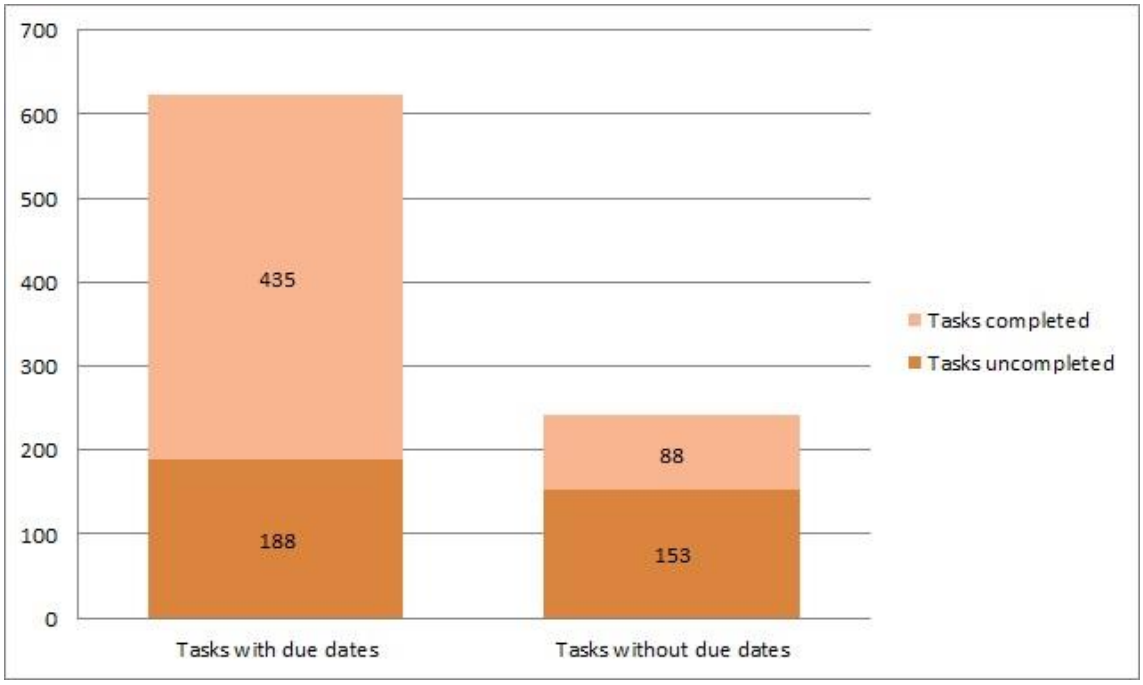

Chart 3. Tasks with or without due dates.

When comparing these to populations (Chart 3), the difference is significant and gives more evidence on the importance of the due dates. Since the due dates influence is large, the study will focus on the tasks with the due dates next, scaling the difference between users keeping up with the due dates, depending on their role.

In the data sample of tasks done with due date (n=479), there were 215 tasks that was finished during the due date. 121 of these tasks were completed by accountable and 93 of these were done by other roles than accountable. Tasks by accountable were late 41 times and early 64 of the time. So little bit over half of the tasks were recorded done on the same day (53,6%), around one fifth was recorded late (18,14%) and 27,43% was recorded completed ahead of time. Compare these to the values of the group of users with non-accountable RACI roles, whom had of the total of 209 tasks completed and 93 task on time (44,45%), 58 tasks were done ahead of time (27,75%) and 58 tasks (27,75%) were done late. (Chart 4)

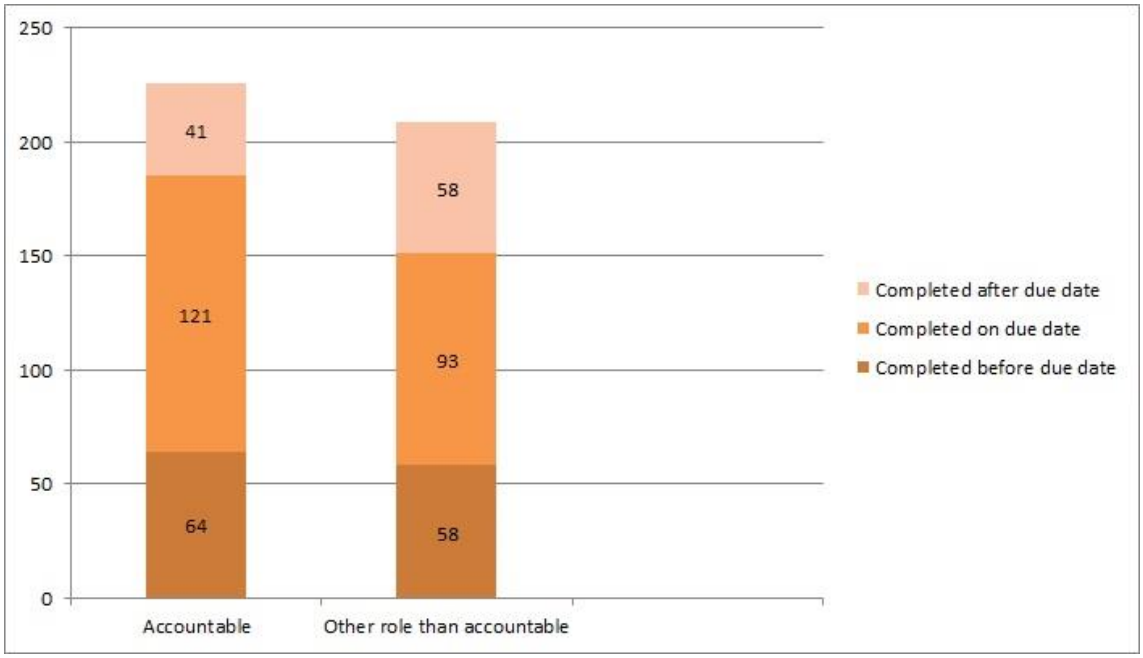

Chart 4. Tasks completed by time.

According to this data accountable would have a larger respect towards the due dates, with more task done by the due date. Although, this can be biased since the accountable is commonly the individual who sets the due dates and can set them according to his or her own schedule and needs. Also the users in other roles completed their tasks a head of time more often. Next factor to consider is the amount of time the task was late or early, since these can have a huge effect on the process as whole, if important tasks are late or also if tasks are done a lot of early, it can tell about the capabilities of the person who is responsible of timing the projects.

In total here were 99 tasks done late, 224 finished on time and 122 finished early. When we look at the tasks done late on average tasks were late -1,49 days, with both median was -1 and the mode was -1. So most of the tasks were one date late, with the largest number being late 39 days. When we look at the tasks completed early, the average was 8,1, median was 1 and the mode 2, with few tasks being done over 70 days early, they have a great effect on the average.

Group Statistics

	Accountable	N	Mean	Std. Deviation	Std. Error Mean
Days early/late	Accountable	222	2,77	10,661	,716
	Not accountable	241	2,49	10,128	,652

Table 5. Mean, standard deviation and standard error of mean.

Comparing Chart 5 where we can see the standard deviation of the whole sample and Table1 which shows the standard deviation differences between the two variables Accountable and Not accountable suggest that the standard deviation between these two variables is similar and these variables don't seem to make a difference in the standard deviation. To scientifically ensure this significance or lack of it we will make a Levene's Test and a T-test to test the variables homoscedasticity.

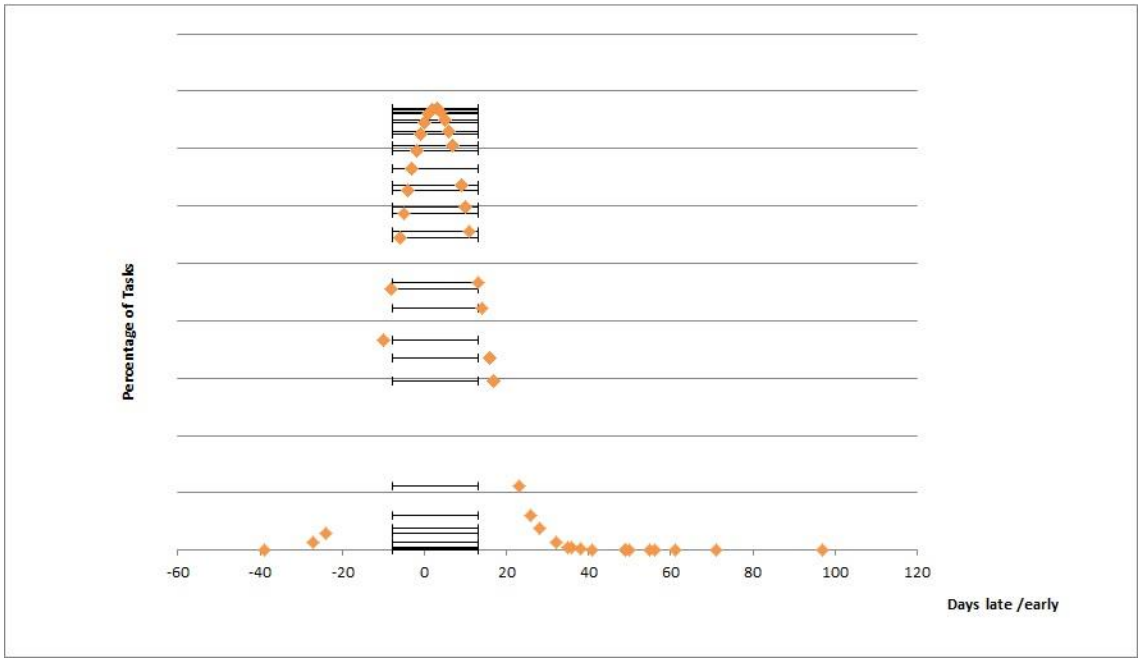

Chart 5. Standard deviation of the tasks timings.

Levene's Test

Levene's test is highly used in research to observe the variation in the means of two variables. To test the variables homoscedasticity, meaning the dependent variable's variance is similar across the different values of the independent variable. The test result is show as a p-value, if the p-value is less than the chosen significance the null hypothesis is rejected, meaning there is no real difference between these two sub-sets of

the population and the likelihood that these are random sampling of the population is small.

From the previous graphs (Chart 1-5) we can see the difference in the independent variables “days early / late” between the variables: “Accountable” and “Not accountable”, with Levene’s test we can ensure that these variables have equal variances, with independent variable being the dates late or early. The null hypothesis is that these variables are similar in shape and distribution, if the p-value or the significance is higher than the chosen significant 0,05. The result of the Levene’s Test for equality of variances was that ne significance was 0,723 (Table. 6) which is significantly higher than 0,05 , so we can accept that equal variances are assumed with the two variables.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Days early/late	Equal variances assumed	,126	,723	,290	461
	Equal variances not assumed			,289	452,934

Table 6. T-test of the two variables.

T-Test

T-Test is used in research to find out the equality of the means of the chosen dependent variables. When we compare the result of the T-Test the T value .290 with equal variances assumed (Table 6.), which means that the means of the two dependent differ by .290, so the difference is not highly significant. By looking at the “equal variances assumed” line of the” two tailed significance” with equal variances assumption was ,772, so we can accept the null hypothesis, which says the means of groups are not significantly different (Table 7.).

Independent Samples Test

t-test for Equality of Means		
Sig. (2-tailed)	Mean Difference	Std. Error Difference
,772	,280	,966
,772	,280	,968

Table 7. Reveals the results of the T-test, that the significance between the two variables is significantly higher than the set 0,05.

6.2 How accountability affects the task being late.

It is not surprising result that the variables non accountable and accountable have don't have a significant variance since the tasks on time are counted to the independent variable and they count for over half (53%) of the sample (Chart 4), for a business point of view more important is how the accountability effects the tasks being late, since these can affect the others task and the execution of the decision as whole.

Next step is to focus on the tasks being late and how the accountability affects it. When looking at the percentages, more often tasks were done late by non-accountable users, than by users, that were accountable. 18,1 % of the tasks were late for accountable user and 27,5 % for non-accountable users (Chart4). Also the difference between Mean and standard deviation between these two variables were large (Table 8.). For more accurate and scientific information Levene's test and T-test will be tested to measure these.

Group Statistics

	Accountability	N	Mean	Std. Deviation	Std. Error Mean
Days late	Not Accountable	59	-1,24	,773	,101
	Accountable	42	-1,83	1,820	,281

Table 8 Standard deviation of tasks late.

As the table 8 shows the difference in means; if non-accountable users were late, they were less late (1,24 days late) than users who were accountable for the decisions (1,83 days late). The difference between standard deviation is also immense, comparing the

0,773 of Non Accountable to 1,820 of Accountable, meaning that the spread of days late on Accountable is much higher, compared to non-accountable.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Days late	Equal variances assumed	14,632	,000	2,250	99
	Equal variances not assumed			1,998	51,609

Table 9 Independent T-test and Levene's test for the data

For more in-depth analysis the T-test and Levene's Test were made. To confirm the 1st hypothesis in this thesis, the significance level of Levene's Test for equality of variances should be under 0,05, the common level of significance for p-value for the strong evidence against the null hypothesis, that the samples don't vary from each other. Since the significance level is 0,000 there is strong evidence to reject the null hypothesis, meaning equal variance is not assumed (Table 9). This can also be confirmed from the table 8, by observing that the standard deviations are highly different 0,773 vs 1,820.

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Days late	Equal variances assumed	,027	,596	,265
	Equal variances not assumed	,05	,596	,298

Table 10 T-test of tasks being late (Mean & Std. error differences)

Since the p-value itself is not enough to support the hypothesis, its rather just to reject the null hypothesis. A T-test is needed to confirm the significance of the variance of the means. When observing the significance level of the samples variance difference (table 10), the second row must be read, because the equal variances are not assumed. The 2-tailed significance level for means is 0,05, which is the level of the significance value for the thesis 0,05 meaning it is on limit of greater significance. It could be said that the

hypothesis one is supported by moderate significance and there is a relationship between the ownership of the tasks and how much late they are. The mean difference is 0,596 meaning that the tasks is done late on average 0,6 days later if the task owner is assigned to do it. T-test also shows the confidence interval of the mean difference. With equal variances not assumed we can confident with 95% accuracy that the difference goes between, -0,03 to 1,195 (Table 11). This also justifies the hypothesis, since there is only a slight chance that the task is done late more often by non-accountable.

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
Days late	Equal variances assumed	,070	1,122
	Equal variances not assumed	-,003	1,195

Table 11 T-test for equality of the means

Also an ANOVA test was created to confirm this hypothesis. ANOVA is similar to T-test and it is also used to analyze the variance and differences of means. It can be used to analyze the difference on two or more groups, but in this case only two groups were in use, so it's quite similar to T-test. Since T-test results were exact 0,05, which is the exact level of significance, it is good to also do the ANOVA to confirm the results. Two numbers to observe are the F ratio and significance. If the F ratio is close to 1 a null hypothesis is expected. A larger F ratio indicates that the results are not created by chance alone.

Between these two groups the F ratio is 5,061, far greater than 1 (Table 12). Meaning there is a relationship between the variables and the results and the null hypothesis can be rejected, but this could be already expected because of the results in tables 8 and 7. The significance level in Anova test was 0,027, which is lower than the 0,05, meaning that it great significance in the relationship.

ANOVA

Days late

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8,716	1	8,716	5,061	,027
Within Groups	170,511	99	1,722		
Total	179,228	100			

Table 12 Anova test for the data

With this information we can confirm that there is a negative relationship, between being the accountable of the decision and doing your own activities in time, compared to persons who are in different roles and are given the activities in the decision.

6.3 How commitment correlates with individual's engagement with the decision?

Fingertip software uses the RACI method on giving roles to users. In traditional organization settings roles are most likely given by ones title, function, organizational hierarchy and structure. In Fingertip the roles are defined separately for each individual decision. RACI model consist of four roles, A) Stand for accountable, who is in charge of the decision and its progress of forward, R) is for responsible which are sometimes called "work horses" they are responsible for the action and efficiency of the decision, so they have some effort to give for the decision, C) are consulted, that are asked to share their knowledge on the subject, and I) Informed are people who are informed of the decision, but are not required to participate to the decision.

As found out in the literature review, engagement and activity with the decision, should indicate better commitment toward finishing the decision and it was mentioned one of the pro things on politics in decision making, engaging individuals to the decision, which should positively affect the implementation of the decision. In the Fingertip system good measurement of engagement is the use of approval. One similar phase in Mintzber et al (1976) model of unstructured decision-making and Herbert Simon's rational decision-making model is the evaluation phase in unstructured decision-making model and choice in Herbert Simon's model. However the description and normative theories differ here, since in Simon's model it's emphasized as one of the most important parts and lot of normative research focus on it, discrepancy here is that as Mintzberg et al pointed out the reality is this routine was relatively indifferent and resources was spend elsewhere.

In Fingertip software this mode is illustrated, in "Propose" phase, where the accountable gives a proposal of the solution. The accountable and the users with "Responsible", and "Consulted" RACI roles are allowed to give their stance on this. The hypothesis here is that users, that have to engage more with the decision: Users in "Accountable" &

"Responsible" RACI roles should be more eager to give their stance, compared to users with "Consulted" RACI role. Since informed cannot offer their stance they are left out, with "Accountable" RACI role since he or she has to give a stance. The culture would require everyone to give a stance, but because of time and resources constrains, users don't always give them and the "Accountable" RACI role is allowed to move forward without waiting for everyone's stance. It would be fruitful to also study how the commitment affects the outcome of the stance "approve" or rejected", but with the limitations of the work I've decide to leave the factor out and focus only in how the commitment effects giving the stance, not its quality.

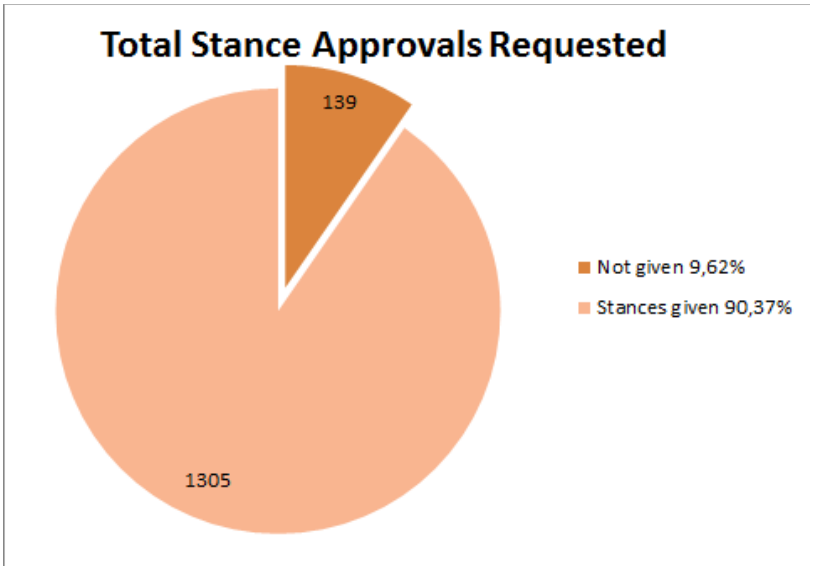

Figure 12. Total amount of stance approval requested.

In 2015 there was 1414 stance request given to tactical and strategic decisions. 90,37% were answered by either "Approve or "Reject" and 9,62% was not answered, meaning users didn't give their view of the solution (Figure 12). This means there was significant interest in given one's opinion about the subject matters. Since only tactical and strategic decision was measured, this goes in line with the current research which suggested that especially strategic decision making gets attention and interest in organization, since its impact are large around the organization, enhancing the amount of political action during the decision-process (Nutt & Wilson 2010: 105). Also as the Fingertip software has been designed to make the deciding part easy, it has been designed in a way that, users can give their stance with ease, so from the technical side this shouldn't be a problem, since the time to give your stance in minimal (under 10secs), so the reasons should lie in one knowledge and commitment to the issue.

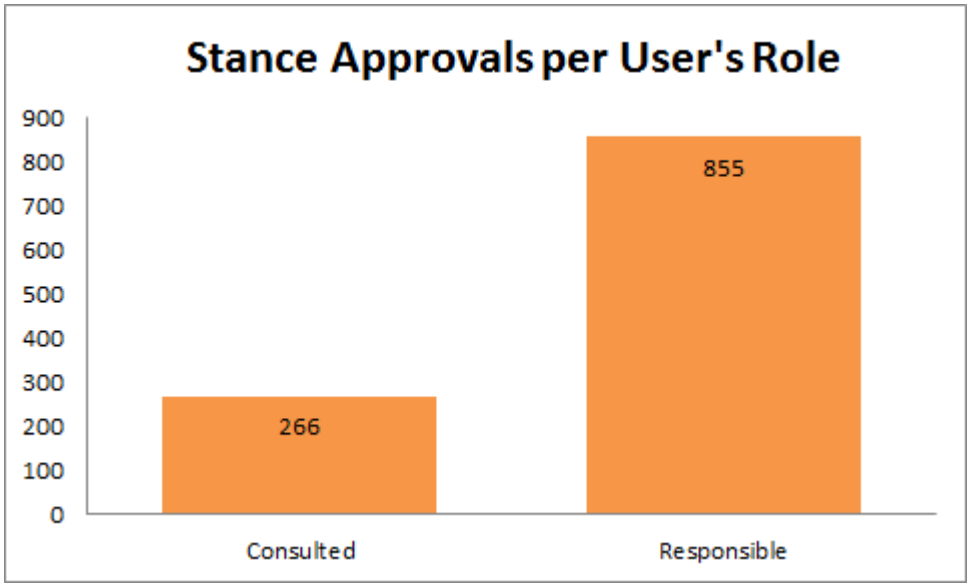

Figure 13. Stance approvals by RACI role.

Between "Consulted" and "Responsible" RACI roles there were 1121 stance approvals requests: 266 were given to "Consulted" and 855 were given to "Responsible" RACI roles (Figure 13). Meaning 293 Approvals were given by Accountable and they are not taken in count in the calculations since they are mandatory for progress of the decision. This tells us that the "Responsible" RACI role was much more used than "Consulted" RACI role.

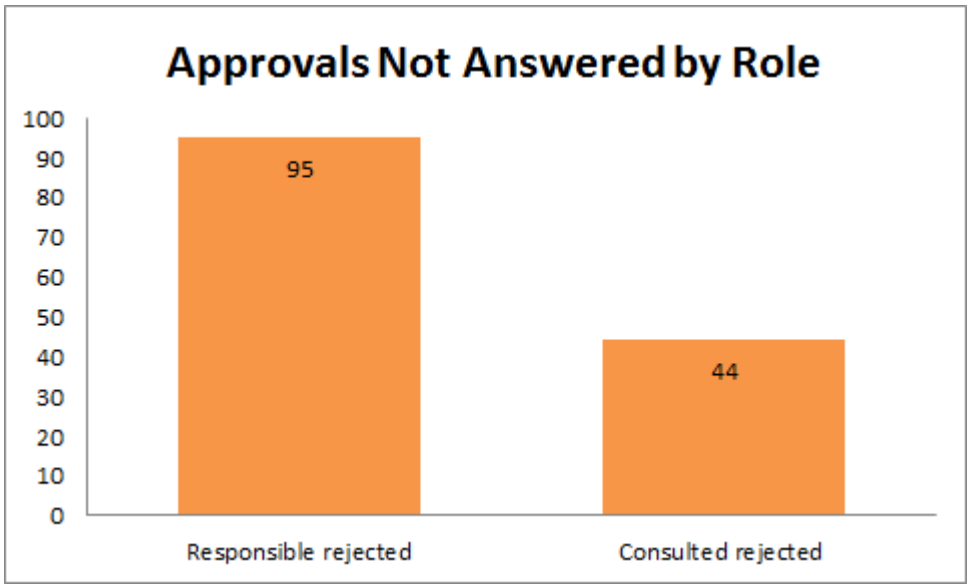

Figure 14. Approvals not given.

When the amount of approvals not answered is analyzed "Responsible" RACI role

didn’t give their stance 95 times and “Consulted” didn’t give their stance 44 times (Figure 14). Even though in share amount “Responsible” roles didn’t give their stance more often, but when compared to the amount of request they got, “Responsible” roles gave their stance more often, they gave their stance 88,89% of the time, compared to “Consulted” who gave their stance 83,46% of the time.

To test these results in more detail, these data statistics are set to SPSS program to determinate their relationship in a more scientific method. A Chi-square test is used to test the correlation and cohesion of “Responsible” and “Consulted” RACI role usage of approval. Chi-square test is used when all the variables are categorized, which is the case here, since both the “role” and the “Stance given” can be answered in binary way: “Responsible” or “Consulted” in RACI role selection and “Yes”, and “No” in “Stance given” section. Chi-square test shows if the association between the variable is significant, but doesn’t show the true strength of the relationship. Hence, Chi-square test is used to prove that the variables have cohesion, so other test just as Phi-test can be done, to focus on the significance of the relationship. In Table 13, we can see that all the 1121 variables in the sample were valid for the Chi-square test and the sample could be test as whole.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Role * Missing	1121	100,0%	0	0,0%	1121	100,0%

Table 13. Chi-square test role * Missing.

From sample the observed counts must differ from the expected count, otherwise there is no need for Chi-square test. From the Crosstabulation (table 14): Role * Missing: Crosstabulation we can see that there is difference in the sample between the expected (Expected count) and observed (Count) rows. For example on the “Consulted” RACI role, without any interference it should be expected that 33,2 stance approvals would be ignored, but in total there is 44 Stance Approval given. In Responsible RACI role, 106,8 was expected to be ignored, but it was observed that 96 was ignored.

Role * Missing Crosstabulation

			Stance Approvals		Total
			Stances Ignored	Stances Given	
Role	Consulted	Count	44	221	266
		Expected Count	33,2	232,3	266,0
	Responsible	Count	96	758	855
		Expected Count	106,8	746,7	855,0
Total		Count	140	979	1121
		Expected Count	140,0	979,0	1121,0

Table 14 Crosstabulation test Role*Missing.

The Chi-square test shows are these associations scientifically significant (table 15). First thing to look at is the item a) at the bottom of the Chi-square test table, if the amount of cells, that have expected count lower than five is more than one fifth or 20 percentage, the test is violated and other course of action should be taken, this is important since its one of the basic assumptions of the Chi-square test. In this sample the number of cells with value under 5 is 0%. The minimum in this sample is actually 33,15.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5,313[a]	1	,021		
Continuity Correction[b]	4,835	1	,028		
Likelihood Ratio	5,026	1	,025		
Fisher's Exact Test				,025	,016
N of Valid Cases	1119				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 33,15.

b. Computed only for a 2x2 table

Table 15 Pearson Chi-square Role*Missing

Because of there were 0 cells that had expected count less than 5, the rest of the table can be interpret. The Pearson Chi-Square value is 5,313, which is the Chi-Square statistic, with 1 degree of freedom (df) and the p-value, also known as significance value is 0,21 (Asymp. significancy, 2-sided). Testing this against five point value of significance, also called as alpha value, which is common limit for scientific significance in behavioral studies. As the alpha value is 0,05 and the p-value in the test is 0,021. So there is cohesion between the variables and we can accept our hypothesis

that there is significant association between the role and the ignoring of the approval. Hence, the ignoring of the approval is dependent on the role given.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	,069	,021
	Cramer's V	,069	,021
N of Valid Cases		1119	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 16. Phi-test for symmetric measures.

Taking square of p-value divided by the sample size, offers us the Phi coefficient, which gives us the direction of the association. Phi coefficient is a non-parametric test between two dichotomous variables testing their relationship. Table 17 shows us that the Phi coefficient value is 0,069. The scientific methods argue that the Phi coefficient value between -0,1 to 0,1 is weak or nonexistence, meaning there is no systematic pattern between the variables in 2x2 table.

6.4 Does more discussion encourage users to engage the decision?

Since the earlier research has found, that the engagement and commitment enhance the users input in the decisions. Commitment of individuals should also improve individual's engagement to the decision. Some research has also suggested general engagement in the decision could improve the commitment of individuals (George & Chattopadhyay 2008: 374; Guth & Macmillan 1986). The hypothesis three tests do the general level of engagement in decision, increase the commitment of individuals, regardless of their own engagement. The variables are the amount of comments in decisions and pending approvals in decisions. Comments are the most used action in decision, since they are the main way to communicate and provide information, for example files and links can be shared via comments, which make them perfect measurement of engagement. Approvals are good measurement of commitment, since giving one is fairly easy and they have same value statically regardless how gives them.

Since both of the sample's variables were continues variables, a Pearson's r, also known as Persons correlation coefficient. Result gives a value between +1 and -1. +1 means a positive correlation, -1 means a negative correlation and 0 or value near 0 means no correlation. For the results to support hypothesis 3 the Pearson's R should be negative number, close to -1 to increase the significance, since the hypothesis states that more engagement (comments), would equal to more commitment (less approvals left pending).

Correlations

		Pending Approvals	Commets
Pending Approvals	Pearson Correlation	1	-,073
	Sig. (2-tailed)		,697
	N	32	31
Commets	Pearson Correlation	-,073	1
	Sig. (2-tailed)	,697	
	N	31	31

Table 17 Correlations measured by Pearson's Correlations

Results show that the Pearson r correlation coefficient is -0,073 (Table 17). This would mean there is little negative correlation, but it is minimalistic strength in the relationship between the variables and can't be used to prove the hypothesis in one way or another. Even larger problem is the significance level (Sig. (2-tailed) in table 17). In social science the significance level 0,05 is usually chosen to separate the formation of phenomenon or relationship, if the level is higher than 0,05 the normal variance or luck cannot be ruled out to explain the effect in the relationship. This is important since Pearson's r isn't robust meaning that values, which are distant from the main observations, can affect the Pearson's r value heavily and create statistically misleading results (Wilcox 2012:50-52). This is especially true in this case were the samples sizes are small N=32 and N=31 (Table 17).

The 2 tailed significance is 0,679 in this sample meaning it is significantly greater than the level of 0,05 meaning individual observation points have an enormous influence in the results, so there is a great probability that the tiny negative relationship between the variable is created by chance and/or individual observations with highly executional properties. Therefore the hypothesis three can't be supported in either direction by this research and therefore it is rejected.

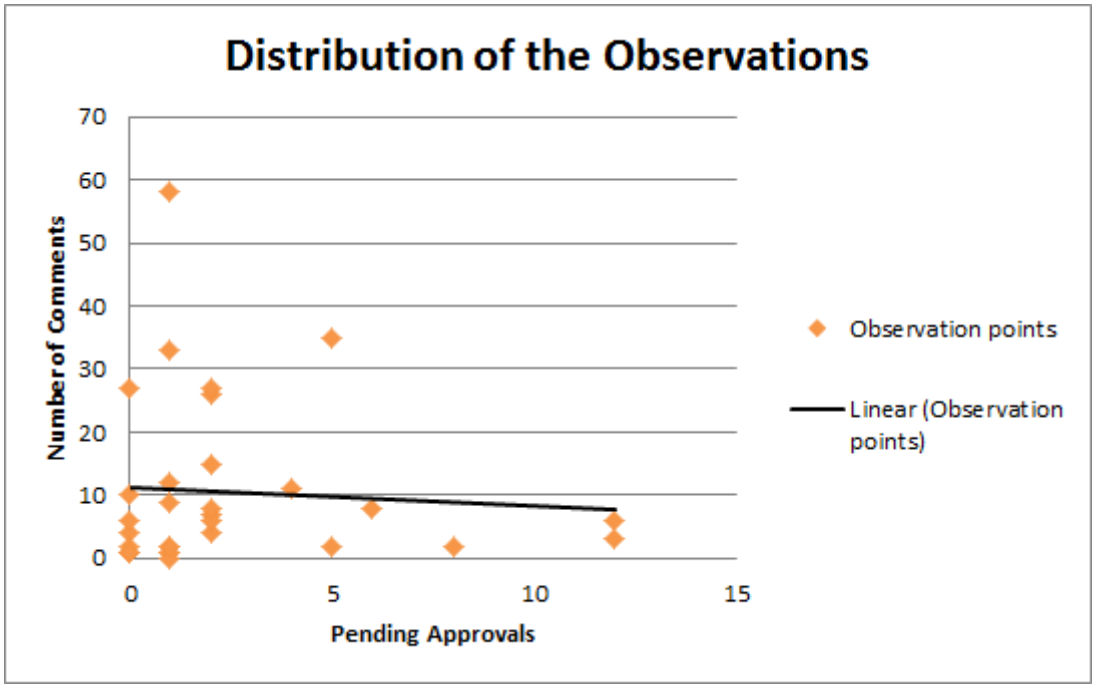

Figure 15. Distribution of observations Comments/Approvals

The problem of the spread is illustrated in the figure 15. Even as the line that represents the linear trend line is showing light decrease in number of comments when there is more pending approvals. We can see that the distribution of the observation points are wide, especially when the total N is fairly low and there is a lot points near the bottom left corner meaning their contribution compared to the ones spread more widely is smaller. On the other hand we can observe that except for one observation point all of the decision with high amount of comments has only few missing approvals, but the current sample size is too small to support this relationship.

7 Conclusions:

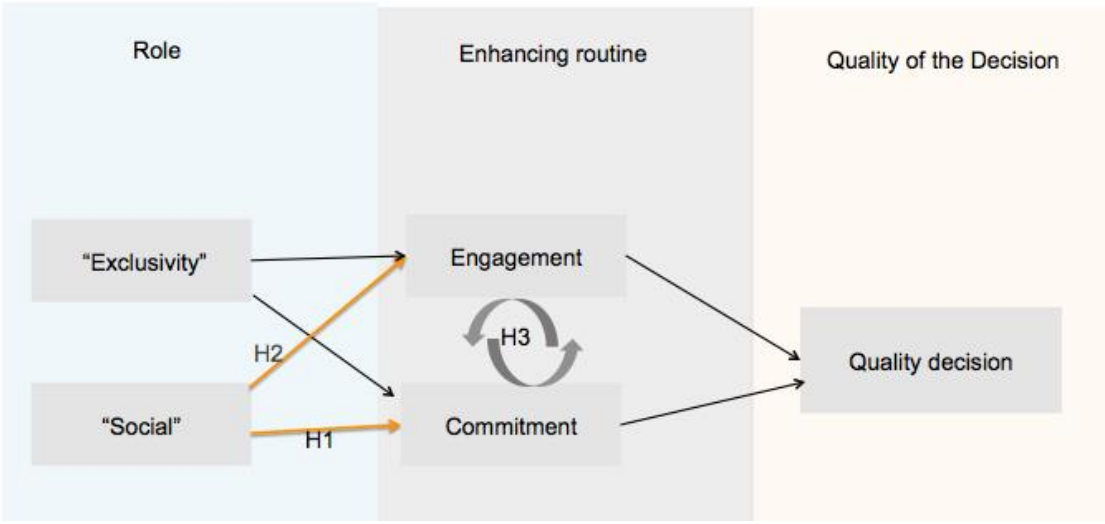

Figure 16. Orange lines indicates, which variable from the point of view had a larger causality with engagement and commitment.

Since the decision-making process is complex and because of the multitude of factors effecting decisions, controlling them is traditionally highly related to power and control, this means that the rational decision-making is usually plagued with politics (Royer & Langley 2008:251). Leadership is required to push the decisions forward and towards rationality, especially in heterogeneous groups of experts (Barrett & Oborn 2010: 404). Modern dynamic business environment and the complex nature of knowledge work require organizations to cut off on hierarchy for more agile and efficient structures (Kulkki 2002: 501).

Since the lack of hierarchy is seen as lowering accountability (Hendricks 2005), this research focused in how the decision can be made the best way and also implemented, by shared leadership (Bolden 2011). Since the decision-making process is highly complex and because of the restrictions on creating the thesis, this thesis focused on two factors that are highly important for successful decisions: Engagement and Commitment (George et al 2008: 373-374).

Engagement and commitment are required in all the phases described in both normative

and descriptive research of decision-making: Raising the problem/opportunity, gather the information, choosing the solution and implementation all requires engagement and commitment to succeed (Simon 1955; Minztberg et al 1976). With commitment and engagement the "alert" of the problem or opportunity spreads faster, information is gathered better in the group and also filtered to counter the abundance of information and the implementation is more fluent.

First research questions focused on commitment towards decisions and how does the social context or pressure affect the commitment (Figure13). This was measured by analyzing the activities in decisions and how they were done, the variable were if the activity was done by the decisions owner and accountable or a user with less influential role on the decision. In hierarchy models the accountability and commitment is seen as an attribute that comes with the position individual has in the organization (Sine et al. 2006). The outcome of the data in this study suggest that the role inside one decision, doesn't affect the commitment, actually when users were not accountable themselves, but accountable to another person they were less late and if the task was delayed the time it was delayed was less.

This result emphasize the shared leadership view, were the groups with less hierarchy actually share the leadership and the group pressure and the will and commitment for the group, pushes the individual to reach his or her commitments (Pearce & Sims 2001). One driving fact to this is the transparency, which offers the benefit from both the groups and individuals view. Individual can share the activities done for others and in the group level it can be viewed how people are committing and is everything on time or does something need extra help. As the research suggest that the lower hierarchy reduces accountability and transparency (Hendricks 2005), it is highly important to have a transparent work culture and structure, which Fingertip itself preserves (Pellosniemi 2015). Hence, even if the research and organization are talking about decision making, at the end the decisions don't commit the individuals, but the actions in it commits them (Dooley et al. 1999; Salancik 1977). So this results support the older research from Leavitt and Bahrami (1988) that groups themselves offer commitment towards activity of its members in decision-making.

Seeing the commitment of oneself and others creates commits the whole group, but this is not enough if the commitment is towards the group and not to the action, since the things needs to be implemented and finished. The second research question was about how the engagement is built in the decision (Figure16), does it come from the power

and hierarchy or from the activity one has in the decision. Responsibility is mostly seen in research as an external approach, how others view who is the responsible (Vidaillet 2008:422). This is why in formal organizations the position is important since it sets your responsibilities. Contradict to this behavioral science tells that the commitment is towards the actions one does, not towards the decision decided (Rojot 2008:144; Salancik 1977:26).

As Fingertip uses RACI to assign a role to everyone in decision, which determinates what is required from each individual. Individuals in Responsible role are known as "workhorses" and are required to have some sort of effort in the decision. Users with Consultant role are expected to give their opinion or approval for the decision, but are not required to have an active participation on the decision. Both responsible and consultant users can give their approval or rejection for the decision. This thesis focus on the data of these approval process and how the engagement role affects the giving of it. Even though the responsible users had other tasks on the decision and had to spend more of their time on it, they were more likely to give their stance, than consulted ones, even though this was basically the only job they had in the decision. Hence, this thesis data supports the behavioral science mark that the activity is the way to engage users to the decision (Rojot 2008:144; Salancik 1977:26). Since they have given their valuable time and effort to the decision, they also want to get their voice head and have the attitude to drive the decision forward. If there is no commitment to the decision the members are unlike to give extra energy towards it (Korsgaard et al 1995). Research has emphasized the importance of small micro level goals and obtaining these to achieve the macro level decision and strategies (Cyert & March 1963), this data supports that it would be beneficial to give even lesser members their own activities and targets in the decision to keep their motivation up, especially if it's a strategic decision required effort from various persons and time to develop.

This thesis data supports the research that emphasizes the meaning and importance of social context and group behavior in decision-making especially in the action part. This thesis doesn't offer as much new information to this view, but its importance is in the context which is created since it focus on low hierarchy structure with large transparency, which is coming requirement in modern organizations (Kulkki 2002: 501), compared to older research with focus on more on hierarchical structure.

Last research questions concentrates in the commitment and engagement, if these two correlate with each other and would boost both of them. From the figure 16 we can see

that the decisions with most engagement also were near the best commitment level, but the large spread of this data compared to the sample size doesn’t offer scientific level significance to back this up (table, 18).

8 Managerial Implications:

8.1 Engaging and committing individuals.

Even though this thesis focus on start-up organization, with small amount of employees, it can be also useful for larger organization, since the current trend in knowledge work is moving towards flat organizational structure (Kulkki 2002: 501). As the commitment and engagement of employees is highly important for the organization, for groups inside it and the decision that drive the organization forward, it is highly alarming that for example most of the employees feel disengaged in their work (Gallup America 2015).

This thesis empiric analyze supports the research that individuals should be give activities and possibilities to influence the decision and even better ways to show this to everyone else, this kind of activity creates the commitment and engagement, that can remove some of the barriers suggested by political decision-making theory and making the rational decision-making more possible.

Especially this is relevant, when the digitalization goes further and tracking and measurements enables organizations to measure the modern knowledge work the way mechanical work is measured. This raises one interesting questions for the management, should this tracked data or knowledge of employees be concealed from them and only used for higher management or shared around the organization. Date in this research suggests that the transparency, especially on decision, group and process level can be beneficial and support the organization.

Just as I was finishing my thesis Harvard Business Review wrote about the large study on Red Hat and how they have opened their organizations decision-making. One of their CEO big surprise were how their mission statement had nothing to do with their organization's and employees day-to-day activities, with a transparent process which they created their new mission statement to engage their employees more to their values is a great example of how engaging the employees early on and give them a chance to engage them increase the commitment and collaboration, just like Cyert and Simon observed in the 50's (Cyert et al 1956). (Jim Whitehurst 2016)

This research focus on organizations internal communication (there is few external

stakeholders included for example accountants, consultant and partners), but this kind of analysis of engagement and commitment could be for example done from customer or prospect forums or website to see how these groups could be engaged and invited to decide or interact with the organization.

8.2 Limitations of the study

Current research points of that homogenous groups work better in teams and their coordination doesn't need as much effort (Barret & Oborn 2008; 404). Since this research focus on a small company it raises questions can this be generalized for large population? Even though the organization is small, the sample is quite heterogeneous culturally; there are 7 nationalities included: Finnish, French, German, British, Irish, Indian and Bangladeshi. Also the individuals are in various positions, education, functions and work cultures, since the group includes summer trainees, board members, coders, marketing, human resources and sales, also people who don't work anymore at the organization. Also there are other stakeholders in the Fingertip environment than only employees, board members, partners and outsourced personnel: coders and accountants. This also means the users are not under same roof, but are spread. Hence, for its size it offers fairly heterogeneous sample for the study.

Also the question about formal and informal challenges is interesting, since a lot of political behavior and individual actions are done informally (Mintzberg et al 1976). Since Fingertip could be viewed as a formal channel, since it represents organizations intranet, it could be argued that all action are not detected in this study. The problem with studying decision-making retrospectively is that our cognitive processes are highly bias and also our behavioral is. Retrospectively we are compelled to memorize our actions towards a rational or united goal, than what we were ordinary intended (Argyris 2010 62). Framework around this behavior was done by Argyris & Putnam, in theory-in-use and espoused theory. This makes it hard or even impossible for the researcher to identify from questionnaires or interviews, which answers are biased and not according to real situations. For this reason I chose this option of using retrospective empiric data on behavior itself and not focus on interviews and questionnaires.

This data offered it challenges also and with the limited resources some of more accurate and informative studies and measurements couldn't be done. With better resource and time a more longitude research would for example open these matters

more and reveal how these develop during time. Also comments “value” is hard to measure since, in this thesis they shared the same value, but in reality they can vary from few word comment to a long monologue, so a deeper and qualitative analysis of comments context and length could reveal more valuable knowledge.

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Empiric data used in the thesis can be downloaded from the website: https://drive.google.com/open?id=0B-hhW2sjvmFXWmVTWlVTQ2txTDQ . All individual information such as user names have removed, all specific information that can affect the organizations such as Decision names, comment body and other qualitative data is removed, but the data that is needed for the quantitative analyses and graphs in this thesis is included.